

Proposed amendments to the Pulaski County UDO regarding Solar Energy Systems and Small Wind Energy Facilities/Micro WECS/Non-Commercial WECS: PROPOSED BRAND-NEW LANGUAGE

Proposed Section 7.13

Regulations on Accessory Use SES

1. See Section 7.2, “General Regulations,” for rules applying to all SES, as well as Section 2.3.R., “Applications for Solar Energy Systems (SES).” Additionally, any regulation pertaining to SES in this chapter not explicitly noted as pertaining solely to CSES also pertains to Accessory Use SES.
2. Setbacks, building separation distances, and lot-coverage limitations established in Section 3 of this Ordinance, “Zoning Districts,” apply to Accessory Use SES developed in any zoning district, as appropriate. Additionally, ground-mounted and pole-mounted SES shall not extend beyond the side-yard or rear-yard setback when oriented at minimum tilt design.
3. As appropriate to the site of the proposed installation, its zoning district, and its neighboring uses and distances therefrom, visual buffering in the form of evergreen landscaping or an opaque fence shall be installed, unless the neighboring resident/property owner waive this requirement, or the administrator waive any or all of these requirements based on the district and neighboring uses. Security measures to limit risks to health and welfare, including but not limited to fencing, shall be installed around the accessory-use SES to the administrator’s satisfaction.
4. The panel surface and mounting devices for roof-mounted systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built unless the panel or mounting system has been engineered to extend beyond the edge safely and setback requirements are not violated.
5. SES shall be located in such a manner as reasonably to minimize view blockage and shading for surrounding properties while still providing adequate solar access for panels.

Proposed Section 7.14

Safety, Design, and Installation Standards for SES

Flood Plains

Rules and requirements pertaining to building or not building in a flood plain apply to the construction of an SES.

Equipment Type and Industry Standards

1. Panels: All SES shall be constructed of commercially available equipment with a UL listing or approved equivalent.
2. Experimental, or Proto-type Equipment: Experimental or proto-type equipment still in testing which does not fully comply with industry standards may be approved by the Board of Zoning Appeals per the variance process established by this Ordinance.
3. All SES shall conform to applicable industry standards, as well as all local, state and federal regulations. An applicant shall submit certificate(s) of design compliance that the CSES manufacturer(s) has/have obtained from an accredited registrar/safety certification company/testing laboratory.
4. The manufacturer specifications for the key components of the SES shall be submitted with the application

5. All SES shall be installed by a qualified solar installer.

Perimeter buffer

All ground-mounted electrical and control equipment for CSES shall be surrounded by a fence no shorter than six (6) feet to prevent unauthorized access. The solar array and/or modules shall be designed and installed to prevent access by the public, and access to same shall be through a locked gate. The planting of evergreens or use of opaque fencing along the perimeter of the CSES, including along road frontage, shall be considered. Along property lines, this shall be left to the negotiation process between the developer and the individual neighboring land owner. In cases in which a neighboring property owner is not a participant in the project, a buffer shall be required unless waived by said property owner.

Whether such buffering shall be required along the fronting road shall be determined by the administrator in a case-by-case basis, depending on such factors as average daily traffic on the road, elevation, and neighboring uses. If an occupied residence exists across the road from the project site, and the owner and/or occupant enters into a contract with the developer, then contract negotiations shall override an administrative decision not to require such buffering. If the across-the-road neighbor is not party to a contact with the developer, then the administrator shall consider the impact on said property in determining whether a front-yard buffer is required.

Lighting

All lighting shall adhere to but not exceed any legal requirements established elsewhere and shall be limited to that required for safety, inspection/repair/maintenance, and operational purposes. Lighting may require shielding so that no glare extends substantially beyond any SES structure.

Warnings and Safety

- a. "No Trespassing" signs shall be attached to any perimeter fence.
- b. "Danger" and "High Voltage" signs shall be posted at the height of five (5) feet on [on/near arrays] and on accessory structures
- c. At the locked entrance to the facility, the following shall be provided:
 - i. a sign showing the names and phone numbers of the electric utility provider, the site operator, and an emergency contact, as well as the facility's 911 address and GPS coordinates.
 - ii. A lock box with keys

Wind resistance

All solar panels shall be built to resist wind speeds of at least 112 miles per hour.

Electrical Components.

- 1. Standards: All electrical components of all SES shall conform to applicable local, state, national, and international codes and standards, including National Electrical Code (NEC) (NFPA-70), the American National Standards Institute (ANSI), the Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), the Institute of Electric and Electronic Engineers (IEEE), the Solar Rating and Certification Corporation (SRCC), the Electrical Testing Laboratory (ETL), and other similar certifying organizations, the Federal Aviation Administration (FAA), the Indiana Building Code (IBC), and any other standards applicable to solar energy systems
- 2. Collection Cables: All electrical collection cables between and within each SES shall be located underground wherever possible.

3. Transmission Lines: All transmission lines that are buried should be at a depth consistent with or greater than local utility and telecommunication underground lines standards or as negotiated with the land owner or the land owner's designee until the same reach the property line or a substation adjacent to the property line.

Materials Handling, Storage and Disposal.

1. All solid wastes whether generated from supplies, equipment, parts, packaging, operation or maintenance of the facility, including old parts and equipment related to the construction, operation and/or maintenance of any SES shall be removed from the site promptly and disposed of in accordance with all federal, state, and local laws.
2. All hazardous materials or waste related to the construction, operation and/or maintenance of any SES shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal laws.

Proposed Section 7.15

Other Applicable SES Standards

Noise and Glare

Noise from a CSES shall not exceed 80 dBA measured from the nearest property line. This limit may be waived by any adjoining property owner. All other noise and vibration levels shall be in compliance with all state and federal regulations. All CSES shall be designed, and reflection angles oriented, to avoid concentrated and prolonged glare into abutting structures and roadways

Water, Sewer, and Tile

ALL CSES facilities shall comply with the existing septic and well regulations as required by the Pulaski County Health Department and/or the State of Indiana Department of Health, and no CSES may be built over drainage tile unless arrangements for reconstruction/relocation have been made with the owner thereof.

Feeder lines and utility interconnections

To the greatest practical extent, all electrical wires and utility connections for CSES shall be installed underground, except for transformers, inverters, switchyards/substations, and controls. The Planning Director will take into consideration prohibitive cost and site limitations in making his or her determination. The CSES, if interconnected to a utility system, shall meet the requirements for interconnection and operate as prescribed by the applicable regulations of the electrical utility, as amended from time to time.

Signage

All signs, other than the manufacturer's or installer's identification, appropriate warning (including safety and trespassing) signs, or owner identification on a solar panel array and/or modules, building, or other structure associated with the CSES, shall be prohibited.

1. The following signage regulations and standards apply. In the event that one of the following regulations or standards conflicts with another sign regulation or standard prescribed by this ordinance, the most restrictive regulation or standard shall apply.
 - a. No sign shall exceed sixteen (16) square feet in surface area.
 - b. No sign shall exceed eight (8) feet in height.
 - c. A sign not to exceed two (2) square feet in surface area may be placed upon any compartment containing the electrical equipment.
 - d. A sign may be located on each side of the total project area, provided that there are no more than four (4) such signs located on any one project site.

Communications Disturbances

All SES shall be installed so as not to cause significant wire or wireless communication signal disturbance.

Proposed Section 7.16

SES Operations and Maintenance

A. Physical Modifications.

1. In general, any physical modification to any SES that alters the major electrical components or mechanical movement of a panel/array shall require re-certification. Like-kind replacements shall not require re-certification. Therefore, prior to making any physical modification, the owner or operator shall confer with the Building Department and Advisory Plan Commission to determine whether the physical modification requires re-certification.

B. Outdoor Storage

Only materials, vehicles, and equipment that directly support the operation of a CSES shall be allowed to be stored outdoors on the site.

C. Interference.

1. Operation of an SES shall minimize interference with public or public serving utility microwave transmissions. If necessary, the applicant, owner and/or operator shall mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any SES. In addition, the applicant, owner, and/or operator shall comply with the following:

a. Pre-Construction

1) The applicant shall complete a communications study prior to construction so as to minimize interference with any public or public serving utility microwave transmissions.

b. Post-Construction

1) If, after construction of the SES, the owner or operator receives a written complaint related to interference with the broadcast of residential television, telecommunication, communication or microwave transmissions, the owner or operator shall take reasonable steps to mitigate said interference. Interference with private telecommunications systems such as GPS shall be between the company and the complainant.

c. Failure to Remedy a Complaint

1) If an agreement to remedy a known interference is not reached within ninety (90) days, appropriate action will be taken, which may result in requiring the SES to become inactive. This does not apply to interference with private telecommunications systems as described above.

D. Declaration of Public Nuisance.

1. Any SES thereof declared to be unsafe by the Pulaski County Building Inspector by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, damage or abandonment is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, demolition or removal in accordance with the approved Decommissioning Plan.

Proposed Section 7.17

Commercial SES Setbacks

Table 7.3, "Minimum Setbacks for Commercial Solar Energy Systems"

<u>Distance from a ...</u>	<u>Minimum Setback Distance</u>
Non-participating/non-included property line, County Maintenance Ditch, or right-of-way to a solar panel	75'
Non-participating/non-included property line or any residence to an inverter or converter	100'
Inverter or converter to a communications tower	1.1 x height of the tower

Proposed Section 7.18

CSES Pre-Construction Requirements

A. Prior to the issuance of any Building Permit, the following shall be submitted to and reviewed by the Building Inspector, who shall certify that the following are in compliance with all applicable regulations.

1. A decommissioning plan as prescribed in Section 7.4 of this Ordinance.

2. An Economic Development Agreement (EDA), a Drainage Agreement (DA), and a Road Use and Maintenance Agreement (RUMA) approved by the County Commissioners.
 - a. The EDA shall be developed in conjunction with the Pulaski County economic-development director as amended, the Pulaski County Board of Commissioners and County Council, and Pulaski County’s attorney. The EDA shall address property-tax abatements offered as incentive for development; payments in lieu of taxes (PILOT) to be made to the County and its units, and the distribution thereof; and any other related issues deemed necessary. This agreement must be signed before any Building Permit is issued; the applicant may withhold building-permit payment and any payment guaranteed by the EDA until the Pulaski County Council has noticed and conducted a public hearing pertaining to tax-abatement incentives and adopted the resolutions required awarding such incentives.

 - b. The DA must prescribe or reference provisions to address well, crop, field-tile, County–maintenance-ditch, and culvert damages, as well as responsible storm-water management practices during construction and operation. The DA shall be developed in conjunction with the Pulaski County Drainage Board and the attorney therefor, the Pulaski County Surveyor, the Pulaski County Highway Department (County Highway) Superintendent, and Pulaski County’s attorney. This agreement must be signed before any Building Permit is issued.

 - c. The RUMA shall assure Pulaski County that a CSES developer shall to the greatest extent possible limit road closures and potential safety hazards to motorists, pedestrians, neighboring residents and land users, and laborers; to the greatest extent possible avoid disruption of power or other utility services to surrounding areas; abide by other parts of this ordinance pertaining to road-use and road-closure notification; to the greatest extent possible avoid any damage to County-maintained roads, rights-of-way, signage, and ditches; provide, prior to construction, adequate financial assurance to the County pertaining to the developer’s ability to repair any damages done to County-maintained roads and rights-of-way; and repair, after construction completion, any and all damages done to County-maintained road, rights-of-way, signage, and ditches to the approval of the County Highway Superintendent and, if appropriate, Surveyor. The RUMA shall be developed in conjunction with the County Highway Superintendent, the County Surveyor, and Pulaski County’s attorney.

3. An erosion control plan developed in consultation with the Natural Resources Conservation Services (NRCS), and any storm water quality management plan adopted by the applicable jurisdiction.
4. A utility plan drawn to the same scale as the site plan illustrating the location of all underground and above-ground utility lines associated with the total CSES project.
5. Provide a copy of the Site Layout Plan illustrating the expected location of all that is required in the preliminary site layout plan, as approved by the landowner.
6. In addition to complying with the approved RUMA, an applicant, owner, or operator proposing to use any county road(s), for the purpose of transporting CSES or substation parts and/or equipment for construction, operation or maintenance of a CSES or substation, shall comply with the following pre-construction requirements.
 - a. Identification of Roads and Services. The CSES operator shall identify all State highways and local roads to be used in the transport of equipment and parts for construction of the CSES. It shall also prepare a timeline and phasing plan for construction and identify any known road closures. This information shall be released to the local newspapers as notice to persons who may be affected. This information shall also be conveyed to local law enforcement, emergency services, public school corporations, the United States Postal Service, the regional office of the Indiana Department of Transportation (INDOT), and County Highway. INDOT and County Highway may require alterations of the plan as they judge appropriate to limit obstruction of daily circulation patterns.
 - b. Pre-construction Survey. The applicant shall conduct a pre-construction baseline survey acceptable to the Highway Superintendent to determine existing road conditions for assessing potential future damage. The survey shall include photographs, or video, or a combination thereof, and a written agreement to document the condition of the public facility. The Highway Superintendent shall have 10 business days to respond to the base line survey.

Proposed Section 7.19

CSES Construction Requirements

A. During construction, the applicant shall demonstrate that the following requirements are being met.

1. Reasonable dust-, noise-, and lighting-control measures shall be required by the County during construction of a CSES.
2. Reasonable storm water best management practices as required by the approved Drainage Agreement.
3. During construction, roads shall remain open at all times except for periods of time less than twenty (20) minutes unless notice is provided as required herein. Expected loss of capacity (i.e., temporary closures) greater than twenty (20) minutes shall require notice to neighboring and affected property owners at least twenty-four (24) hours prior to the temporary closure, and either a detour to be established or personnel to redirect traffic to alternate routes during the temporary closure unless closed for the day by County Highway. Any necessary temporary closures and proposed detours shall be made known to the County at least twenty-four (24) hours prior to the temporary closure or as otherwise agreed.
4. The developer shall adhere to best practices regarding worker and public safety.

5. The developer shall adhere to any and all federal, state, and local laws regarding construction, generally, and of utility infrastructure, specifically.

Proposed Section 7.20

CSES post-Construction Requirements

A. Post-construction, the applicant shall comply with the following provisions.

1. Any road damage caused by the construction of project equipment, the installation of the same, or the removal of the same, shall be repaired pursuant to all expectations and requirements set forth in the RUMA.
2. Upon completion of all development, the exact measurements of the location of utilities and structures erected during the development are necessary for public record and shall therefore be recorded. The applicant, owner, or operator shall submit a copy of the Final Construction Plans (as-built plans), as amended, to the Building Inspector with the exact measurements thereon shown. The Building Inspector, after being satisfied that the measurements are substantially the same as indicated on the originally approved final plan(s), shall approve, date and sign said Construction Plans for the project, which the applicant, owner, or operator shall then record.
3. It is the responsibility of the owner or operator listed in the application to inform the Building Inspector/Plan Administrator of all changes in ownership and operation during the life of the project, including the sale or transfer of ownership or operation.

Proposed Section 2.3.R, “APPLICATIONS FOR SOLAR ENERGY SYSTEMS (SES)”

(Current 2.3.R. now becomes 2.3.S. et c.)

R. Applications for Solar Energy Systems (SES)

1. An application for any SES shall include the following information:
 - a. Contact information of project applicant. The name(s), address(es), and phone number(s) of the applicant(s), as well as a description of the applicant’s business structure and overall role in the proposed project.
 - b. Contact information of current project owner. The name(s), address(es), and phone number(s) of the owner(s), as well as a description of the owner’s business structure (commercial SES only) and overall role in the proposed project, and including documentation of land ownership or legal control of the property on which the SES is proposed to be located. The Plan Commission shall be informed of any changes in ownership.
 - c. Contact information of project operator. The name(s), address(es), and phone number(s) of the operator(s), as well as a description of the operator’s business structure (commercial SES only) and overall role in the proposed project. The Plan Commission shall be informed of any changes in operatorship.
 - d. Legal description. The legal description, address, and general location of the project.
 - e. Project description. A CSES Project Description including:
 - 1) Number of panels;
 - 2) Type;
 - 3) Name Plate generating capacity;
 - 4) Maximum spatial extent (height and fence lines)
 - 5) The means of interconnecting with the electrical grid;
 - 6) The potential equipment manufacturer(s) and model(s); and
 - 7) All related accessory structures.

- g. Engineering Certification. For all SES, the manufacturer's engineer or another qualified registered professional engineer shall certify, as part of the building permit application, that all equipment is within accepted professional standards, given local soil and climate conditions. An engineering analysis of the equipment showing compliance with the applicable regulations and certified by a licensed professional engineer shall also be submitted. The analysis shall be accompanied by standard drawings of the solar panel, including the base.
2. Applications for Accessory Use SES. In addition to the application requirements listed in Section 2.3 (R) (1), the following shall apply for accessory-use SES:
- a. Demonstration of energy need. The primary purpose of the production of energy from an accessory-use SES shall be to serve the energy needs of that tract. The applicant(s) shall demonstrate how much energy is needed and how the proposed size and number of the SES fulfills this need. Net-metering shall be allowed, but producing excess electricity to deliver back to the grid shall not be the primary intent of the SES.
 - c. Utility Notification. No accessory-use SES shall be installed until evidence has been given that the local utility company has been informed of the customer's intent to install an interconnected customer-owned generator, inspected the SES, and approved it.. Off-grid systems shall be exempt from this requirement.
 - d. Compliance with National Electrical Code. A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.
 - f. A site layout plan. A Development Plan, drawn to scale, including distances and certified by a registered land surveyor. All drawings shall be at a scale not smaller than one inch equals 200 feet (1"=200') and not larger than one inch equals 50 feet (1"=50'). Any other scale must be approved by the Administrator. No individual sheet or drawing shall exceed twenty-four inches by thirty-six inches (24"x 36"). The plan should include the following information:
 - 1) address, general location, acreage, and parcel number(s) of subject property
 - 2) name of subdivision in which property exists (if applicable)
 - 3) location/key with north arrow
 - 4) property dimensions
 - 5) existing and proposed buildings, parking areas, and other natural and manmade features, including locations of any utilities, wells, drainage tiles, and/or waterways
 - 6) existing and proposed building setbacks and separation
 - 7) delineation of all requested variant development standards (if applicable)
 - 8) *approximate* locations of neighboring uses and structures
 - 9) brief description of neighboring uses and structures
 - 10) map scale
 - 11) dated signature of applicant and owner
3. Applications for Commercial SES (CSES). In addition to the application requirements listed in Section 2.3 (R) (1), applications for CSES shall also include the following information:
- a. A site layout plan. A Development Plan, drawn to scale, including distances and certified by a registered land surveyor. All drawings shall be at a scale not smaller than one inch equals 200 feet (1"=200') and not larger than one inch equals 50 feet (1"=50'). Any other scale must be approved by the Administrator. No individual sheet or drawing shall exceed twenty-four inches by thirty-six inches (24"x 36"). The plan should include the following information:
 - 1) address, general location, acreage, and parcel number(s) of subject property
 - 2) name of subdivision in which property exists (if applicable)
 - 3) location/key with north arrow
 - 4) property dimensions

- 5) location of and distance to any substations or other means of connection to the electrical grid, including above-ground and underground electric lines, as well as a copy of the written notification provided to the utility company requesting interconnection
- 6) existing and proposed buildings and solar panels, with appropriate setbacks, parking areas, natural features, including vegetation (type and location) and wetlands, and other manmade features, including locations of any utilities, wells, drainage tiles, and/or waterways
- 7) Electrical cabling
- 8) Ancillary equipment
- 9) adjacent or on-site public or private streets/roads and alleys
- 10) existing and proposed ingress/egress
- 11) existing building setbacks and separation
- 12) delineation of all requested variant development standards (if applicable)
- 13) existing easements
- 14) *approximate* locations of neighboring uses and structures
- 15) brief description of neighboring uses and structures
- 16) existing and proposed landscaping, lighting, and signage
- 17) a fire-protection plan for the construction and operation of the facility, including emergency access to the site.
- 18) proof of correspondence and cooperation with wildlife agencies regarding endangered species.
- 19) map scale
- 20) Dimensional representation of the structural components of the construction including the base and footings
- 21) Any other item reasonably requested by the Board of Zoning Appeals.
- 22) dated signature of applicant and owner

b. Topographic Map. A USGS topographical map, or map with similar data, of the property and the surrounding area, including any other CSES, flood plains or wetlands within 1 mile, with contours of not more than five (5) foot intervals.

c. Copy of a Communications Study

d. The CSES applicant shall certify that the applicant will comply with the utility notification requirements contained in Indiana law and accompanying regulations through the Indiana Public Utility Commission.

e. Evidence of compliance with storm drainage, erosion, and sediment control regulations (Rule 5).

4. Aggregated Project Applications. Aggregated projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearing, and reviews and, as appropriate, approvals.

a. Aggregated Projects. Permits for aggregated projects will be issued by construction phases and recorded separately, as prescribed in this Ordinance.

Proposed new definitions for Section 8

Solar Energy System

A system capable of collecting and converting solar radiation into heat or mechanical or electrical energy and transferring these forms of energy by a separate apparatus to storage or to point of use, including, but not limited to, water heating, space heating or cooling, electric energy generation, or mechanical energy generation. This definition shall include Solar Thermal, Photovoltaic, and Passive Solar Systems and both large-scale commercial and small-scale accessory use solar energy systems.

Commercial Solar Energy System (CSES)

An area of land or other area used by a property owner, multiple property owners, and/or corporate entity and its contained industrial-scale group or series of photo-voltaic (or solar) panels placed to convert solar radiation into usable direct current electricity or thermal power, and supply electrical or thermal power, primarily or solely for off-site utility grid use, and consisting of one or more free-standing ground-mounted, solar arrays or modules, battery storage facilities, solar related equipment, and ancillary improvements, including substations. CSES are a minimum of 5 acres in total area.

Accessory Use Solar Energy System (AUSES)

A solar panel, or array thereof, used for a solar collection system principally used to capture solar energy and to convert it to electrical energy or thermal power to supply electrical or thermal power primarily or solely for on-site use, and consisting of one or more free-standing, ground- or roof-mounted panel(s) or modules and solar related equipment, intended to primarily reduce on-site consumption of utility power and/or fuels. AUSES shall be permitted in all zoning districts as accessory structures in each zoning district in which they are erected. The maximum size of AUSES is limited to the maximum size allowed for an accessory structure in each zoning district, and AUSES shall not be excluded from maximum-height, setback, or lot-coverage restrictions.

Net Metering

A billing arrangement that allows solar customers to get credit for excess electricity that they generate and deliver back to the grid so that they only pay for their net electricity usage at the end of the month.

Photovoltaic (System)

A solar energy system that produces electricity by the use of semiconductor devices called photovoltaic cells that generate electricity whenever light strikes the cells.

Qualified Solar Installer

A trained and qualified electrical professional who has the skills and knowledge related to the construction and operation of solar electrical equipment and installations and has received safety training on the hazards involved.

Solar Array

Multiple solar panels combined together to create one system, which may be small enough to serve as an Accessory Use Solar Energy System or large enough to be paired with multiple arrays to create a Commercial Solar Energy System.

Solar Access

Unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

Solar Panel

A device for the direct conversion of sunlight into useable solar energy (including electricity or heat).