TOWNSHIP OF EAST FRANKLIN
ARMSTRONG COUNTY, PENNSYLVANIA
ARTICLE VII ORDINACE SECTION 746

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF THE TOWNSHIP OF EAST FRANKLIN, ARMSTRONG COUNTY, PENNSYLVANIA, CREATING A NEW SECTION 746 ENTITLED "RENEWABLE ENERGY SYSTEMS"

WHEREAS, The Second Class Township Code, as amended, enables a municipality to regulate and to promote the conservation of energy through access to and use of renewable energy resources; and

WHEREAS, the purpose of this Ordinance is to provide a regulatory framework to promote the safe, effective and efficient use of renewable energy systems to reduce the consumption of non-renewable utility-supplied energy, heat, hot water, or any combination of the above, while protecting the health, safety, welfare of the residents of East Franklin Township, and while protecting adjacent land uses; and

WHEREAS, the East Franklin Township Board of Supervisors desire to amend the Code of the Township of East Franklin; and

NOW, THEREFORE, BE IT ENACTED AND ORDAINED, by the Board of Supervisors of the Township of East Franklin, Armstrong County, Pennsylvania, as follows:

The Code of the Township of East Franklin, Armstrong County, Pennsylvania is hereby amended by adding Article VII, § 746. The entire text of the new Article VII, § 746 shall be as follows:

§ 746: Renewable Energy Systems

A. Purpose: The purpose of this Ordinance is to provide for the construction, operation and decommissioning of Renewable Energy Resource Facilities in East Franklin Township, subject to reasonable conditions that will protect the health, safety and welfare of the public.

B. Definitions:

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

CELL: The smallest solar electrical device which generates electricity when exposed to light.

CODE: For the purpose of the Article, the term "Code" or "the Code" shall refer to the Code (or ordinance) of the Township of East Franklin.

ENERGY SYSTEM TURBINE: The part of the renewable energy system that is the driving force (usually blades) to rotate a generator to produce electricity.

INTERCONNECTION: The technical and practical link between the energy system generator and the grid providing electricity to the greater community.

ISLAND MODE: The ability of a renewable energy system to operate on its own without being connected to a grid.

MICROGRID: A group of interconnected loads and distributed energy resources (Nanogrids, Principal Solar Energy Systems, Wind Energy Systems, Natural Gas, etc.) that act as a single controlled entity with respect to the grid. It can connect with the grid or disconnect from the grid to operate in island-mode should physical or economic conditions dictate.

MODULE: The smallest protected assembly of interconnected PV cells.

NANOGRID: A single domain of autonomous power, single voltage, frequency, reliability, quality, capacity, and administration. Energy generation and storage is internal to a nanogrid.

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

SOLAR ARRAY: A grouping of multiple solar modules with purpose of harvesting solar energy.

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

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

SOLAR MODULE: A grouping of solar cells with the purpose of harvesting solar energy.

SOLAR PANEL: Part 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 winter heating, and/or for electricity.

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

WIND ENERGY SYSTEM HEIGHT: The height shall be measured from the ground surface of the Wind Energy System tower to the highest point of the extended blade tip.

§ 746-1: Types of Systems:

A. SOLAR ENERGY SYSTEMS

1. ACCESSARY SOLAR ENERGY SYSTEM – an area of land or other area identified for a solar collection system used to capture solar energy, convert it to electrical energy and supply electrical energy or thermal power primarily for on-site use. An accessary solar energy system consists of one or more freestanding 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.

2. PRINCIPAL SOLAR ENERGY SYSTEM – A utility scale solar photovoltaic system designed for off-site use i.e.: direct utility interconnection. It is an area of land used for a solar collection system principally suited to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily to off-site customers. Principal solar energy systems consist of one or more free-standing ground 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.

3. SOLAR PHOTOVOLTAIC (PV) SYSTEM – A solar collection system consisting of one or more buildings and/or ground-mounted systems, solar photovoltaic cells, panels or arrays, and solar related equipment that rely upon radiation as an energy source for collection, inversion, storage, and distribution of solar energy for electricity generation. If the power from a solar application's primary purpose is to be sold for commercial gain, and not for off-setting electric usage through net metering, then it shall be considered a utility-scale solar application.

B. WIND ENERGY SYSTEMS

1. WIND TURBINE ENERGY SYSTEM - An energy conversion system consisting of a wind turbine, a tower, blades, and associated controls and appurtenances that convert wind energy to usable form of energy to meet all or part of the energy requirements of the on-site user.

2. WIND MILL ENERGY SYSTEM - a structure with sails or vanes that turn in the wind and generate power to grind grain into flour, a structure using wind to generate electricity or draw water.

C. HYDRO ENERGY SYSTEMS

1. A form of renewable energy that uses the water stored in dams, as well as flowing in rivers to create electricity in hydropower plants. Hydroelectric power, is a renewable source of energy that generates power by using a dam or diversion structure to alter the natural flow of a river or other body of water. Hydropower relies on the endless, constantly recharging system of the water cycle to produce electricity, using a fuel—water—that is not reduced or eliminated in the process. There are many types of hydropower facilities, though they are all powered by the kinetic energy of flowing water as it moves downstream. Hydropower utilizes turbines and generators to convert that kinetic energy into electricity, which is then fed into the electrical grid to power homes, businesses, industries, etc.

2. Three Types of Hydro Electric Power Systems are impoundment, diversion, and pumped storage and examples are:

a. Dams on a waterway - A hydroelectric dam is a large, man-made structure built to contain some body of water. The purpose of a hydroelectric dam is to provide a place to convert the potential and kinetic energy of water to electrical energy by using a turbine and generator.
b. Diversionary Structure - A diversion, sometimes called a "run-of-river" facility, channels a portion of a river through a canal and/or a penstock to utilize the natural decline of the river bed elevation to produce energy.
c. RiverCurrent - RiverCurrent energy systems capture the energy from river currents. These systems are often designed as floating platforms or pontoons anchored in rivers.
d. Hydrokinetic - Underwater turbines are one of the most common methods of harnessing hydrokinetic energy. These turbines are installed underwater and capture the kinetic energy of water currents, converting it into electricity.
e. Pumped Storage - Like every other hydroelectric plant, a pumped-storage plant generates electricity by allowing water to fall through a turbine generator. But unlike conventional hydroelectric plants, once the pumped-storage plant generates electricity, it can then pump that water from its lower reservoir back to the upper reservoir.

NOTES:

1. Before building a hydropower energy system(s) of any type, you must work with The Hydropower Program at the U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) which supports research, development, demonstration, and commercial activities.

2. See contact list in § **746-5**: Hydro-Electric Energy System(s)

D. **NATURAL GAS ENERGY SYSTEMS (TYPES OF FUELS)** to operate generators/turbines and is considered a low carbon transitional energy system

1. Natural Gas (NG) is a gaseous fuel such as hydrogen, propane, methane, coal gas, water gas, blast furnace gas, coke oven gas, CNG.
2. Compressed Natural Gas (CNG) is a gasoline and diesel fuel alternative consisting primarily of methane. The gas is associated with other fossil fuels (coal or oil) and is created by methanogenic organisms in landfills.
3. Liquefied Natural Gas (LNG) Which can be used as an alternative transition fuel. The gas stream is typically separated into the liquefied petroleum fractions (butane and propane), which can be stored in liquid form at relatively low pressure, and the lighter ethane and methane fractions. These lighter fractions of methane and ethane are then liquefied to make up the bulk of LNG that is shipped.
4. Renewable Natural Gas (RNG) is created when organic waste from sources like landfills or manure breaks down and emits methane.
5. Natural Gas Liquid (NGL) are comprised of ethane, propane, normal butane, isobutane and natural gasoline. They are created by being removed from a natural gas or through refining crude oil.

E. **NUCLEAR REACTOR ENERGY SYSTEMS (Micro or Portable)** operate turbines/generators and is considered a clean, safe, and efficient energy system.

Nuclear energy is a form of energy released from the nucleus, the core of atoms, made up of protons and neutrons. This source of energy can be produced in two ways: fission – when nuclei of atoms split into several parts – or fusion – when nuclei fuse together. (Nov 15, 2022 https://www.iaea.org/newscenter/news/what-is-nuclear-energy-the-science-of-nuclear-power)

F. **HYDROGEN GENERATED ENERGY SYSTEM,** Hydrogen fuel cells produce electricity by combining hydrogen and oxygen atoms. The hydrogen reacts with oxygen across an electrochemical cell— similar to a battery—to produce electricity, water, and small amounts of heat. (Jun 23, 2023) U.S. Energy Information Administration (EIA) https://www.eia.gov/energyexplained/hydrogen/use-of-hydrogen

G. **GEOTHERMAL GENERATED ENERGY SYSTEM,** Magma heats nearby rocks and underground aquifers. Hot water can be released through geysers, hot springs, steam vents, underwater hydrothermal vents, and mud pots. These are all sources of geothermal energy. Their heat can be captured and used directly for heat, or their steam can be used to generate electricity. (Oct 19, 2023) https://education.nationalgeographic.org/resource/geothermal-energy

H. **BIOMASS GENERATED ENERGY SYSTEM,** Biopower technologies convert renewable biomass fuels into heat and electricity using one of three processes: burning, bacterial decay, and conversion to gas. (National Renewable Energy Laboratory - NREL), https://www.nrel.gov/research/re-biomass.html; Biomass can also be burned in a boiler to produce high-pressure steam. This steam flows over a series of turbine blades, causing them to rotate. The rotation of the turbine drives a generator, producing electricity. (Department of Energy) https://www.energy.gov/eere/bioenergy/biopower-basics

§ 746-2: Accessory Solar Energy System (ASES) General Regulations

A. Accessary Solar Energy Systems are designed for on-site, residential use.

B. Accessory Solar Energy Systems (ASES), as defined by this article, are a permitted use in all nine (9) zoning districts as listed in Article IV § 400.

C. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all ASES's.

D. The design and installation of the ASES shall conform to applicable industry standards such as:
   1. PA Uniform Construction Code (UCC), Title 52
   2. International Building Code (IBC)
   3. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030
   4. Underwriters Laboratories (UL) 1741

5. National Electrical Code (NEC) Article 690 and 691 applies to PV electrical energy systems.

E. Metering and storage within an Accessary Solar Energy System:
   1. An ASES may use an individual net metering system. NOTE: Excess electrical power generated and/or stored, and not presently needed for on-site use may be sold directly to the utility company or other microgrid consumers.
   2. An ASES may have a storage infrastructure to function as a nanogrid.

F. Advertising displays are prohibited except for reasonable identification of the manufacturer of the system.

G. Installation of all on-site utility, transmission lines, and plumbing shall be placed underground to the extend feasible. If the applicant contends that underground is not possible, the applicant must demonstrate to the satisfaction of the Board of Supervisors that the lack of feasibility is due to geological or topographic limitations.

H. Maintenance of Accessory Solar Energy Systems (ASES)
   1. The ASES must be properly maintained by complying with UCC standards and inspected by a licensed inspector at the owner/operator's expense 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.
   2. Decommissioning requires solar panels to be removed from the premises within thirty (30) days and properly (certified) disposed of during the decommissioning process.
   3. Solar panels that are non-functioning shall be repaired or removed within thirty (30) days. Removed panels are to be properly (certified) disposed of if it is not repaired within the required time frame.

I. Roof mounted ASES(s).
   1. A roof mounted ASES may be mounted on a principle or accessory structure.
   2. A roof mounted ASES shall not extend beyond the edge of the roof.
   3. A roof mounted ASES shall not extend more than six (6) inches from the top of the roof.

J. Ground mounted ASES(s).
   1. A ground mounted ASES shall comply with the minimum area regulations as required in the underlying zoning district for a principal structure as set forth in Article IV of the East Franklin Zoning Ordinances
   2. A ground mounted ASES shall not be located nearer to the street or right-of-way than the principal structure. Any variation to this ordinance would require an application and fee for a Variance Hearing through the Zoning Department at East Franklin Township
      a. This variance would include a sketch showing the location, configuration, and specifications of the proposed ASES.

b. This variance would include proof that the ASES would not project glare into the road, distract drivers, nor detract from the surrounding properties.

3. The area beneath a ground mounted ASES shall remain pervious as long as the ground slope is less than 10%. Any modification of this section may be cause for denial of the Zoning Permit.
4. A ground mounted ASES in excess of ten thousand (10,000) square feet would not be considered a residential Accessary Solar Energy System and would need to apply for a Principal Solar Energy System.
5. Associated ASES mechanical equipment shall:
    a. Use Primary structure setbacks
    b. Be screened from any adjacent properties in zones R1, R2, & R3
        i. Screen shall be a well-maintained fence or row(s) of evergreens, that are a minimum of four (4) feet in height that conceals the equipment from view
        ii. Screening shall not be within a line-of-sight of driveways
        iii. Screening shall not be in any right-of-way or easement
6. Associated ASES access easements
    a. Consideration should be given to ground mounted ASES as to location so as not to require reliance on adjacent properties
    b. Where necessary to ensure that solar access to an ASES shall not be obstructed over time by permissible uses or activities on any adjacent property (i.e., by planting or growth of vegetation, new construction, etc.), it shall be the responsibility of the owner of the ASES to obtain and enforce appropriate Solar Easements from neighboring property owners. Solar Easements shall be recorded at the Armstrong County Recorder of Deeds.
    c. East Franklin Township (including the Zoning Officer, Board of Supervisors, Secretaries, Police Officers, Road Crew, Planning Commission and Zoning Hearing Board) shall be indemnified from any and all enforcement provisions of Solar Easements. A copy of such solar easement shall be provided to East Franklin Township within fifteen (15) days of recording for informational purposes only. East Franklin Township is in no way responsible for the enforcement or maintenance of Solar Easements. Solar Easements shall include the following language: "As a result of (insert the name of Grantor and Grantee) signing the "Solar Easement"; (insert the name of Grantor and Grantee) shall indemnify, defend and save and hold the Township of East Franklin, their employees, assigns, and successors, harmless of, from and against any and all loss, costs, expense, damage, claim and liability, including reasonable attorney's fees and court costs (including, without limitation, attorney's fees and costs associated with the enforcement of the Solar Easement indemnification obligations hereunder) which East Franklin Township may suffer or incur resulting from, relating to, or arising, in whole or in part, from or out of (i) any transactions which are the

result of and made in reliance on such solar easement; and (ii) any and all actions, suits, investigations, proceedings, demands, assessments, audits, judgements, or claims arising out of or relating to any of the foregoing.

§ 746-3: Community Solar Energy System (CSES) General Regulations

A. The U.S. Department of Energy defines community solar as any solar project or purchasing program, within a geographic area, in which the benefits flow to multiple customers such as individuals, businesses, nonprofits, and other groups. U.S. Department of Energy; https://www.energy.gov

B. After you install solar panels (for a Community Solar Energy System), the energy you harness from them is free. When you join a community solar farm, however, you'll have to pay monthly for your energy allowance. The tradeoff is that you won't have to purchase your own panels if you join under the subscription model, Oct 9, 2023 Forbes; https://www.forbes.com

C. A Community Solar Energy System shall adhere to all the same requirements and regulations as a Principal Solar Energy System.

§ 746-4: Principal Solar Energy System (PSES) General Regulations

A. Principal Solar Energy Systems are designed for utility-scale solar photovoltaic off-site, commercial use.

B. Principal Solar Energy Systems (PSES's are considered commercial or also known as 'solar farms'), as defined by this article, are a permitted use in four (4) zoning districts, C2 Highway Commercial; M1 Light Industrial; M2 Heavy Industrial; A Agricultural; as listed in Article IV § 400 and shall comply with all applicable regulations of this article. PSES's are not permitted in five (5) zoning districts, R1 Rural Residential; R2 Medium Density Residential; R3 High Density Residential; V Village; and C1 Local Service Commercial; as listed in Article IV § 400.

C. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by third party, on behalf of East Franklin Township) shall be required for all PSES(s).

D. The design and installation of the PSES shall conform to applicable industry standards such as:
   1. PA Uniform Construction Code (UCC), Title 52
   2. International Building Code (IBC)
   3. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030
   4. Underwriters Laboratories (UL) 1741

5. National Electrical Code (NEC) Article 690 and 691 applies to PV electrical energy systems.

E. Installation Contractors must validate that they meet or exceed one of the following requirements (certifications):
   1. North American Board of Certified Energy Practitioners (NABCEP)
   2. Interstate Renewable Energy Council (IREC)
   3. Institute for Sustainable Power Quality (ISPQ)
   4. Or, successfully completed a manufacturers PV training program.

F. Ground Mounted PSES (Principal/Commercial) Standards
   1. The PSES shall meet the minimum area regulations of the underlying zoning district for principal (structure) standards.
   2. The PSES shall maintain a setback of fifty (50) feet from an existing residential development property line unless it has direct benefit to the development and/or is made part of said development and then standard setbacks for a commercial property shall be used from the property line to the secured fence surrounding the Principal or Community Solar Energy system. The fifty (50) feet between the fence and the solar panels shall still be required for maintenance.
   3. The Ground Mounted PSES shall not be placed within any legal easement or right-of-way location, conservation area, woodlands area over one (1) acre, storm water conveyance system, or in any other manner to impede storm water runoff collecting in a constructed storm water conveyance system.
   4. All on-site utility, transmission lines, and plumbing shall be placed underground to the extent feasible. If the applicant contends that underground is not possible, the applicant must demonstrate to the satisfaction of the Board of Supervisors that the lack of feasibility is due to geological or topographic limitations.
   5. The PSES shall comply with East Franklin Township subdivision and land development requirements. The installation of a PSES shall be in compliance with all applicable permit requirements, codes, and regulations.
   6. A PSES owner must obtain any solar easements necessary to guarantee unobstructed solar access by separate civil agreement with adjacent property owners. East Franklin Township shall not be obligated in any manner to assist, enforce, or require such easements or agreements.
   7. The total horizontal projection coverage area of all ground-mounted and free-standing solar collectors, including solar photovoltaic cells, panels, arrays, inverters, shall be considered pervious coverage.
   8. Ground mounted PSES(s) shall maintain pervious conditions (with a ground slope of less than 10%) underneath the solar photovoltaic cells, panels, and arrays.
   9. PSES(s) impervious surface calculations are limited to the system's footings (the part of the system that makes contact with the ground, i.e.: driven piles or monopoles with or without small concrete collars), any structure built to house mechanical equipment like batteries or storage cells, and gravel or paved access roads servicing the PSES(s).

10. Pervious or Impervious areas shall not be changed or modified from the approved land development (zoning) plan unless and until approval is obtained from East Franklin Township and the approval plan is amended to reflect such change.
11. Compliance with the East Franklin Township STORM WATER MANAGEMENT Ordinance No. 01-2000 (Amended No. 01-2014) is required.
12. Vegetation ground cover of 100% is recommended to be of low maintenance and a minimum of 4" in height, but would be required to meet Storm Water Management minimums and is the sole responsibility of the PSES owner.
13. Land use surrounding solar arrays may have dual uses, in addition to solar producing electrical energy, the land can be used for pollinator ground cover, apiaries, grazing livestock, low crops, and the like.
14. The owner of the PSES shall provide East Franklin Township written confirmation that an application has been filed and approved by the public utility company and/or Independent System Operator (ISO) for a grid connected system, prior to permit approval.
15. The PSES may act as a single controllable entity (nanogrid) connected to the grid or may be part of a group of interconnected loads to form a microgrid. It can connect with the grid, but shall be able to disconnect from the grid to operate in an island-mode in the event of a weather system disaster, cyber-attack, or a catastrophe that would disable the electrical grid power source affording East Franklin Township to be resilient in these situations.

G. Permit Requirements for Principal Solar Energy System(s) (PSES)
   1. Zoning Application (East Franklin Township)
      a. As well as providing a bond/escrow for the decommissioning.
      b. 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 East Franklin Township Supervisors.
      c. The decommissioning funds shall be posted to East Franklin Township as a condition for preliminary approval.
      d. The decommissioning fund shall be **110%** of the project value and for the life of the project.
   2. Narrative including proposed work, location, before and after.
   3. Project Drawings - Stamped by a PA Licensed Engineer (PE) to include:
      a. Equipment specifications.
      b. Map Photo / Site Plan views of:
   4. Property lines including setbacks.
   5. Access roads with surfacing specifications.
   6. Grading Plan.
   7. Erosion and Sedimentation specifications (Floodplain Overlay).
      a. A PSES site location is considered pervious if the site has less than a ten percent (10%) slope. A PSES site location with greater than a ten percent (10%) slope is considered impervious and requires a stormwater management review and approval from the Armstrong County Conservation District.

b. All equipment (incl: structures) locations; i.e.: panels, Inverters, etc.
c. Underground utility locations.
d. Compliance with Storm Water Management.
e. Security fencing specifications and locations.
f. Security Placard for emergency information access with contacts.

8. Liability Insurance certificate(s).
9. Building Application (Third Party on behalf of East Franklin Township)

H. Security of Ground-mounted Principal Solar Energy Systems (PSES)
1. A ground-mounted PSES is required to be completely enclosed by a minimum of an eight (8) foot high fence with a self-locking gate.
2. A visible warning sign shall be placed at the base of all pad mounted transformers, substations and on the fence surrounding the PSES notifying individuals of potential voltage hazards.

I. Access to a PSES Site is required as follows:
1. A minimum of a twenty-five (25) foot self-locking entrance gate.
2. A minimum of a twenty-five (25) foot wide access road.
3. Required to connect to a state or township roadway.
4. A minimum of a fifteen (15) foot cartway shall be provided between the solar arrays to allow access for maintenance vehicles and emergency management vehicles including fire apparatus.

J. Ground mounted PSES(s) shall not be artificially lighted except to the extend required for safety, maintenance, or emergency situations.

K. The Owner/Operator shall provide free training on an on-going basis due to any technological updates or personnel changes for Emergency Services personnel as to the procedures and contacts to provide emergency services within and around the solar facility.

L. Signage/Advertising on a PSES site:
1. Owners or emergency signs may be place on the PSES Site.
2. Manufactures name and equipment information May be displayed.
3. 24-hour contact information must be posted on-site.
4. No advertising shall be permitted to be placed on a PSES site.

M. Contact Information for the PSES is the responsibility of the owner and/or operator and shall maintain a phone number and identity of a person responsible for the public to contact with all inquiries and complaints throughout the life of the project. The Contact information shall be:
1. Filed with East Franklin Township.
2. Posted at the entrance to the PSES facility.
3. Available upon demand from inquiries and concerns.

N. Maintenance of the PSES is the responsibility of the owner and/or operator and shall repair, maintain, or replace the PSES and related solar equipment as long as it exists in a manner consistent with industry standards as needed to keep the PSES in good repair and operating condition.

O. Decommissioning of the PSES(s)
   1. The sole responsibility of the owner and/or operator.
   2. Required to notify East Franklin Township immediately upon cessation or abandonment of the operation.
   3. The PSES will be presumed to be discontinued if no commercial electricity is generated for a period of six (6) months.
   4. Owner/operator shall be allotted twelve (12) months to complete the dismantle and removal of the PSES.
   5. The entire Principal Solar Energy System shall be removed including buildings, structures, fencing, cabling, electrical components, roads, foundations, and other associated items pertaining to the PSES project.
   6. Any earth disturbance as a result of the removal of the PSES shall be graded and reseeded to the satisfaction of East Franklin Township.
   7. Obtaining permits and approvals (including the Conservation District) needed for the earth disturbance is the sole responsibility of the PSES owner/operator.
   8. Upon successful decommissioning, including inspections and confirmed recycling, East Franklin Township will release the Performance Bond.
   9. Upon failure to comply with the decommissioning ordinance process, the owner/operator will forfeit the Performance Bond.

§ 746-5: Wind Energy System(s)

A. Wind Energy System(s) General Standards

1. Accessary Wind Energy System(s) are designed for wind turbine generated electricity for on-site, residential use.

2. Principal Wind Energy System(s) are designed for utility-scale wind turbine generated electricity for off-site, commercial use.

3. Accessary and Principal Wind Energy Systems (PSES), as defined by this article, are a permitted use in all nine (9) zoning districts as listed in Article IV § 400 and must comply with all ordinances and regulations of this article.

4. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all Wind Energy Systems.

5. The sound pressure level emitted by a wind energy system shall not exceed 55db(A), measured at any property line. This sound pressure level may be exceeded during shorter events such as a severe wind storm.

6. Electromagnetic interference caused by a wind energy system is not permitted. No wind energy system shall be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antenna for radio, television, or wireless telecommunication systems would result in electromagnetic interference with transmission or reception of a signal.

7. The maximum wind energy system tower height shall be limited to eight-five (85) feet. The height shall be measured from the ground surface of the Wind Energy System tower to the highest point of the extended blade tip. The permitted height limits are also subject to applicable Federal Aviation Administration (FAA) regulations regarding objects affecting navigable airspace. The applicant shall provide acknowledgement from the Federal Aviation Administration (FAA).

8. Wind Energy Systems shall use tubular towers finished as a single, non-reflective matte finished color.

9. No part of the wind energy system structure, including any guy wire anchors may extend closer than fifteen (15) feet to the lot (property) line.

10. Access doors to wind energy system(s) and electrical equipment shall be locked to prevent entry by non-authorized persons.

11. Wind Energy Systems shall be equipped with an appropriate anti-climbing device or other similar protective device to prevent unauthorized access to the wind energy system. Such anti-climbing device shall be installed to a minimum height of fifteen (15) feet from the ground.

12. Wind Energy Systems, including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. Wind Energy Systems, including towers shall comply with Federal Aviation Administration requirements. A construction permit shall be obtained for wind energy systems per PA Uniform Construction Code (UCC).

13. Power lines shall be placed underground. If it is determined that is not feasible, a written request shall be submitted with satisfactory proof that due to topographical or geographical reasons it is not feasible. This request shall be made to the Zoning Officer, who shall review with the Board of Supervisors for approval or denial.

14. All wind energy systems shall be designed with an automatic brake to prevent over-speeding and excessive pressure on the wind energy system tower structure.

15. Wind Energy Systems shall not be artificially lighted unless required by the Federal Aviation Administration. Any site lighting shall comply with township zoning ordinances.

16. Wind Energy Systems shall not be used to display advertising, including signage, banners, or other similar materials. Advertising displays are prohibited except for reasonable identification of the manufacturer of the system.

17. The design and installation of the Wind Energy System(s) shall conform to applicable industry standards such as:
    a. PA Uniform Construction Code (UCC), Title 52
    b. International Building Code (IBC)
    c. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030
    d. Underwriters Laboratories (UL) 1741
    e. National Electrical Code (NEC) Article 690 and 691.

B. **Accessary Wind Energy System(s)**

1. Metering and storage within an Accessary Wind Energy System:
    a. An AWES may use an individual net metering system. NOTE: Excess electrical power generated and/or stored, and not presently needed for on-site use may be sold directly to the utility company or other microgrid consumers.
    b. An AWES may have a storage infrastructure to function as a nanogrid.

2. Installation of all on-site utility, transmission lines, and plumbing shall be placed underground to the extend feasible. If the applicant contends that underground is not possible, the applicant must demonstrate to the satisfaction of the Board of Supervisors that the lack of feasibility is due to geological or topographic limitations.

3. Maintenance of Accessory Wind Energy Systems (AWES)
    a. The AWES must be properly maintained by complying with UCC standards and inspected by a licensed inspector at the owner/operator's expense 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.
    b. Decommissioning requires wind turbines and generators to be removed from the premises within thirty (30) days and properly (certified) disposed of during the decommissioning process.
    c. Wind turbines and generators that are non-functioning shall be repaired or removed within thirty (30) days. Removed turbines and generators are to be properly (certified) disposed of if it is not repaired within the required time frame.

4. Roof mounted AWES(s).
   a. A roof mounted AWES may be mounted on a principle or accessory structure.
   b. A roof mounted AWES shall not extend beyond the edge of the roof.
   c. A roof mounted AWES shall not extend more than ten (10) feet from the peak of the roof to the highest peak of the top blade.

5. Ground mounted AWES(s).
   a. A ground mounted AWES shall comply with the minimum area regulations as required in the underlying zoning district for a principal structure as set forth in Article IV of the East Franklin Township Zoning Ordinances
   b. A ground mounted AWES shall not be located nearer to the property line, street or right-of-way than the one and a half (1½) times the height of the ground surface of the tower to the highest point of the extended blade tip. Any variation to this ordinance would require an application and fee for a Variance Hearing through the Zoning Department at East Franklin Township
      i. This variance would include engineered drawings showing the location, configuration, and specifications of the proposed AWES.
      ii. This variance would include proof that the AWES would not distract drivers, nor detract from the surrounding properties.
   c. A ground mounted system shall not be located in a conservation district.
   d. The area beneath a ground mounted AWES shall remain pervious. Any modification of this section may be cause for denial of the Zoning Permit.
   e. Multiple ground mounted AWES(s) non-connecting towers on the same property must maintain a distance of one and a half (1½) times the height of the tower from ground surface to the highest point of the extended blade tip. between the systems.
   f. A ground mounted AWES that would consume an area in excess of ten thousand (10,000) square feet would not be considered a residential Accessary Wind Energy System and would need to apply for a Principal Wind Energy System Permit.
   g. There shall be a minimum distance of fifteen (15) feet from ground surface to the lowest point of the extended blade tip of an AWES(s).
   h. Any Associated AWES mechanical equipment structures shall:
      i. Use Primary structure setbacks
      ii. Be screened from any adjacent properties in zones R1, R2, & R3
   1. Screen shall be a well-maintained fence or row(s) of evergreens that conceals the equipment from view
   2. Screening shall not be within a line-of-sight of driveways
   3. Screening shall not be in any right-of-way or easement

C. **<u>Principal Wind Energy System(s)</u>**

1. Principal Wind Energy Systems are designed for utility-scale turbine generated off-site, commercial use.

2. Principal Wind Energy Systems (PWES's, are considered commercial or also known as 'Wind Farms'), as defined by this article, are a permitted use in five (5) zoning districts, C1 Local Service Commercial; C2 Highway Commercial; M1 Light Industrial; M2 Heavy Industrial; A Agricultural; as listed in Article IV § 400 and shall comply with all applicable regulations of this article. PWES's are not permitted in four (4) zoning districts, R1 Rural Residential; R2 Medium Density Residential; R3 High Density Residential; V Village as listed in Article IV § 400.

3. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all PWES(s).

4. The design and installation of the PWES shall conform to applicable industry standards such as:
   a. PA Uniform Construction Code (UCC), Title 52
   b. International Building Code (IBC)
   c. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030
   d. Underwriters Laboratories (UL) 1741
   e. National Electrical Code (NEC) Article 690 and 691 applies to PV electrical energy systems.

5. A "Zoning Permit" application, for a Principal Wind Energy System with supporting documents, stamped by a PA Licensed Engineer, shall include:
   a. A site layout of all structures including property boundaries.
   b. Location, dimensions, and types of existing structures on the property and proximity to structures on adjacent properties within five hundred (500) feet.
   c. Location of the proposed wind energy system, foundations, guy anchors and associated equipment.
   d. Setback requirements as outlined by this ordinance.
   e. Locations of any right-of-way(s), easements, floodplains, or other restricting covenants.
   f. Location of any overhead utility lines, radio transmission lines, or cable lines within five hundred (500) feet of the property boundaries.
   g. Location of any telecommunications towers within one thousand (1000) feet.
   h. Wind energy system(s) specifications, including manufacturer, model, rotor diameter, tower height, and tower type.

6. A report from a licensed engineer in the State of Pennsylvania, documenting the following shall be submitted for review:
   a. Description of the wind energy system including overview, project location, the rated capacity, type and height of the facility including generating capacity, and a description of the ancillary facilities.
   b. Evidence of structural integrity of tower structure.
   c. Identification of make, model, picture, and manufacturer's specifications.
   d. Identification of the nearest telecommunications tower and residential homes.

7. Installation Contractors must validate that they meet or exceed one of the following requirements (certifications):
   a. North American Board of Certified Energy Practitioners (NABCEP)
   b. Interstate Renewable Energy Council (IREC)
   c. Institute for Sustainable Power Quality (ISPQ)

8. Ground Mounted PWES Standards
   a. A ground mounted PWES shall comply with the minimum area regulations as required in the underlying zoning district for a principal structure as set forth in Article IV of the East Franklin Township Zoning Ordinances
   b. The maximum Wind Energy System height is eighty-five (85) feet. The height shall be measured from the ground surface of the Wind Energy System tower to the highest point of the extended blade tip. The permitted height limits are also subject to applicable Federal Aviation Administration (FAA) regulations regarding objects affecting navigable airspace. The applicant shall provide acknowledgement from the Federal Aviation Administration (FAA).
   c. A ground mounted PWES shall not be located nearer to the property line, street or right-of-way than the one and a half (1½) times the height from the ground surface of the tower to the highest point of the extended blade tip. Any variation to this ordinance would require an application and fee for a Variance Hearing through the Zoning Department at East Franklin Township
   d. A ground mounted system shall not be located in a conservation district.
   e. The area beneath a ground mounted PWES shall remain pervious. Any modification of this section may be cause for denial of the Zoning Permit.
   f. Multiple ground mounted PWES(s) non-connecting towers on the same property must maintain a distance of one and a half (1½) times the height of the tower from ground surface to the highest point of the extended blade tip. between the systems.
   g. There shall be a minimum distance of fifteen (15) feet from ground surface to the lowest point of the extended blade tip of an PWES(s).
   h. Any Associated PWES mechanical equipment shall use Primary structure setbacks if not within the footprint of the tower and be screened from any adjacent properties in zones R1, R2, & R3. The screen shall be a well-maintained fence or row(s) of evergreens that conceals the equipment from view. Screening shall not be within a line-of-sight of driveways and shall not be in any right-of-way or easement.
   i. The PWES shall meet the minimum area regulations of the underlying zoning district for principal (structure) standards.
   j. A ground mounted PWES(s) non-connecting towers on the same property must maintain a distance of one and a half (1½) times the height of the tower from ground surface to the highest point of the extended blade tip between the systems, property line or structures on the same property.

k. The Ground Mounted PWES shall not be placed within any legal easement or right-of-way location, conservation area, woodlands area over one (1) acre, storm water conveyance system, or in any other manner to impede storm water runoff collecting in a constructed storm water conveyance system.
l. All on-site utility, transmission lines, and plumbing shall be placed underground to the extent feasible. If the applicant contends that underground is not possible, the applicant must demonstrate to the satisfaction of the Board of Supervisors that the lack of feasibility is due to geological or topographic limitations.
m. The PWES shall comply with East Franklin Township subdivision and land development requirements. The installation of a PWES shall be in compliance with all applicable permit requirements, codes, and regulations.
n. The total horizontal projection coverage area of all ground-mounted and free-standing PWES(s), shall be considered pervious ground coverage.
o. Ground mounted PSES(s) shall maintain pervious conditions underneath the wind turbine and generator towers.
p. PWES(s) impervious surface calculations are limited to the system's footings (the part of the system that makes contact with the ground, i.e.: driven piles or monopoles with or without small concrete collars), any structure built to house mechanical equipment like batteries or storage cells, and gravel or paved access roads servicing the PWES(s).
q. Pervious or Impervious areas shall not be changed or modified from the approved land development (zoning) plan unless and until approval is obtained from East Franklin Township and the approval plan is amended to reflect such change.
r. Vegetation ground cover is recommended to be of low maintenance and low growing and is the sole responsibility of the PWES owner.
s. Land use surrounding wind energy systems may have dual uses, in addition to wind producing electrical energy, the land may be used for pollinator ground cover, apiaries, grazing livestock, low crops, and the like.
t. The owner of the PWES shall provide East Franklin Township written confirmation that an application has been filed and approved by the public utility company and/or Independent System Operator (ISO) for a grid connected system(s).
u. The PWES may act as a single controllable entity (nanogrid) connected to the grid or may be part of a group of interconnected loads to form a microgrid. It can connect with the grid, but shall be able to disconnect from the grid to operate in an island-mode in the event of a weather system disaster, cyber-attack, or a catastrophe that would disable the electrical grid power source affording East Franklin Township to be resilient in these situations.

9. Permit Requirements for Principal Wind Energy System(s) (PWES)
   a. Zoning Application (East Franklin Township)
   b. Narrative including proposed work, location, before and after.

c. Project Drawings - Stamped by a PA Licensed Engineer (PE) to include:
   i. Equipment specifications
   ii. Map Photo / Site Plan views of:
      1. Property lines including setbacks.
      2. Access roads specifications (required of owner/operator)
      3. Grading Plan
      4. Erosion and Sedimentation specifications (Floodplain Overlay)
      5. All equipment & structures, locations; i.e.: panels, Inverters, etc.
      6. Underground utility locations.
d. Liability Insurance Certificate.
e. Building Application (issued by a Third Party on behalf of East Franklin Township)
f. Security of Ground-mounted Principal Wind Energy System(s) (PWES)
   i. A ground-mounted PWES is required to have the tower enclosed with a reasonable working area within the security fence with a minimum of an eight (8) foot high fence with a self-locking gate.
   ii. A visible warning sign shall be placed at the base of all pad mounted transformers, substations and on the fence surrounding the PWES notifying individuals of potential voltage hazards.
g. Access to a PWES Site is required as follows:
   i. A minimum of a twenty-five (25) foot self-locking entrance gate.
   ii. A minimum of a twenty-five (25) foot wide access road.
   iii. Required to connect to a state or township roadway.

h. Ground mounted PWES(s) shall not be artificially lighted except to the extend required for safety or emergency situations.
i. Signage/Advertising on a PWES site:
   i. Owners or emergency signs may be place on the PWES Site.
   ii. Manufactures name and equipment information May be displayed.
   iii. No advertising shall be permitted to be placed on a PWES site.
j. Contact Information for the PWES is the responsibility of the owner and/or operator and shall maintain a phone number and identity of a person responsible for the public to contact with all inquiries and complaints throughout the life of the project. The Contact information shall be:
   i. Filed with East Franklin Township.
   ii. Posted at the entrance to the PWES facility.
   iii. Available upon demand from inquiries and concerns.
k. Maintenance of the PWES is the responsibility of the owner and/or operator and shall repair, maintain, or replace the PWES and related solar equipment as long as it exists in a manner consistent with industry standards as needed to keep the PWES in good repair and operating condition.

10. Decommissioning of the PWES(s)
    a. The sole responsibility of the owner and/or operator.
    b. Required to notify East Franklin Township immediately upon cessation or abandonment of the operation.

c. The PWES will be presumed to be discontinued if no commercial electricity is generated for a period of six (6) months.
d. Owner/operator shall be allotted twelve (12) months to complete the dismantle and removal of the PWES.
e. The entire Principal Wind Energy System shall be removed including buildings, structures, fencing, cabling, electrical components, roads, foundations, and other associated items pertaining to the PWES project.
f. Any earth disturbance as a result of the removal of the PWES shall be graded and reseeded to the satisfaction of East Franklin Township.
g. Obtaining permits and approvals needed for the earth disturbance is the sole responsibility of the PWES owner/operator.
h. Upon successful decommissioning, including inspections and confirmed recycling, East Franklin Township will release the Performance Bond.
i. Upon failure to comply with the decommissioning ordinance process, the owner/operator will forfeit the Performance Bond.

§ 746-6: Hydro-Electric Energy System(s)

A. Hydro-Electric Energy System(s) General Standards

1. Hydro Energy System(s) are designed for hydro-electric turbine generated electricity for on-site (residential) or off-site (commercial) use.

2. Ownership of public waters is as follows:
   a. The title to the beds of public waters is held in trust by the Commonwealth of Pennsylvania for the benefit of the public.
   b. In case of rivers and streams, the Commonwealth's ownership extends to ordinary low water mark, and the adjacent riparian landowner owns above the low water mark.

3. In Pennsylvania a dam permit is required if the proposed dam will be built across a stream and it meets one of the following criteria:
   a. The contributory drainage area exceeds 100 acres.
      b. The drainage area is the land area that, during a storm event, contributes water runoff to the impounding area.

4. Private dam(s), a works license is required to construct, operate, alter or decommission a dam that is constructed on a waterway in Pennsylvania.

5. East Franklin Township shall only issue a Zoning Permit after all State and Federal requirements are met and licenses and/or agreements are issued by the following agencies or corporations.

a. U.S. Department of Energy, The.Secretary@hq.doe.gov
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585
Main Switchboard: 202-586-5000

b. Federal Energy Regulatory Commission, www.FERC.gov New York Region
Federal Energy Regulatory Commission
NEW YORK Regional Office
19 West 34th St, Ste 400
New York, NY 10001-3006
Help Desk Telephone# 866-208-3676

c. U.S. Army Corp of Engineers, www.lrp.usace.army.mil Pittsburgh District
Pittsburgh Regulatory District
1000 Liberty Ave Rm 2200 William S. Moorhead Federal Building
Pittsburgh, PA 15222-4186
Telephone# 412-395-7500
412-395-7655 (Locks & Dams), 412-395-7155 (Permits)

d. U.S. Fish & Wildlife Services, www.fws.gov Northeast Region
Northeast Regional Headquarters
300 Westgate Center Drive
Hadley, MA 01035
Telephone# 412-253-8200

e. U. S. Forest Services, www.fsusda.gov, R9 Eastern Regional Office
U.S Forest Services
626 East Wisconsin Ave.
Milwaukee, WI 53202
Telephone# 414-297-3600
Note: U.S. Forest Services may or may not be involved depending on the proposed site location.

f. PA Game Commission, www.pgc.pa.gov Southwest Region
Southwest Regional Office
4820 Route 711
Bolivar, PA 15923
Telephone# 833-742-4868

g. PA Emergency Management Association, www.pema.pa.gov
PEMA Western Area Office
276 Stormer Road
Indiana, PA 15701
Telephone# 724-357-2990

h. PA Public Utility Commission, www.puc.pc.gob

Public Utility Commission
400 North Street
Keystone Bldg.
Harrisburg, PA 17120
Telephone# 800-692-7380

i. PA Department of Environmental Protection, www.dep.pa.gov
DEP Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335
Telephone# 814-332-6945

j. First Energy Utilities of Pennsylvania, www.firstenergycorp.com
West Penn Power
Regional engineering – Interconnection
800 Cabin Hill Drive
Greensburg, PA 15601
Fax : 234-678-2502
Email : WP_interconnection@firstenergycorp.com
Note: Only for locations that are serviced by West Penn Power, an agreement with West Penn to connect to the grid is required.

k. Central Electric Cooperative, www.central.coop
Central Electric
P.O. Box 329
Parker, PA 16049
Telephone# 800-521-0570
Note: Only for locations that are serviced by Central Electric, an agreement with Central Electric to connect to the grid is required.

§ 746-7: Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System(s)

A. **Natural Gas/Propane/Gasoline/Diesel Generated-Electric Energy System(s) General Standards:**

1. Temporary (portable or stationary) Accessary Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System(s) that are either transportable or fixed position and designed for temporary emergency generated electricity for on-site, commercial, industrial or residential use do not require permits.

2. Principal Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System(s) are designed for utility-scale turbine generated electricity for off-site, commercial use and require permits, both "Zoning" and "Building".

3. Portable and Stationary Accessary Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy Systems, as defined by this article, are a permitted use in all nine (9) zoning districts as listed in Article IV § 400.

4. Principal Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy Systems, as defined by this article, are only a permitted use in four (4) zoning districts, C2 Highway Commercial, M1 Light Industrial, M2 Heavy Industrial, A Agricultural, as listed in Article IV § 400 and must comply with all ordinances and regulations of this article.

5. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all Principal Natural Gas or Propane Generated Electric Energy Systems.

6. The sound pressure level emitted by a Natural Gas/Propane/Gasoline/Diesel generated energy system shall not exceed 55db(A), measured at any property line in R1 Rural Residential, R2 Medium Density Residential, R3 High Density Residential, V Village Zones and shall not exceed 65db measured at any property line in C1 Local Service Commercial, C2 Highway Commercial, M1 Light Industrial, M2 Heavy Industrial, A Agricultural Zones.

7. No part of the Principal Natural Gas or Propane Generated Electric Energy System structure may not extend closer than three hundred (300) feet from any property line.

8. Access doors to energy system(s) structures shall be locked to prevent entry by non-authorized persons.

9. Power lines shall be placed underground. If it is determined that is not feasible, a written request shall be submitted with satisfactory proof that due to topographical or geographical reasons it is not feasible. This request shall be made to the Zoning Officer, who shall review with the Board of Supervisors for approval or denial.

10. Principal Natural Gas or Propane Generated Electric Energy Systems shall not be artificially lighted and the site lighting shall comply with township zoning ordinances.

11. Natural Gas/Propane/Gasoline/Diesel Energy Systems shall not be used to display advertising, including signage, banners, or other similar materials. Advertising displays are prohibited except for reasonable identification of the manufacturer of the system.

12. The design and installation of the Principal Natural Gas or Propane Generated Electric Energy System(s) shall conform to applicable industry standards such as:
    a. PA Uniform Construction Code (UCC), Title 52
    b. International Building Code (IBC)
    c. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030
    d. Underwriters Laboratories (UL) 1741
    e. National Electrical Code (NEC) Article 690 and 691.

B. **Accessary Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System(s)**

1. Portable or Stationary (i.e.: Generac Guardian 22kw Home Standby Generator **or** Kohler 20RCAL-200SELS 20kW Standby Generator), Accessary Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System(s) are considered temporary emergency units and shall have a grid disconnect (for stationary) when in operation and shall not be connected to the grid and do not require permits.

2. There shall be no Net-Metering and storage within an Accessary Natural Gas/Propane/Gasoline/Diesel Generated Electric Energy System.

C. **Principal Natural Gas or Propane Generated Electric Energy System(s)**

1. Principal Natural Gas or Propane Generated Electric Energy Systems are designed for utility-scale turbine generated off-site, commercial or industrial use.

2. Principal Natural Gas or Propane Generated Electric Energy Systems as defined by this article, are a permitted use in four (4) zoning districts, C2 Highway Commercial; M1 Light Industrial; M2 Heavy Industrial; A Agricultural; as listed in Article IV § 400 and shall comply with all applicable regulations of this article and are not permitted in five (5) zoning districts, C1 Local Service Commercial; R1 Rural Residential; R2 Medium Density Residential; R3 High Density Residential; V Village as listed in Article IV § 400.

3. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all Principal Natural Gas or Propane Generated Electric Energy System(s).

4. The design and installation of the Principal Natural Gas or Propane Generated Electric Energy System shall conform to applicable industry standards such as:
    a. PA Uniform Construction Code (UCC), Title 52
    b. International Building Code (IBC)
    c. Institute of Electrical and Electronics Engineers (IEEE) 1547 and (IEEE) 2030

d. Underwriters Laboratories (UL) 1741
e. National Electrical Code (NEC) Article 690 and 691 applies to PV electrical energy systems.

5. A "Zoning Permit" application, for a Principal Natural Gas or Propane Generated Electric Energy System with supporting documents, stamped by a PA Licensed Engineer, shall include:
   a. Narrative including proposed work, location before and after.
   b. A site plan layout including:
      i. Location, dimensions and types of structures.
      ii. System(s) specifications, i.e.: manufacturer, model, panels, inverters and electrical outputs, etc.
      iii. Property lines with three hundred (300) foot setbacks as outlined by this ordinance.
      iv. Any right-of-way(s), easements, floodplains, or other restricting covenants.
      v. Any utility power, communication, or cable lines within three hundred (300) feet of the property boundaries.
      vi. Access roads with surfacing specifications.
      vii. Grading Plan including erosion and sedimentation specifications.
      viii. Identification of any surrounding residential homes.
   c. Identification of installation Contractor(s) with valid license(s) or certification(s).
   d. Liability Insurance Certificate.
   e. Security System Plan to include:
      i. Security fence (a minimum of eight (8) foot high) enclosing all structures with a self-locking gate.
      ii. A visible warning sign shall be placed at the base of all pad mounted transformers, substations and on the fence surrounding the energy systems notifying individuals of potential voltage hazards.
      iii. A minimum of a twenty-five (25) foot wide self-locking entrance gate.
      iv. A minimum of a twenty-five (25) foot wide access road required to connect to a state or township roadway.
      v. A minimum of a twelve (12) foot wide cartway shall be provided between any energy system structure to allow access for maintenance vehicles and emergency management vehicles including fire apparatus.

6. A Principal Natural Gas or Propane Energy System Standards is as follows:
   a. The system shall require a three hundred (300) foot minimum setback from any property line or right-of-way.
   b. A Principal Natural Gas or Propane Generated Electric Energy System shall not exceed a noise level of 65db in any commercial or industrial zone and 55db measured in any residential zone at any property line, street or right-of-way.

c. A Principal Natural Gas or Propane Generated Electric Energy System shall not be located in a conservation district.
d. The area (parcel) for the location of Principal Natural Gas or Propane Generated Electric Energy System shall remain pervious. Any alteration that disturbs the land in excess of ten thousand (10,000) square feet to become impervious is required to provide a Storm Water Management System on said parcel of land. Impervious surface calculations are limited to the system's structures and footings (the part of the system that makes contact with the ground, i.e.: concrete footings, pads. Etc.), any structure built to house equipment, and gravel or paved access roads servicing the energy system(s). The energy system shall not be placed within any legal easement, right-of-way, conservation area, storm water conveyance system, or in any other manner to impede storm water runoff.
e. Pervious or Impervious areas shall not be changed or modified from the approved land development (zoning) plan unless and until approval is obtained from East Franklin Township and the approval plan is amended to reflect such change.
f. Any Principal Natural Gas or Propane Generated Electric Energy Systems mechanical equipment or structures shall be screened from any adjacent properties in zones R1, R2, R3, or V. The screen shall be a well-maintained fence or row(s) of evergreens that conceals the equipment from view. Screening shall not be within a line-of-sight of driveways and shall not be in any right-of-way or easement.
g. All on-site utility, transmission lines, and plumbing shall be placed underground to the extent feasible. If the applicant asserts that underground is not possible, the applicant must demonstrate to the satisfaction of the Board of Supervisors that the lack of feasibility is due to geological or topographic limitations.
h. The Principle Natural Gas or Propane Generated Electric Energy System may act as a single controllable entity (nanogrid) connected to the grid or may be part of a group of interconnected loads to form a microgrid. It can connect with the grid, but shall be able to disconnect from the grid to operate in an island-mode in the event of a weather system disaster, cyber-attack, or a catastrophe that would disable the electrical grid power source affording East Franklin Township to be resilient in these situations.

i. The owner/operator of the Natural Gas or Propane Generated Electric Energy System shall provide East Franklin Township written confirmation that an application has been filed and approved by one of the following two public utility companies for a grid connected system(s):

    i. First Energy Utilities of Pennsylvania, www.firstenergycorp.com
    West Penn Power
    Regional engineering – Interconnection
    800 Cabin Hill Drive
    Greensburg, PA 15601

Fax: 234-678-2502
Email: WP_interconnection@firstenergycorp.com
Note: Only for locations that are serviced by West Penn Power, an agreement with West Penn to connect to the grid is required.

ii. Central Electric Cooperative, www.central.coop
Central Electric
P.O. Box 329
Parker, PA 16049
Telephone# 800-521-0570
Note: Only for locations that are serviced by Central Electric, an agreement with Central Electric to connect to the grid is required.

7. Energy system(s) shall not be artificially lighted except to the extend required for safety or emergency situations.

8. Signage/Advertising on a Natural Gas or Propane generated energy system site:
   a. Owners names or emergency signs may be place on the energy system Site.
   b. Manufactures name and equipment information May be displayed.
   c. No advertising shall be permitted to be placed on an energy system site.

9. Contact Information for the electric energy system is the responsibility of the owner and/or operator and shall maintain a phone number and identity of a person responsible for the public to contact with all inquiries and complaints throughout the life of the project. The Contact information shall be:
   a. Filed with East Franklin Township.
   b. Posted at the entrance to the energy system facility.
   c. Available upon demand from inquiries and concerns.

10. Maintenance of the Natural Gas or Propane generated electric energy system is the responsibility of the owner and/or operator and shall repair, maintain, or replace the energy system and related equipment as long as it exists in a manner consistent with industry standards as needed to keep the energy system in good repair and operating condition.

11. Decommissioning of the Natural Gas or Propane generated electric energy system(s):
   a. The sole responsibility of the owner and/or operator.
   b. Required to notify East Franklin Township immediately upon cessation or abandonment of the operation.
   c. The energy system will be presumed to be discontinued if no electricity is generated for a period of six (6) months.
   d. Owner/operator shall be allotted six (6) months to complete the dismantle and removal of the Natural Gas or Propane generated energy system.
   e. The entire Principal Energy System shall be removed including buildings, structures, fencing, cabling, electrical components, plumbing, roads, foundations, and other associated items pertaining to the project.

f. Any earth disturbance as a result of the removal of the energy system shall be graded and reseeded to the satisfaction of East Franklin Township.
g. Obtaining permits and approvals needed for the earth disturbance is the sole responsibility of the Natural Gas or Propane generated electric energy system owner/operator.
h. Successful decommissioning would include inspection of the uncontaminated parcel of land and confirmed recycling of all materials.

§ 746-8: Nuclear Reactor Generated Electric Energy System(s)

A. Nuclear Reactor Generated Electric Energy System(s) General Standards:

1. Two types of Nuclear Reactors: Fission vs Fusion; Fission splits a heavy element (with a high atomic mass number) into fragments; while fusion joins two light elements (with a low atomic mass number), forming a heavier element. In both cases, energy is freed because the mass of the remaining nucleus is smaller than the mass of the reacting nuclei. International Atomic Energy Agency (IAEA), https://www.iaea.org/topics/energy/

2. Fission Type Nuclear Reactors are **NOT** permitted within the Township of East Franklin.

3. Fusion Type Nuclear Reactor Generated Electric Energy Systems as defined by this article, are a permitted use in four (4) zoning districts, C2 Highway Commercial; M1 Light Industrial; M2 Heavy Industrial; A Agricultural; as listed in Article IV § 400 and shall comply with all applicable regulations of this article and are not permitted in five (5) zoning districts, C1 Local Service Commercial; R1 Rural Residential; R2 Medium Density Residential; R3 High Density Residential; V Village as listed in Article IV § 400

4. East Franklin Township shall only issue a Zoning Permit after all Federal and State requirements are met and licenses and/or agreements are issued by the following agencies or corporations.

    a. U.S. Nuclear Regulatory Commission, Region I, https://www.nrc.gov/
    U.S. Nuclear Regulatory commission
    475 Allendale Rd., Suite 102
    King of Prussia, PA 19406-1415
    Phone: 800-432-1156

    b. U.S Environmental Protection Agency, www.epa.gov
    Environmental Protection Agency
    Four Penn Center
    1600 JFK Blvd.

Philadelphia, PA 19103-2029
Phone: (215) 814-5000 or Toll free: (800) 438-2474

c. Pennsylvania Department of Environmental Protection, dwshearer@pa.gov
Bureau of Radiation Protection
Rachel Carson State Office Building
P.O. Box 8469
Harrisburg, PA 17105-8469
Phone: 717-787-2480

d. First Energy Utilities of Pennsylvania, www.firstenergycorp.com
West Penn Power
Regional engineering – Interconnection
800 Cabin Hill Drive
Greensburg, PA 15601
Fax: 234-678-2502
Email: WP_interconnection@firstenergycorp.com
Note: Only for locations that are serviced by West Penn Power, an agreement with West Penn to connect to the grid is required.

e. Central Electric Cooperative, www.central.coop
Central Electric
P.O. Box 329
Parker, PA 16049
Telephone: 800-521-0570
Note: Only for locations that are serviced by Central Electric, an agreement with Central Electric to connect to the grid is required.

5. Permits, both "Zoning" (issued by East Franklin Township) and "Building" (issued by a third party, on behalf of East Franklin Township) shall be required for all Nuclear Reactor Generated Electric Energy System(s).

6. Performance Bond and/or Decommissioning shall be regulated by the U.S. Nuclear Regulatory Commission as listed in A.1.a. of this section.

§ 746-9: Hydrogen Generated Electric Energy System(s)

A. Hydrogen Generated Electric Energy System(s) General Standards

1. Green Hydrogen - a versatile and flexible energy carrier that can be produced with low or zero carbon emissions. Green Hydrogen is defined as hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity (such as solar, wind, hydro, etc.)

2. Blue Hydrogen – is produced mainly from natural gas, using a process called steam reforming, which brings together natural gas and heated water in the form of steam. The output is hydrogen, but carbon dioxide is also produced

as a by-product and captured and stored. Subsequently, in a water-gas reaction, the carbon monoxide reacts with water to form carbon dioxide and more hydrogen. Partial oxidation is an exothermic process – it gives off heat. The process is, typically, much faster than steam reforming and requires a smaller reactor vessel.

3. Grey Hydrogen – is created from natural gas, or methane, using steam methane reformation but without capturing the greenhouse gases made in the process. Grey hydrogen is essentially the same as blue hydrogen, but without the use of carbon capture and storage.

B. **East Franklin Township shall only issue a Zoning Permit after all Federal and State requirements are met and licenses and/or agreements are issued by the following agencies or corporations**.

a. Federal Energy Regulatory Commission, www.FERC.gov
888 First Street, NE
Washington, DC 20426
Telephone: 202-502-8004
Toll Free: 866-208-3372
Email: customer@ferc.gov

b. U.S. Department of Transportation
Pipeline and Hazardous Safety Administration https://www.phmsa.dot.gov
1200 New Jersey Avenue, SE
Washington, DC 20590
Telephone: 202-366-4433
Hazardous Materials Telephone: 800-467-4922
Fax: 202-366-3666
Email: phmsa.publicaffairs@dot.gov

c. Environmental Protection Agency, https://www.epa.gov>pa, Region 3
Environmental Protection Agency
Four Penn Center
1600 JFK Blvd.
Philadelphia, PA 19103-2029
Phone: (215) 814-5000
Fax: (215) 814-5103
Toll free: (800) 438-2474

d. U.S. Department of Labor-OSHA, https://www.osha.gov
The Occupational Health and Safety Administration (OSHA)
William Moorhead Federal Building, Room 905
1000 Liberty Avenue
Pittsburgh, PA 15222
Telephone: 412-395-4903

e. First Energy Utilities of Pennsylvania, www.firstenergycorp.com

West Penn Power
Regional engineering – Interconnection
800 Cabin Hill Drive
Greensburg, PA 15601
Fax: 234-678-2502
Email: WP_interconnection@firstenergycorp.com
Note: Only for locations that are serviced by West Penn Power, an agreement with West Penn to connect to the grid is required.

f. Central Electric Cooperative, www.central.coop
Central Electric
P.O. Box 329
Parker, PA 16049
Telephone: 800-521-0570
Note: Only for locations that are serviced by Central Electric, an agreement with Central Electric to connect to the grid is required.

§ 746-10: Geothermal Generated Electric Energy System(s)

A. Regulatory Framework:

1. **On Private Lands:** Geothermal Energy Systems on private lands do NOT require any permitting from East Franklin Township; **NOTE:** With the passage of the Geothermal Steam Act of 1970 (30 U.S.C. 1001), geothermal energy was regarded legally as a groundwater resource. The law defined geothermal resources as steam, hot water, and hot brines, indigenous to the geology or generated from introduced fluids, associated heat energy, and any byproducts. https://www.doi.gov/ocl/geothermal-energy-development

2. **On Public Lands:** The Bureau of Land Management is required to manage the impacts of geothermal operations on public lands under the Federal Land Policy and Management Act and the National Environmental Policy Act (NEPA).

Eastern States State Office
Bureau of Land Management
5275 Leesburg Pike
Falls Church, VA 22041
Telephone: 703-558-7754
Fax: 703-558-2258
Email: www.https/blm.gov

B. There are generally three (3) common types of Geothermal Technologies

1. **Dry Steam -** Dry steam plants use hydrothermal fluids that are already mostly steam, which is a relatively rare natural occurrence. The steam is drawn directly to a turbine, which drives a generator that produces electricity. After the steam condenses, it is frequently reinjected into the reservoir.
https://www.energy.gov/eere/geothermal/electricity-generation

2. **Flash Steam** - Flash steam plants take high-pressure hot water from deep inside the earth and convert it to steam that drives generator turbines. When the steam cools, it condenses to water and is injected back into the ground to be used again. Most geothermal power plants are flash steam plants. https://www.eia.gov/energyexplained/geothermal/geothermal-power-plants

3. **Binary Cycle** – A binary cycle power plant is used where geothermal resources are not sufficiently hot to produce steam, or where the source contains minerals or chemical minerals or chemical impurities to allowing flashing. In the binary cycle process, the geothermal liquid is passed through a heat exchanger. https://www.sciencedirect.com/topics/engineering/binary-cycle

C. **Geothermal Generated Electric Energy System(s) General Standards**

1. **Private Lands** – The developer/land owner shall notify East Franklin Township of the type of Geothermal System being installed.

§ 746-11: Biomass Generated Electric Energy System(s) – Biomass is a renewable organic material that comes from plants and animals. Biomass contains stored chemical energy from the sun that is produced by plants through photosynthesis. (https://www.eia.gov > energyexplained > biomass); Biomass has many benefits, the primary one being that it cannot be depleted like fossil fuels. With an abundance of plants on Earth, biomass could be a primary source of renewable energy that's used as a sustainable alternative to fossil fuels. (Jan 15, 2021, https://cnr.ncsu.edu/news/2021/01/biomass-sustainable-energy-future/)

A. **Accessary (Residential) or Principle (Commercial) Biomass Electric Generated Energy Systems.**

1. Accessary and Principal Systems shall observe the same general standards.
2. Biomass Resources (https://www.energy.gov/eere/bioenergy/biomass-resources)

   a. Biomass Feedstocks: crop & forestry residues, algae, municipal & wet waste.
   b. Energy Crops: non-food crops that can be grown on marginal land.
   c. Agricultural Residue: corn stover, wheat, oat & barley straw, sorghum stubble.
   d. Forestry Residue: limbs, tops, culled, dead, & diseased trees.
   e. Wood Processing Residue: sawdust, bark, branches, leaves and needles.
   f. Municipal Waste: mixed commercial and residential waste.
   g. Wet Waste: food waste, manure slurries, organic wastes.

B. **Biomass Generated Electric Energy System(s) General Standards.**

East Franklin Township shall only issue a Zoning Permit after all State and Federal requirements are met and licenses and/or agreements are issued by the following agencies or corporations.

a. Environmental Protection Agency, https://www.epa.gov>pa, Region 3
   Environmental Protection Agency
   Four Penn Center
   1600 JFK Blvd.

Philadelphia, PA 19103-2029
Phone: (215) 814-5000
Fax: (215) 814-5103
Toll free: (800) 438-2474

b. PA Department of Environmental Protection, www.dep.pa.gov
DEP Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335
Telephone# 814-332-6945

c. PA Emergency Management Association, www.pema.pa.gov
PEMA Western Area Office
276 Stormer Road
Indiana, PA 15701
Telephone# 724-357-2990

d. PA Public Utility Commission, www.puc.pc.gob
Public Utility Commission
400 North Street
Keystone Bldg.
Harrisburg, PA 17120
Telephone# 800-692-7380

e. First Energy Utilities of Pennsylvania, www.firstenergycorp.com
West Penn Power
Regional engineering – Interconnection
800 Cabin Hill Drive
Greensburg, PA 15601
Fax : 234-678-2502
Email : WP_interconnection@firstenergycorp.com
Note: Only for locations that are serviced by West Penn Power, an agreement with West Penn to connect to the grid is required.

f. Central Electric Cooperative, www.central.coop
Central Electric
P.O. Box 329
Parker, PA 16049
Telephone# 800-521-0570
Note: Only for locations that are serviced by Central Electric, an agreement with Central Electric to connect to the grid is required.

ENACTED AND ORDAINED this 26th day of November, 2024.

Commonwealth of Pennsylvania

County of ARMSTRONG

Signed (or attested before me:

EAST FRANKLIN TOWNSHIP

BOARD OF SUPERVISORS

_____
Barry Peters, Chair

_____
Dean Hepler, Vice Chair

_____
David Stewart, Supervisor