

BUCHANAN COUNTY, MISSOURI

UTILITY-SCALE SOLAR ENERGY SYSTEMS

This regulation is designed to address the authorization of Utility-Scale Solar Energy Systems in Buchanan County, Missouri. The regulation is organized as follows:

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- I. **PURPOSE:** To set forth standards for the construction, installation, operation, and decommissioning of a utility-scale solar energy system in Buchanan County in a manner that promotes economic development and ensures the protection of health, safety, and welfare. This ordinance is not intended to abridge safety, health, or environmental requirements contained in other applicable codes, standards, or ordinances. The provisions of this regulation shall not be deemed to nullify any provisions of local, state, or federal law.
- II. **APPLICABILITY:** This regulation applies to the siting, construction, installation, operation, and decommissioning of utility-scale (large) solar energy systems to be constructed or installed after

the effective date of this regulation within the jurisdiction of Buchanan County. This regulation shall not be applicable to accessory solar energy systems located within the jurisdiction of Buchanan County.

III. DEFINITIONS.

- a. An accessory solar energy system consists of one (1) or more free-standing ground or roof mounted solar arrays or modules or solar related equipment and is intended to primarily reduce on-site consumption of utility power or fuels at homes or businesses.
- b. **AGRIVOLTAICS:** A solar energy system co-located on the same parcel of land as agricultural production, including crop production, grazing, apiaries, or other agricultural products or services.
- c. **APPLICANT:** Person who signs an application for a utility-scale solar energy system permit; the term also includes the following, as applicable:
 - i. If Applicant applied in his or her individual capacity, the Applicant's heirs, legal representatives, successors, and assigns; or
 - ii. If Applicant applied in his or her capacity as an agent, then Applicant's principals and their other respective agents, heirs, legal representatives, successors, and assigns; and
 - iii. If Applicant is a tenant, then, in the case the Applicant abandons the solar energy system, all landowners and their respective heirs, legal representatives, successors, and assigns.
- d. **COUNTY OR BUCHANAN COUNTY:** The Buchanan County Commission and Buchanan County Planning and Zoning Board.
- e. **GLARE:** The effect produced by light with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.
- f. **GROUND-MOUNTED:** A solar energy system mounted on a rack or pole that rests or is attached to the ground and is not attached or affixed to an existing structure or building.
- g. **HABITABLE (OR INHABITABLE) STRUCTURE:** A structure designed for human occupancy and that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.
- h. **NON-PARTICIPATING LANDOWNER:** A parcel of real property which is not under lease or other property agreement with the USES owner/operator.
- i. **PARTICIPATING LANDOWNER:** A parcel of real property which is under lease or other property agreement with the USES owner/operator.
- j. **POLLINATOR-FRIENDLY SOLAR ENERGY:** A USES that meets the requirements of the Missouri Pollinator Habitat Planning Tool for Solar Sites developed by University of Missouri Extension or another pollinator friendly checklist developed by a third-party as a solar-pollinator standard designed for Midwestern ecosystems, soils, and habitat.
- k. **ROOF-MOUNTED:** A solar energy system mounted on a rack that is fastened to or ballasted on a structure roof. Roof-mounted systems are accessory to the principal use.
- l. **SOLAR EASEMENT:** A solar easement means a right, expressed as an easement, restriction, covenant or condition contained in any deed, contract, or other written instrument executed by or on behalf of any landowner for the purpose of assuring adequate access to direct sunlight for solar energy systems.

- m. **SOLAR ENERGY:** Radiant energy (direct, diffuse, and/or reflective) from the sun.
- n. **SOLAR ENERGY SYSTEM:** A device, array of devices, or structural design feature, the purpose of which is to provide for generation or storage of electricity from sunlight. The term applies, but is not limited to, solar photovoltaic systems, solar thermal systems, and solar hot water systems.
- o. **SOLAR PANEL:** That part or portion of a solar energy system containing one (1) or more receptive cells or modules, the purpose of which is to convert solar energy for use in space heating or cooling, for water heating, and/or electricity.
- p. **SOLAR PHOTOVOLTAIC SYSTEM:** A solar energy system that produces electricity by the use of semiconductor devices called photovoltaic cells that generate electricity whenever sunlight strikes them.
- q. **SOLAR-RELATED EQUIPMENT:**
 - i. **SOLAR ARRAY:** A grouping of multiple solar modules with the purpose of harvesting solar energy.
 - ii. **SOLAR CELL:** The smallest basic solar electric device which generates electricity when exposed to sunlight.
 - iii. **SOLAR MODULE:** A framed unit containing a grouping of solar panels.
 - iv. **SOLAR STORAGE BATTERY:** A component of a solar energy device that is used to store solar-generated electricity or heat for later use.
- r. **UTILITY-SCALE SOLAR ENERGY SYSTEM (USES):** A solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power for the primary purpose of wholesale or retail sales of generated electricity for off-site use. Utility-scale solar energy systems produce fifty (50) megawatts or more and consist of a group of interconnected solar panels, electrical collection and transmission lines, transformers, inverters, substations, battery energy storage systems, operation and maintenance facilities, and other appurtenant structures. These larger solar energy generation systems are often referred to as utility-scale solar.
- s. **UTILITY-SCALE SOLAR ENERGY SYSTEM PERMIT:** A zoning permit issued upon compliance with standards of this regulation.

IV. **GENERAL REQUIREMENTS**

- a. USESs shall be permitted in industrial and agricultural zoning districts through the USES Permit process, subject to terms and conditions as set forth below in Section VI.
 - i. A USES Permit issued by the Buchanan County Planning and Zoning Commission is required prior to any USES commencing construction.
 - ii. A USES Permit will expire and become null and void if construction has not been initiated within three (3) years from the permit issuance date or if the USES is out of service or abandoned for a period of twelve (12) continuous months. The Buchanan County Planning and Zoning Commission may grant extensions to the three (3) year and twelve (12) month deadlines based on hardship conditions.
 - iii. The USES Permit application fee is based on the rated capacity as provided in Table 1 and is non-refundable. If Buchanan County incurs expenses greater than can be covered by this permit fee, the county will directly invoice the applicant for the additional costs.

- iv. Any physical modification that materially alters the USES after the initial permit is issued, including, but not limited to repowering, shall require approval and a permit modification under this regulation.
- v. The permit shall be revoked if the USES, whether new or pre-existing, is moved or otherwise altered, either intentionally or by natural forces, in a manner which causes the USES not to be in conformity with these regulations.

Table 1

Rated Capacity	Fee
50 MW	\$10,000
>50 MW up to and including 75 MW	\$12,000
>75 MW	\$14,000
Permit Modification	\$4,000

- b. A USES shall be permitted as a conditional use in accordance with Section 705 and Section 807 of the Buchanan County Zoning Order in miscellaneous districts and in agricultural and industrial zoning districts if the terms and conditions as set forth below in Section VI are not met.
 - c. A USES is prohibited in residential and business zoning districts.
 - d. It is unlawful for any person to construct, install, maintain, modify, or operate a USES that is not in compliance with this regulation or with any condition contained in a USES Permit issued pursuant to this regulation.
 - e. The USES will allow designated Buchanan County representative or employee's access to the facility at any time for inspection purposes provided such inspections shall be subject the USES's owner or operators reasonable safety requirements and protocols while on the subject property.
 - f. A USES constructed prior to the effective date of this regulation shall not be required to meet the terms and conditions of these regulations. Any physical modification to an existing USES, whether or not it existed prior to the effective date of this regulation, that materially alters the USES shall require approval under this regulation. Routine maintenance or like-kind replacements do not require a permit.
- V. **PERMIT APPLICATION PROCESS:** The USES Permit application process will involve the following steps. Throughout this process the County will be involved as a resource to assist in maintaining good relationship between all stakeholders in the project, including potentially affected nonparticipating landowners:
- a. **PRE-APPLICATION MEETING:** An informal meeting shall be held between the County and applicant at least sixty (60) days before the intended submittal date of the USES Permit application. This meeting will be a question/answer session to be used for familiarization of the County with the proposed project and for clarification of requirements before the application is finalized. The applicant shall be responsible for arranging a mutually acceptable meeting time and date. If requested by the County, the pre-application meeting shall include an applicant-facilitated site visit.
 - b. **APPLICATION COMPLETENESS REVIEW:** The County will review a USES Permit application for completeness within fifteen (15) calendar days upon receipt. As

appropriate, additional information will be requested from the applicant. The applicant shall provide the requested information within thirty (30) calendar days from the date of the request. If the requested information is not provided within thirty (30) calendar days the County will terminate their review of the application and return the application to the applicant.

- c. **PUBLIC HEARING:** The County will hold a hearing on the USES Permit application that will be open to the public. The hearing will be noticed in the largest circulation local newspaper at least fifteen (15) calendar days before its scheduled occurrence. Members of the public who are residents of Buchanan County or who are participating landowners in the project will be offered the opportunity to provide verbal comments and/or written comments on the application. Members of the public who are not residents of Buchanan County, except for participating landowners in the project, will be allowed to submit written comments only. Written comments can be submitted to the County at any time between the announcement of the public hearing until fifteen (15) calendar days aft the closure of the public hearing.
- d. **DETERMINATION:** The County will consider all public comments received and will issue a permit approval or denial within forty-five (45) calendar days after the closing of the public hearing. The County will include conditions on the permit approval at its discretion. The County has the right and duty to decide on each USES Permit application as it determines best for the county and residents. Fulfillment of the requirements of this regulation in a USES Permit application does not constitute an obligation on the part of the County to approve a permit for the project.

VI. **PERMIT APPLICATION CONTENTS:** An applicant proposing a USES must submit an application that demonstrates the terms and conditions provided in Section VII are met and contains the following:

- a. A list of landowners who authorized placement of solar facilities on their properties along with copies of any lease documents, if applicable.
- b. The applicant shall submit a detailed site plan for both existing and proposed conditions, showing locations of all solar arrays, other structures (inverters, transformers, electrical substations, and other buildings), property lines, rights-of-way, service roads, required setbacks, visual buffers, floodplains, wetlands, and other protected natural resources, topography, and electric equipment. The site plan should show all zoning districts that the project would be located in. The applicant shall also provide to the County the following information on the site plan or in narrative form:
 - i. Number, location, and spacing of solar panels.
 - ii. Maximum Megawatts (MW) which may be generated.
 - iii. Planned location of underground and aboveground electric lines.
 - iv. Planned access to the USES for emergency responders.
 - v. Project development timeline.
 - vi. Identification of prime farmland and farmland of statewide importance.
 - vii. Operation and maintenance plan.
 - viii. Landscaping plan.
 - ix. Visual buffer plan.
 - x. Decommissioning plan.

- xi. Name, address, email address, and phone number of the contact person and 24-hour contact person of the applicant.
- xii. The address and legal description of the proposed site, including the property parcel numbers for each tract.
- c. A description of the routes to be used by construction and delivery vehicles and of any road improvements that will be necessary in the County to accommodate construction vehicles, equipment or other deliveries, and an agreement or bond which guarantees the repair of damage to public roads and other areas caused by construction of the USES. A Road Use Agreement must be signed by the USES developer/owner and the County and must include provision for restoring county roads to a condition equal or better than before construction of the USES.
- d. Digital versions of all planning and construction documents required, in pdf format.
- e. Application fee as specified in Table 1.
- f. If the applicant is not a utility, the applicant shall provide the County written confirmation that the public utility company to which the USES will be connected has been informed of the customer's intent to install a grid connected system and approved of such connection.

VII. **TERMS AND CONDITIONS**

- a. **HEIGHT:** Ground mounted panels shall not exceed twenty-five (25) feet in height when oriented at maximum tilt.
- b. **SETBACKS:** At a minimum, the USES shall meet the following setbacks. Setback distance shall be measured from the outer edge of the USES array, excluding security fencing and visual buffer.
 - i. **Alternative 1**
 - 1. A one hundred (100) foot setback shall be maintained from property lines or the established setback for buildings or structures in the zoning district in which the USES is located; whichever is greater. The setback increases to two hundred (200) feet if the USES is adjacent to a property that is zoned as residential or to a property zoned as agricultural if a non-participating residential dwelling is within five hundred (500) feet of the property line.
 - 2. A one hundred-fifty (150) foot setback shall be maintained from a participating landowner's residential dwelling.
 - 3. A fifty (50) foot setback shall be maintained from the right-of-way of State and County highways and a thirty (30) foot setback from the right-of-way of all other roads, or the required setback for the applicable zoning district, whichever is greater.
 - ii. **Alternative 2**
 - 1. A one-hundred fifty (150) foot setback shall be maintained from all property lines or the required setback for the applicable zoning district, whichever is greater.
 - iii. Waiver

1. Participating and non-participating landowners may waive or mutually agreed upon in writing a reduced distance to the property line and residential dwelling setbacks.

2. Alternative - All setbacks can be reduced by fifty (50) percent, but not less than 30 feet, if the array has a landscape buffer that screens the array at the setback point of measurement.

c. **VISUAL BUFFER:**

- i. **Alternative 1** – The applicant shall submit a landscaping plan outlining the proposed screening for the project, including, but not limited to natural and native vegetation, plantings, earth berms, or fencing that provides a year-round visual buffer to restrict the view of the USES from adjacent public or private property (including property located across the public right-of-way from the USES). Existing natural tree growth and natural land berms along the USES perimeter may create a sufficient buffer if approved by the County and shall be preserved when reasonably practicable.
- ii. **Alternative 2** – A visual buffer is required when an existing, inhabited residential dwelling is located within five hundred (500) feet of the USES, excluding any fencing. The applicant shall submit a landscaping plan outlining the proposed screening for the project, including, but not limited to natural and native vegetation, plantings, earth berms, or fencing that provides a year-round visual buffer to restrict the view of the USES. Existing natural tree growth and natural land berms along the USES perimeter may create a sufficient buffer if approved by the County and shall be preserved when reasonably practicable.
- iii. **Alternative 3** – A visual buffer shall not be required along public rights-of-way, or along property lines within the same zoning district unless the County determines there is a clear community need in maintaining the viewshed.
- iv. A visual buffer plan must be submitted to and approved by the County. The types of vegetation to be planted must be approved in advance by the County. Any existing or planted vegetative buffer shall consist of vegetation which is of a type and species which will normally grow to a height in the geographic area within a reasonable time period sufficient to shield the USES from view of adjacent landowners and the public right-of-way (native vegetation species preferred). Buchanan County shall have the right to contract with any outside agency or entity with regard to the types of plantings to be used. The cost of any such outside review shall be the responsibility of Buchanan County.
- v. Any visual buffer must be established as shown on the approved site plan and maintained in accordance with the most recent visual buffer plan approved by the County.

d. **GROUND COVER:**

- i. **Alternative A** - Land around and under solar panels and in USES buffer areas shall be planted, established, and maintained for the life of the USES in perennial vegetated ground cover meeting the definition of Pollinator-Friendly Solar Energy in Section III above. The applicant shall submit a completed pollinator-friendly solar scorecard such as the Missouri Pollinator Habitat

Planning Tool for Solar Sites developed by University of Missouri Extension, or a similar third-party solar pollinator standard designed for Midwest eco-systems and conditions. The scorecard results must demonstrate that the project qualifies as pollinator-friendly. Vegetation to be planted must be approved by the County.

- ii. **Alternative B** – Land around and under solar panels and in the USES buffer areas shall be planted, established, and maintained for the life of the USES in perennial vegetated ground cover. To the maximum extent feasible for site conditions, perennial vegetation ground cover shall be based on a diverse seed mix of native species consistent with the guidance specific to the local area. Vegetation to be planted must be approved by the County.
 - iii. The site shall be planted and maintained to be free of invasive or noxious species as listed by the Missouri Department of Agriculture, without harming perennial vegetation. No insecticide use is permitted on the site. This provision does not apply to insecticide use in on-site buildings, in and around electrical boxes, spot use of herbicides to control of noxious weeds, or as otherwise may be deemed necessary to protect public health and safety.
 - iv. Clearing of natural vegetation in connection to the USES shall be limited to that which is necessary for the construction, operation, and maintenance of the USES and consistent with best practices for the preservation of natural areas or good husbandry of the land or forest areas.
- e. **PRIME FARMLAND AND FARMLAND OF STATEWIDE IMPORTANCE:** USES that is constructed or installed on land classified as prime farmland or farmland of statewide importance shall demonstrate co-location of agricultural uses (agrivoltaics) on the project site, locating the project in a wellhead protection area for the purpose of removing agricultural uses from high-risk recharge areas, or using pollinator-friendly ground cover.
- f. **BUILDABLE AREA:** USES shall meet the existing lot coverage restrictions applicable to that zoning district. However, ground-mounted solar panels shall be considered pervious and exempt from lot coverage standards if there is vegetation groundcover, sheet flow is maintained, and water is allowed to infiltrate under and around the solar panels through a pervious surface and into the subsoil.
- g. **SOIL EROSION AND SEDIMENT CONTROL:** The applicant agrees to conduct all site development work, including roadwork, in compliance with the Missouri Land Disturbance Stormwater General Operating Permit as required by the Missouri Department of Natural Resources and the Land Disturbance Permit as required by Buchanan County.
- h. **GLARE AND LIGHTING:**
- i. USES shall be placed such that concentrated solar radiation or glare does not project onto nearby structures or roadways, or interfere with traffic, air traffic, or create a safety hazard. The applicant has the burden of proving that any glare produced does not have a significant adverse impact on neighboring or adjacent uses either through siting or mitigation.

- ii. Any on-site lighting provided for the operational phase of the USES shall be fully shielded and directed away from adjacent properties, be positioned downward to minimize light trespass onto adjacent properties and be limited to the minimum reasonably necessary for safe operation.
- i. **FENCING:**
 - i. A perimeter security fence with a minimum height of six (6) feet must be installed along all exterior sides of the USES. The fence shall not include barbed wire or woven wire designs and shall preferably use wildlife-friendly fencing standards that include clearance at the bottom. Alternative fencing can be used if the site is incorporating agrivoltaics.
- j. **POWER AND COMMUNICATION LINES:**
 - i. All utility, transmission, and communications lines running between banks of solar panels and to nearby electric substations or interconnections with buildings, and any plumbing shall be buried underground unless the County grants a written exception due to environmental constraints.
 - ii. Other solar infrastructure, such as module-to-module collection cables, CAB cables, transmission lines, substations, junction boxes, and other typical aboveground infrastructure may be located and maintained aboveground.
- k. **SIGNAGE:** Appropriate warning signs providing a 24-hour emergency contact phone number shall be posted at the USES. No other signs, except standard identification signage related to USES installation, manufacturing, and operations shall be displayed. Signage must be in accordance with the signage requirements of the applicable zoning district.
- l. **COMPLIANCE WITH LOCAL, STATE, AND FEDERAL LAWS:** The USES shall comply with all applicable federal, state, and local laws and regulations including but not limited to, the requirements of the Buchanan County zoning code, applicable building, fire, electric, and plumbing codes, safety and environmental requirements. If a provision in this regulation directly conflicts with a requirement in the Buchanan County zoning code, this regulation shall control.
- m. **OPERATION AND MAINTENANCE:** The applicant must submit an operation and maintenance plan for the County's review and approval. The operation and maintenance plan shall include procedures for operation and maintenance of the USES and its components.
- n. **DECOMMISSIONING:**
 - i. Removal of all solar and solar related equipment, including but not limited to buildings, cabling, electrical components, roads, foundations and other associated facilities must occur within twelve (12) months of the date from when use of the USES has been discontinued or abandoned, or upon termination of the useful life to the system. Removal and restoration must be completed no later than eighteen (18) months after commencement of such decommissioning. The USES is presumed to be discontinued or abandoned if electricity is not generated by the system for a period of twelve (12) consecutive months. Once the USES is decommissioned, the permit shall become null, and void and all rights thereunder shall terminate.

- ii. The USES shall be decommissioned in accordance with the most recent decommissioning plan approved by the County. The USES owner is required to notify the County immediately upon cessation or abandonment of the system. The USES owner must provide written notice within thirty (30) days to the County upon commencement of decommissioning and upon its completion. If the USES owner fails to dismantle and/or remove the USES and restore the land in accordance with the approved decommissioning plan within the established timeframes, Buchanan County may complete the decommissioning and land restoration at the USES owner's expense.
- iii. The real property where the USES was located shall be restored to its substantially original condition, which existed at the time of approval of the construction of the USES by the County. Re-vegetation of restored soil areas shall be with native crops, seed mixes, and plant species suitable to the area.
- iv. The USES owner shall post a bond, letter of credit, or other financial security approved by the County sufficient to ensure the funds in the amount of the estimated decommissioning costs in current dollars less salvage value will be available for decommissioning and restoration. The applicant shall provide the approved security prior to beginning construction. The financial assurance shall automatically renew each year or have no expiration and shall not be released until the USES has been decommissioned and site restoration completed.
- v. A decommissioning plan shall be submitted to and approved by the County prior to construction or installation of the USES and shall contain the following:
 - 1. The name, address, telephone number, and e-mail address of the person(s) or entity(ies) responsible for implementing the decommissioning plan.
 - 2. Statement of conditions that require the decommissioning plan to be implemented.
 - 3. A removal plan that identifies all structures, components, non-utility owned equipment, and underground infrastructure buried within six (6) feet of the surface that shall be removed.
 - 4. A plan for recycling or otherwise reusing all materials to the extent reasonably practicable.
 - 5. A restoration plan to return the property to its condition prior to the installation of the USES or to some other condition reasonably appropriate for the designated land use after the USES is removed.
 - 6. A timeline to complete decommissioning consistent with this regulation.
 - 7. Description of the mechanism for posting of a performance bond, surety bond, irrevocable letter of credit, or other form of financial assurance, and the estimated decommissioning costs in current dollars less salvage value.
- vi. The decommissioning plan and financial assurance shall be updated by the owner of the USES every five (5) years and adjusted as necessary to ensure sufficient funds are available to decommission the project over its life.

- o. **CERTIFICATIONS:** The applicant shall submit an affidavit to the County that provides, to the best of the applicant's knowledge:
- i. That construction and operation of the USES will comply with all applicable federal, state, and local statutes, rules, regulations, and ordinances, including, but not limited to, the requirements of the Buchanan County Zoning Code; and
 - ii. That commercial general liability insurance of at least \$1,000,000.00 will be maintained throughout the siting, construction, installation, operation, and decommissioning of the USES and the USES owner will provide written proof of the existence of such insurance within 30 calendar days of written demand by the County. The USES owner shall further cause the liability insurance carrier to provide at least 30 calendar days' written notice to the County prior to the cancellation of such insurance.

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