



KENTUCKY MODEL SOLAR SITING ORDINANCE 1.0

AUGUST 2024¹

In response to the increasing interest in the development of solar energy resources in Kentucky, Kentucky Resources Council (KRC) developed a Model Solar Zoning Ordinance in 2020 to assist localities in adopting provisions to regulate the siting of solar energy facilities in their communities. This siting ordinance is a complement to KRC's Model Solar Zoning Ordinance, and like that ordinance, is based upon a review of best practices from across the United States. It is tailored to meet the unique needs of those counties in Kentucky that have not adopted planning and zoning, with the twin goals of encouraging appropriate siting of solar facilities and protecting the correlative rights of landowners to the use and enjoyment of their lands.

Each county in Kentucky is unique, and the licensing of solar facilities should be regulated through the broad authority of counties pursuant to KRS § 67.083 to enact ordinances, adopt regulations, and appropriate funds in order to perform these functions: (a) abatement of public nuisances; (b) conservation, preservation and enhancement of natural resources including soils, water, vegetation, and wildlife; and (c) regulation of commerce for the protection and convenience of the public. This model ordinance offers a "menu" of options in certain areas, to allow local officials, hopefully with input from county residents throughout the ordinance development process, to select the options that best fulfill those governmental functions and provide for the public welfare.

This ordinance recognizes, as is provided in KRS § 67.083, that when a county is authorized to regulate in an area which the state also regulates, as is the case for those solar energy systems that fall within the definition of "merchant electric generating facility" under KRS § 278.700 through KRS § 278.718, and the state law prescribes a minimal standard of conduct, that the county ordinance is consistent if it establishes a standard which is the same as or more stringent than the state standard. It is the intent of this ordinance to encourage counties to fully utilize their authority under KRS § 67.083 as determined to be prudent and necessary to advance the public interest.

Explanatory text is provided in footnotes.

¹ This model ordinance is developed by KRC for general use and consideration by the public and by counties that have not adopted local planning and zoning. It is not intended to provide legal advice.

HOW TO USE THIS ORDINANCE

This Ordinance provides the framework for the regulation of the siting, construction, operation, and decommissioning of ground-mounted intermediate and large solar energy systems.

MODEL SOLAR ORDINANCE

Section 1. Purpose And Intent

The purpose and intent of this ordinance is to facilitate the appropriate siting, development, construction, installation, and decommissioning of solar energy systems in [county] in a manner that promotes and protects the safety, health, and welfare of the community. This ordinance encourages the regulation of SESs to bolster local economic development and job creation, avoid and abate public nuisances, and to avoid to the extent possible, minimize and mitigate unavoidable impacts to soils, water, vegetation, and wildlife, including productive and nationally important agricultural lands, forests, endangered species habitat, and historic, natural, and other sensitive lands. The appropriate siting of SESs also establishes standards and requirements to assure that the use and enjoyment of lands located adjacent to and in the proximity of SESs are fully protected.²

In the 2023 amendments to the Electric Generation and Transmission Siting statutes, KRS § 278.700 – KRS § 278.718, the General Assembly expressed a clear understanding that local governments might, through planning and zoning, and through general home rule authority, legislate on matters affecting the siting of “merchant electric generating facilities.” The General Assembly ordered and defined the relationship between the state siting board and local governments in those amendments so that local decisions concerning setbacks, decommissioning plan standards and contents, and performance bond form and amounts, would have “primacy” over corresponding requirements in the state statutes, and would be respected in the state siting process for those solar energy systems (SES) that are also considered “merchant electric generating facilities.” This ordinance is in furtherance of that recognized primary role for local government in the regulation of those aspects of solar energy systems that are also regulated as “merchant” facilities under state law.

The requirements of this Ordinance are intended to be supplemental to any safety, health, or environmental requirements of federal, state, or local laws, and regulations. KRC encourages county governments to utilize the full range of concurrent governmental authority in KRS § 67.083 to assure that the correlative rights of landowners and lessors choosing to host SESs are balanced with those of neighboring land and the larger community, and that the siting,

² A community may wish to incorporate into the solar ordinance, a preference for siting of large ground mounted solar arrays on brownfield properties. EPA’s initiative *RE-Powering American’s Land: Siting Renewable Energy on Potentially Contaminated Lands, Landfills, and Mine Sites*, has tools and resources to help: <https://www.epa.gov/re-powering>. Developing solar on brownfields may involve additional challenges in financing, permitting, and remediation, but may also offer incentives to assist in defraying those costs.

construction, operation, and decommissioning of SES are done in a manner that avoids creation of nuisance conditions affecting the surrounding built and natural environment.

Section 2. Definitions

Solar Energy System (SES) means a device, including its components and subsystems, that collects solar energy for electricity generation, consumption, or transmission, or for thermal applications. SESs are in turn divided into three types:

Integrated Solar Energy System means an SES where the solar materials are incorporated into the building materials, such that the building and solar system are reasonably indistinguishable, or where the solar materials are used in place of traditional building components, such that the SES is structurally an integral part of the house, building, or other structure. An Integrated SES may be incorporated into, among other things, a building façade, skylight, shingles, canopy, light, or parking meter.

Rooftop Solar Energy System means an SES that is structurally mounted to the roof of a house, building, or other structure and does not qualify as an Integrated SES.

Ground Mounted Solar Energy System means an SES that is structurally mounted to the ground and does not qualify as an Integrated SES or a Rooftop SES. Ground Mounted SESs are subcategorized as follows:

- *Small Ground Mounted Solar Energy System (Small SES)* is a Ground Mounted SES with a Footprint of less than 2,500 square feet.
- *Intermediate Ground Mounted Solar Energy System (Intermediate SES)* is a Ground Mounted SES with a Footprint of between 2,501 square feet and ten (10) acres.
- *Large Ground Mounted Solar Energy System (Large SES)* is a Ground Mounted SES with a Footprint of more than ten (10) acres.

Farmland of Statewide Importance means a map unit identified by the Natural Resources Conservation Service as including soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods.

Footprint of the SES is calculated by drawing a perimeter around the outermost SES panels and any equipment necessary for the equipment to function, such as transformers and inverters. The footprint also includes any co-located battery storage, does not include perimeter fencing or visual buffers, nor transmission lines or portions thereof that are required to connect the SES to a utility or customer outside the SES perimeter.

Prime Farmland means a map unit identified by the Natural Resources Conservation Service of the United States Department of Agriculture as having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.

Siting Board Regulated SES means an SES that constitutes a “merchant electric generating facility” under KRS § 278.700(2), the construction and siting of which is subject to review and approval of the Kentucky State Board on Electric Generation and Transmission Siting. A merchant electric generating facility is an electricity generating facility or facilities that, together with all associated structures and facilities, is capable of operating at an aggregate capacity of ten megawatts (10 MW) or more and sell the electricity produced in the wholesale market, at rates and charges not regulated by the Kentucky Public Service Commission.

Section 3. Applicability

(a) This ordinance applies to the siting, construction, installation, operation, and decommissioning of any SES within the jurisdiction of [county] after the effective date of this ordinance.

(b) The following are not subject to this ordinance:

1. Modification to an existing SES that alone or in combination increases the total SES Footprint by no more than 5% of the original Footprint.
2. Routine maintenance and repair, including replacement of solar panels, not increasing the SES Footprint.

(c) The following are not required to obtain a permit for the siting, construction, or operation, and decommissioning of a SES:

1. Integrated Solar Energy System;
2. Rooftop Solar Energy System;
3. Small Ground Mounted Solar Energy System;
4. A SES owned by a municipally owned electric system, or public utility regulated by the Kentucky Public Service Commission or Federal Energy Regulatory Commission.

(d) An SES shall comply with all applicable federal, state, and local laws, regulations, and permitting and other requirements, and applicable building, fire, electrical, and plumbing codes.

Section 4. General Requirements Applicable to Intermediate and Large Ground Mounted SESs

(a) Tree Removal. The removal of trees or natural vegetation shall comply with all the requirements of the [city/county] code regarding tree removal and mitigation, and any applicable state or federal requirements.

(b) Lighting. Lighting of a Ground Mounted SES shall be limited to the minimum necessary for safe operation, and shall be directed downward, incorporate full cut-off features, and incorporate motion sensors where feasible. Lighting shall be designed to avoid light trespass. Nothing in this Ordinance is intended to preclude installation of lighting required by the Federal Aviation Administration.

(c) Height Requirements. The SES shall not exceed twenty (20) feet in height as measured from the highest natural grade below each solar panel without approval by the Fiscal Court. The height restriction excludes utility poles, storage batteries, substation structures, and antennas constructed for the project. The SES may exceed twenty (20) feet in height upon a finding that the SES would be more productive, use less land, or provide other environmental, economic, or other benefits if the height limitation is increased.

(d) Siting Restrictions

1. The SES, measured from the closer of the outer edge of the nearest panel or perimeter fencing, shall be located at least fifty (50) feet from the property line of any property used for residential or agricultural use, at least thirty (30) feet from the property line of any property used for commercial, business, industrial, office, or institutional use, and at least fifty (50) feet from the centerline of any public road.
2. The SES, measured from the closer of the outer edge of the nearest panel or perimeter fencing, shall be located no closer than one hundred (100) feet from a residence located on a property other than that on which the Ground Mounted SES is to be installed.
3. These setback provisions above can be waived in writing by the adjacent property owner to whom the property line or residence setback is applicable.
4. Setbacks are not required where the property line is shared by two or more participating landowners.
5. Setback requirements may be reduced by 25% by the Fiscal Court where effective existing or proposed visual screening is determined to exist.
6. Setback requirements may be expanded by the Fiscal Court as a condition of the Permit if deemed necessary to assure effective screening.³

³ The use of setbacks to protect the correlative rights of landowners, is long established and an effective tool for preventing nuisance conditions and adverse effects on land values and use and enjoyment of

(e) Screening. The SESs shall be effectively screened from residential properties other than that on which the SES is to be constructed. Effective screening may be provided by a visual buffer of natural vegetation, plantings, earth berms, and/or fencing that will provide a visual and lighting screen between the SES and properties used for residential purposes. Existing buffers along an SES perimeter shall be preserved when reasonably practicable.

(f) Protection of Farmland and Revegetation of Disturbed Areas⁴

1. Compaction of soil associated with the location of roads and installation staging areas on land used for agriculture shall be minimized to the extent possible and the soils shall be de-compacted as part of the decommissioning process;
2. Compaction of soil associated with the location of roads and installation staging areas on land used for agriculture classified either as prime farmland or farmland of

(cont') neighboring lands. The statutory setbacks for merchant electric generating facilities in KRS 278.704(2) do not adequately address siting of solar energy systems, since the setbacks as written are measured from wind turbines and exhaust stacks, neither of which apply to ground mounted solar energy systems. In considering a proposal for an intermediate and large ground mounted SES, the Fiscal Court is encouraged to consider whether the specific proposal effectively shields the facilities from adjoining properties, and whether it would interfere with full use and enjoyment of those properties or their value and should adjust the setbacks and screening accordingly.

⁴ KRC believes that the incorporation of solar energy systems of all sizes and types – from roof mounted to integrated to ground mounted systems – into communities can be accomplished provided that those facilities are appropriately sited and respectful of the correlative rights of other property owners. Protection of the productive capacity, current and future, of agricultural lands, is essential to a healthy environment and healthy economy for Kentucky. Expansion of utility-scale solar on agricultural lands should occur only: when the landowner-lessor is fully aware of the costs and benefits associated with the conversion of lands to supporting ground mounted solar systems and voluntarily consents to such siting; when the siting of such systems does not cause adverse off-site impacts to adjoining and nearby property owners; and when enforceable measures are adopted to avoid, minimize, and mitigate unavoidable impacts on agricultural lands during the construction and decommissioning of such systems. Siting of utility-scale solar on agricultural lands designated as prime farmland or farmland of statewide importance should occur only when the use of the lands for ground mounted solar energy systems does not cause permanent damage or loss of productive capability of such lands. KRC also notes that an SES with a decommissioning plan that is consistent with these provisions does not pose the same level or type of risk to agricultural lands as does conversion of agricultural to subdivision or commercial development. SESs are an interim use of land that can be returned to agriculture use at the end of the solar farm's life (typically 25 years) and may provide an alternative income source to more permanent conversion. KRC does not purport to dictate how and if private property owners determine to reasonably allow non-agricultural uses on or conversion of their agricultural lands, but also recognizes that we are all stewards of a finite world for future generations and that permanent conversion and loss of farmland is a concern that spans generations.

statewide importance shall be avoided to the extent possible, and the soils shall be de-compacted as part of the decommissioning process;⁵

3. Upon completion of construction and installation of the SES on land used for agriculture, all temporary roads constructed by the applicant shall be removed, and all disturbed areas shall be graded and reseeded with native⁶ vegetation in order to establish an effective ground cover and to minimize erosion and sedimentation;
4. Unless a signed informed waiver is provided from the landowner and included in the application for a permit, all underground conduit and foundations, and all interconnection facilities other than those owned by a public utility, shall be removed as part of the decommissioning process;
5. Any proposal for an SES on land used for agriculture shall include a plan for enhancing soil health, habitat, water quality, and biodiversity, and shall not utilize nuisance or non-native plant species; and
6. Any proposal for an SES on land used for agriculture shall incorporate location, design, and construction considerations so as to make the proposed SES compatible with continued agricultural use of the land.

(g) Signage. An SES may include such signage as is required by law to provide safety information.

⁵ Other alternatives may be employed to address siting on prime farmland or farmland with statewide importance, to avoid damage to productive farmland. Those include, at one end of the spectrum, a flat prohibition of compaction of such soils, which would cause the arrays to be located on less productive or more marginal agricultural land. Alternatively, “smart solar siting,” such as that advocated by the American Farmland Trust (AFT), can be employed to guide solar development onto land where it has the least impact on agriculture and the environment, and to use innovative design and construction to make solar energy compatible with continued farming. AFT’s [Smart Solar Siting project](#) tackles these issues and provide new resources for communities, organizations, landowners, and farmers to achieve the dual goals of expanding solar energy generation and protecting farmland.

⁶ The use of the phrase “native vegetation” with respect to erosion and sediment control, is not intended to preclude the use of beneficial species incorporated into a project in order to create pollinator habitat. The use of invasive or nuisance species should be prohibited. Information on invasive species is available from the Office of Nature Preserves https://eec.ky.gov/Nature-Preserves/conserving_natural_areas/Pages/Habitat_Mgmt.aspx. Minimizing the time from site disturbance until establishment of an effective ground cover, is the essence of good reclamation. There are companies that have developed seed mixes of Kentucky-native species intended specifically to assist in erosion control and soil stabilization. Cf: Roundstone Native Seed, LLC. <https://roundstoneseed.com/17-erosion-control-mixes>. The Kentucky Native Plant Society maintains a list of Kentucky native plant nurseries. <https://www.knps.org/native-plant-nurseries/>. For communities, landowners, and project proponents seeking to incorporate the creation or enhancement of pollinator habitat into project buffer areas, refer to *Kentucky Pollinator Protection Plan*. https://www.kyagr.com/statevet/documents/OSV_Bee_KY-Pollinator-Pro-Plan.pdf

(h) Decommissioning. Decommissioning shall begin no later than twelve (12) months after an SES has ceased to generate electricity or thermal energy. Except as provided in (f)4, all structures and facilities, including foundations and conduit, associated with the SES shall be removed within six (6) months of the beginning of decommissioning, and the disturbed areas shall be reclaimed, revegetated, and restored. Any SES requiring a decommissioning plan under this ordinance shall comply with the provisions of that plan as approved by the Fiscal Court.

Section 7. Intermediate And Large Solar Energy System Permit Application Requirements, Standards, And Issuance

(a) Intermediate and Large SES shall apply for a permit from the Fiscal Court, which shall be approved by ordinance, by providing the following information and demonstrating that the SES will comply with these requirements:

1. Name, address, telephone number, and email address (if available) of the applicant, the project owner, and the project operator.
2. The address of the property on which the SES will be located and the property owner's name, address, telephone number, and email address if available.
3. Documentation, such as a deed, lease, or other agreement with the landowner, demonstrating the applicant's right to use and control the property.
4. A topographic map that depicts vegetative cover, watersheds, floodplains, and other geographic information about the property and surrounding area.
5. A conceptual description of the project, including the maximum number of modules, mounting type (fixed-tilt or tracking), system height, system capacity, total land area covered by the system, and information about all associated structures or facilities such as transformers, substations, feeder lines, and battery storage.
6. A conceptual site plan including property lines, existing use of the property and all adjacent properties, existing buildings and proposed structures, the proposed location of the solar equipment, transmission lines, any associated structures and facilities, and substations. The conceptual site plan shall also identify existing and proposed temporary or permanent roads, drives, and parking, fencing or other methods to ensure public safety, and a visual buffer plan demonstrating how proposed visual buffers will effectively screen the proposed SES from adjacent properties in residential use.
7. A map from the Natural Resources Conservation Service identifying prime farmland and farmland of statewide importance, and documentation from the U.S. Fish and Wildlife Service regarding the presence of any identified critical habitat for rare or endangered federal or state species. The application shall also contain a Federal Emergency Management Agency map delineating floodplains, shall include evidence

of any water quality or stormwater permit needed for the project,⁷ and shall contain a letter from the State Historic Preservation Office regarding known archaeological or cultural resources listed or eligible for listing on the National Register.

8. Information demonstrating that approval of the SES will not result in any disproportionate individual or cumulative environmental burden on low-income communities or communities of color.
9. A decommissioning plan prepared by a registered professional engineer, and updated every seven (7) years, containing the following:
 - a. The anticipated life of the project and defined conditions upon which decommissioning will be initiated;
 - b. The estimated decommissioning cost, including removal of all structures, foundations, conduit, equipment, and interconnection facilities, and roads, and the salvage value of any equipment in current dollars and the calculations supporting the decommissioning estimate. The estimated salvage value of the material using current, publicly available material indices and/or firm quotes from a decommissioning or recycling company experienced in the decommissioning of SES, shall be provided. The Fiscal Court shall consider the salvage value identified in computing the amount of financial assurance required under subsection e.
 - c. The manner in which the project will be decommissioned, including provision and a timetable for the removal of all structures, foundations, conduit, equipment, and interconnection facilities and for the revegetation and restoration of the property to its original condition;
 - d. The party responsible for decommissioning;
 - e. A performance bond, letter of credit, or other financial assurance payable to the Fiscal Court, sufficient to cover the net costs identified in subsection 9b and to assure that decommissioning of the site can be achieved by a third party in the event that a permittee defaults in that obligation, which financial assurance shall be provided prior to commencement of construction; and
 - f. A copy of any lease containing specific agreements regarding decommissioning with the landowner.

⁷ The “evidence” contemplated by the ordinance could be a copy of the water quality or stormwater permit obtained from the appropriate state agency, or documentation that the agency has indicated that such a permit is not required; or could be a notation that such a permit is required and will be applied for prior to any disturbance of the land associated with the project.

10. Proof of adequate casualty and liability insurance covering installation and operation of the SES;
11. A description of the measures that will be taken to minimize erosion and sedimentation, and to promptly stabilize and revegetate disturbed areas with native vegetation.⁸
12. If the SES will include a battery energy storage system (BESS), the application shall include a hazard assessment regarding potential risks associated with the proposed battery storage. The assessment shall include a demonstration of how the BESS will conform to all applicable fire and electric codes, including *NFPA 1: Fire Code*, *NFPA 70: National Electric Code*, *NFPA 855: Standard for the Installation of Stationary Energy Storage Systems*.
13. Where the applicant for a Permit is also seeking a construction certification pursuant to KRS § 278.700 – 278.716, the applicant may submit a copy of a complete state siting board application and site assessment report meeting the requirements of KRS § 278.706 and § 278.708 in lieu of the above requirements of Section 7(a)1-7.

(b) KRS § 278.704 provides that requirements adopted by local governments for decommissioning plans and decommissioning bonds have primacy over the requirements of KRS § 278.706(2)(m). While KRS § 278.706(2)(m)2. requires that below-ground foundations and components be removed to a depth of three feet below grade unless the landowner and facility agree to a different depth, it is the intent of [county] that subsection (a)9b. and c. be construed to require **all** below-ground foundations and components be removed, unless a written waiver issued after the effective date of the enactment of this ordinance is executed by the landowner / lessor agreeing to removal of such foundations and components to a three-foot depth limit for such removal. Such documentation shall be provided to the Fiscal Court as part of the application for a permit.

(c) KRS § 278.704 provides that requirements adopted by local governments for decommissioning plans and decommissioning bonds have primacy over the requirements of KRS § 278.706(2)(m). While KRS § 278.706(2)(m)4. allows that after decommissioning, any interconnection or other facilities may be left behind unless the landowner specifically requests otherwise, it is the intent of [county] that subsection (a)9b. and c. be construed to require all interconnection facilities associated with the SES, other than those owned by a public utility, be removed, unless a written waiver issued after the effective date of the enactment of this ordinance is executed by the landowner / lessor allowing interconnection and other facilities to remain after completion of decommissioning. Such documentation shall be provided to the Fiscal Court as part of the application for a permit.

(d) All height restrictions, lighting, farmland conservation, setback, and other requirements for siting, construction, operation, and decommissioning of an Intermediate or Large Ground

⁸ See Footnote 10.

Mounted SES shall be applicable to any battery energy storage system (BESS) proposed to be sited and located in conjunction with the SES.

(e) A Permit shall require compliance with all applicable requirements of Sections 6 and 7 of this Ordinance, and any additional conditions deemed by the Fiscal Court to be necessary or appropriate pursuant to KRS § 100.237 to protect public health, safety, and general welfare.

Section 8. Public Notice and Public Comment

Public notice of an application for a Permit for an SES shall conform to the public notice requirements generally applicable to notices relating to adoption of ordinances. The public notice and hearing requirements of this Chapter shall be in addition to and independent of any local hearing conducted pursuant to KRS § 278.712.