

**COMMONWEALTH OF KENTUCKY
COUNTY OF HENDERSON**

ORDINANCE NUMBER 24-06

*** **

**ORDINANCE AMENDING THE HENDERSON COUNTY ZONING ORDINANCE
(FOUND IN THE HENDERSON COUNTY CODE OF ORDINANCES IN APPENDIX A
THEREOF) ESTABLISHING A NEW ARTICLE (ARTICLE XXXII) REGARDING
BATTERY ENERGY STORAGE SYSTEMS (BESS) AND ESTABLISHING
STANDARDS AND REQUIREMENTS THEREFORE**

WHEREAS, Chapter 100 of the Kentucky Revised Statutes provides for the adoption of zoning text and maps as well as providing for amendments; and

WHEREAS, the County of Henderson and the Henderson City-County Planning Commission having recognized the need for zoning regulations that promote the public health, safety, morals and general welfare of the community, and facilitate orderly and harmonious development and the visual character of the community, by enacting and amending the Henderson County Code of Ordinances Appendix A – Zoning, which is incorporated into said Code; and

WHEREAS, the Henderson Fiscal Court previously generated proposed text pursuant to KRS 100.211 and other applicable law and forwarded said text to the Henderson City-County Planning Commission for hearing; and

WHEREAS, the Henderson City-County Planning Commission conducted a public hearing thereon on Tuesday July 2, 2024 and the Commission recommended the amended language provided herein; and

WHEREAS, the Henderson Fiscal Court deems it in the best interest of Henderson County to establish design standards and requirements for battery energy storage systems (hereinafter “BESS”) by adopting the recommendations of the the Henderson City-County Planning Commission.

NOW, THEREFORE, BE IT ORDAINED and ENACTED by the Fiscal Court of the County of Henderson, of the Commonwealth of Kentucky, as follows:

1. Appendix A – Zoning of the Code of Ordinances of Henderson County, Kentucky is amended to include a new article, numbered Article XXXII which shall read as follows:

ARTICLE XXXII. BATTERY ENERGY STORAGE SYSTEMS (BESS)

Battery energy storage systems.

32.01. Definitions.

ANSI. American National Standards Institute.

Battery/batteries. A single cell or a group of cells connected together electrically in series, in parallel, or a combination of both, which can charge, discharge, and store energy electrochemically. For the purpose of this chapter, batteries utilized in consumer products are excluded from these requirements.

Battery energy storage management system. An electronic system that protects energy storage systems from operating outside their safe operating parameters and disconnects electrical power to the energy storage system or places it in a safe condition if potentially hazardous temperatures or other conditions are detected.

Battery energy storage system (BESS). One (1) or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a stand-alone 12-volt car battery or an electric motor vehicle. A battery energy storage system is classified as a Tier 1 or Tier 2 Battery Energy Storage System as follows:

- A. Tier 1 Battery Energy Storage Systems have an aggregate energy capacity less than or equal to six hundred (600) kWh and, if in a room or enclosed area, consist of only a single energy storage system technology.
- B. Tier 2 Battery Energy Storage Systems have an aggregate energy capacity greater than six hundred (600) kWh or are comprised of more than one (1) storage battery technology in a room or enclosed area.

Commissioning. A systematic process that provides documented confirmation that a battery energy storage system functions according to the intended design criteria and complies with applicable code requirements.

Dedicated-use building. A building that is built for the primary intention of housing battery energy storage system equipment, is classified as Group F-1 occupancy¹ as defined in the International Building Code, and it complies with the following:

- (1) The building's only permitted primary use is for battery energy storage, energy generation, and other electrical grid-related operations.
- (2) Occupants in the rooms and areas containing battery energy storage systems are limited to personnel that operate, maintain, service, test, and repair the battery energy storage system and other energy systems.
- (3) No other occupancy types are permitted in the building.
- (4) Administrative and support personnel are permitted in incidental-use areas within the buildings that do not contain battery energy storage system, provided the following:
 - a. The areas do not occupy more than ten (10) percent of the building area of the story in which they are located.

- b. A means of egress is provided from the incidental-use areas to a public way that does not require occupants to traverse through areas containing battery energy storage systems or other energy systems.

Nationally recognized testing laboratory (NRTL). A U.S. Department of Labor designation recognizing a private sector organization to perform certification for certain products to ensure that they meet the requirements of both the construction and general industry OSHA electrical standards.

NEC. National Electric Code.

NFPA. National Fire Protection Association.

Participating property. A battery energy storage system host property or any real property that is the subject of an agreement that provides for the payment of monetary compensation to the landowner from the battery energy storage system owner (or affiliate) regardless of whether any part of a battery energy storage system is constructed on the property.

UL. Underwriters Laboratory, an accredited standards developer in the US.

Uniform Code. Kentucky Building Code.

32.02 Applicability.

- A. The requirements of this shall apply to all battery energy storage systems permitted, installed, or modified in Henderson County after the effective date of this chapter, excluding general maintenance and repair.
- B. Battery energy storage systems constructed or installed prior to the effective date of this chapter shall not be required to meet the requirements of this chapter.
- C. Modifications to, retrofits or replacements of an existing battery energy storage system that increase the total battery energy storage system designed discharge duration or power rating shall be subject to this chapter.

32.03 Zoning.

- A. Tier 1 Battery Energy Storage Systems are permitted in all zoning districts.
- B. Tier 2 Battery Energy Storage Systems are a conditional use to in Zone M-2, Heavy Industrial, described in Appendix A, Article XXI of the Henderson County Code of Ordinances.
- C. All Tier 2 Battery Energy Storage Systems' conditional use public notice as required under KRS 100.237(6) will be provided to adjoining property owners as well as every property owner within a one-mile radius of the proposed location of the system. Applicant shall be responsible for all postage costs for mailed notices.
- D. Tier 2 Battery Energy Storage Systems are to be housed in stationary storage battery containers that meet NFPA 855 standards. In addition, there must be an addressable building on site.
- E. The energy storage system shall be tested in accordance with the UL 9540A testing method and be UL 9540 certified.

32.04 General requirements.

- A. A building permit and an electrical permit shall be required for installation of all battery energy storage systems.
- B. All battery use/storage buildings and all other buildings or structures that:

- (1) Contain or are otherwise associated with a battery energy storage system; and
 - (2) Subject to any and all applicable building and electrical codes including but not limited to Kentucky Building Code (KBC), National Electrical Code (NEC), NFPA 13, and International Mechanical Code (IMC); and
 - (3) Subject to all current and future applicable NFPA standards, including a fire safety plan; and
 - (4) Where required by the Kentucky State Fire Marshall Hazardous Materials division, a technical opinion and report complying with all current and future applicable NFPA standards shall be prepared to evaluate the fire and explosion risks associated with the indoor storage area and to make recommendations for fire and explosion protection. The report shall also be submitted to the Volunteer Fire Department chief in whose district a BESS project is proposed. The opinions and reports shall require the approval of the State Building Codes Inspector and the fire chief (or his/her designee's) approval prior to issuance of a permit. The technical opinion and report shall specifically evaluate the following:
 - a. The potential for deflagration of flammable gases released during a thermal runaway event.
 - b. The basis of design for an automatic sprinkler system or other approved fire suppression system. Such design basis shall reference relevant full-scale fire testing or another approved method of demonstrating sufficiency of the recommended design.
 - c. The provision by the applicant of strategies, training and equipment for local first responders and plans for ongoing hazard containment utilizing contractors or in-house emergency response teams funded and directed by the applicant.
 - d. Any other questions or requirements specified by the VFD chief (or his/her designee) in whose district a BESS project is proposed, or by the State Building Codes Inspector.
- C. *Site plan.* A site plan must be submitted to the Henderson City-County Planning Commission for approval by the Henderson City-County Planning Commission will be required. The submittal shall include:
- (1) An engineered site plan with related construction drawings.
 - (2) Site plan checklist, application, and applicable fees.
 - (3) Commissioning plan.
 - (4) Fire safety compliance plan.
 - (5) System and property operations and maintenance manual.
 - (6) Decommissioning plan.
- A decommissioning bond set by, and administered through, the Henderson City-County Planning Commission will be required before any permits are issued for this project.
- D. *Monitoring.* Provide for gas and fire detection certified monitoring twenty-four (24) hours a day as provided for in NFPA 72.
- E. *Utility lines and electrical circuitry.* All on-site utility lines shall be placed underground to the extent feasible and as permitted by the serving utility, with the exception of the main service connection at the utility company right-of-way and any new interconnection equipment, including without limitation any poles, with new easements and right-of-way.

- F. *Signage.*
1. The signage shall be in compliance with ANSI 2535 and shall include the type of technology associated with the battery energy storage systems, including the type of battery energy storage system, any special hazards associated, the type of suppression system installed in the area of battery energy storage systems, and twenty-four-hour emergency contact information, including reach-back phone number, and all such information must be updated with any change in the storage systems.
 2. As required by the NEC, disconnect and other emergency shutoff information shall be clearly displayed on a light reflective surface. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations.
- G. *Lighting.* Lighting of the battery energy storage systems shall be limited to that minimally required for safety and operational purposes and shall be reasonably shielded and downcast from abutting properties.
- H. *Vegetation and tree-cutting.* Areas within thirty (30) feet on each side of Tier 2 Battery Energy Storage Systems shall be cleared of combustible vegetation and other combustible growth. Single specimens of trees, shrubbery, or cultivated ground cover such as green grass, ivy, succulents, or similar plants used as ground covers shall be permitted to be exempt provided that they do not form a means of readily transmitting fire. Removal of trees should be minimized to the extent possible.
- I. *Noise.* The one-hour average noise generated from the battery energy storage systems, components, and associated ancillary equipment shall not exceed a noise level of fifty (50) dBA during the day and forty-five (45) dBA during the night, measured twenty-five (25) feet from the facade of any residence or occupied community building, existing or under construction at the time of the permit application, within a third of a mile radius from the BESS. If the sound from any source from the structure exhibits a tonal prominence, then the respective noise limit shall be reduced by five (5) dBA. Applicants may submit equipment and component manufacturers noise ratings to demonstrate if any source exhibits tonal prominence as measured from the residence or occupied community building. The applicant may be required to provide operating sound pressure level measurements from one (1) or more neighboring residences, within reason, to demonstrate compliance with this standard following system commissioning.
- J. *Screening.* All Tier 2 Battery Energy Storage Systems shall be screened with a seven-foot tall fence and, to the extent reasonably practicable, a visual buffer that provides reasonable screening to reduce the view of the battery energy storage system from residential dwelling units on adjacent lots (including those lots located across a public right-of-way). A vegetation screening plan to reduce the view of the battery energy storage system from residential dwelling units on adjacent lots will be submitted for approval by the Henderson City-County Planning Commission. The existing natural tree growth and natural land forms along the battery energy storage system perimeter may create a sufficient buffer and shall be preserved when reasonably practicable. When no alternative vegetation screening plan is approved by the Henderson City-County Planning Commission, a double row of staggered evergreen trees will be planted fifteen (15) feet on center from adjacent nonparticipating residential dwellings including the outdoor living space immediately near residential dwellings. Parcel boundaries with no proximity to residential dwellings shall not require screening. The proposed evergreen trees shall be placed on the exterior of security fencing. The use of barbed wire or sharp pointed fences shall be prohibited in or along any boundary adjoining residential properties.

32.05. Decommissioning and site reclamation plan.

1. The project owner and/or their designee/subcontractor will engage a licensed battery recycling location to arrange for the disposal of the batteries by applicable state and federal regulations.
2. Permits, certifications, and training are required for decommissioning personnel all at the project owner's expense.
3. The project owner and/or their designee/subcontractor will ensure that all personnel on-site during the decommissioning process have received a site-specific safety briefing and know all electrical shock and arc flash risks, mainly when working within the battery containers. Hazmat training will be conducted for all personnel handling lithium-ion batteries during the process, subject to their job function per all federal, state, and local regulations. Only qualified electricians will be utilized to disconnect and remove battery modules from individual battery racks. As a handler (and storage) of universal waste, the project owner and/or their designee/subcontractor shall have an EPA identification number as required by 40 CFR 273.32 or applicable regulation. Additionally, lithium-ion batteries are classified by the US Department of Transportation (DOT) as Class 9 hazardous materials. All packaging, labeling, and transportation requirements in the Code of Federal Regulations, Title 49, Subchapter C, Parts 171—180, will be followed.

State of charge at decommissioning.

The battery facility will be fully discharged to the minimum charge required for removal and safe transportation as per battery manufacturer specifications. The facility battery management system (BMS) will validate such charge via remote telemetry. Following this validation, the DC disconnect switch for each battery container will be opened and locked out for the remainder of the decommissioning process to ensure no additional charging occurs. If the batteries are reused, the project will follow the manufacturer's instructions regarding the depth of discharge to prevent cell damage.

Individual battery removal process.

1. Battery modules are anticipated to be removed from their racks, repackaged on-site, and shipped to a regional recycling hub. No disassembly of battery modules will be required on-site, and the battery terminals will be taped off and protected to avoid a shortfall during packaging and shipping. The project owner or their subcontractor shall also ensure 49 CFR section 173.185 addressing the transportation of lithium cells or batteries for disposal or recycling, or applicable regulations, are adhered to, including applicable packaging requirements and hazard communication. In the event of any breakage or damage to individual battery modules, such modules will be placed in separate, nonmetallic inner packaging that completely encloses the cell and will utilize inner packaging that is surrounded by cushioning material that is noncombustible, electrically nonconductive, and absorbent. Such internal packaging shall be placed in an outer packaging that meets applicable requirements of CFR part 178, subparts L, M, P, and Q, or applicable regulations, with proper marking denoting the package containing a damaged/defective lithium-ion battery. In all cases, the project owner, or their subcontractor, as appropriate, shall comply with all applicable, EPA, OSHA, security, safety, and health requirements during the removal and decommissioning.

BESS HVAC, fire suppression system, power conversion system, and transformer removal process.

1. *BESS HVAC and fire suppression system equipment:* The refrigerant/coolant from INAC units will be collected into separate containers on-site per the code and industry standard practice. The coolant can be reused after processing. The HVAC units and other recycling materials will be sent to the metal

recyclers. Similarly, all fire suppression units will be cleared of the suppression fluids and sent to the suppliers for reuse following the industry standard practice.

2. *Inverters, transformers, and ancillary equipment:* All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, consistent with applicable regulations and industry standards.
3. Gravel aggregate will be removed and shipped from the project site to be reused, sold, or disposed of appropriately, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. All internal service roads are constructed with geotextile fabric and eight (8) inches of aggregate over compacted subgrade. All pile foundations will be pulled out completely. Underground cables and duct banks will be removed to a depth of four (4) feet. Topsoil will be reapplied to the disturbed area. Soil and topsoil will be de-compacted, and the site will be restored to the pre-construction condition and re-vegetated.
4. *Equipment foundation and pads:* The project's foundations are assumed to be concrete pads. All unexcavated areas compacted by equipment used in decommissioning will be de-compacted to adequately restore the topsoil and sub-grade material to a density like the surrounding soils. All materials will be removed from the site and disposed of appropriately, consistent with applicable regulations and industry standards.
5. *Fence:* All fence parts and foundations will be removed from the site, consistent with applicable regulations and industry standards. The surrounding areas will be restored to pre-developed conditions to the extent practical.
6. *Access roads:* Facility access roads, including entrances, will be used for decommissioning purposes, after which removal of roads will be discussed with the county engineer and the applicable landowner, using the following process:
 - a. After final clean-up, roads, and entrances may be left intact through mutual agreement of the applicable landowner, the project owner, and the county engineer unless otherwise restricted by federal, state, or local regulations.
 - b. If any roads and entrances are to be removed, aggregate will be removed and shipped from the project site to be reused, sold, or disposed of appropriately, consistent with applicable regulations and industry standards. Any ditch crossing connecting access roads to public roads will be removed unless the relevant landowner requests it remains. The subgrade will be de-compacted using a chisel plow or appropriate subsoiling equipment. All large rocks will be removed. The access roads and the adjacent regions compacted by the equipment will be de-compacted.
7. *Substation:* All steel framing, conductors, switchgear, transformer, security fence, and other facility components will be disassembled and recycled or reused off-site. Foundations and underground components will be removed up to a depth of four (4) feet or any applicable regulation. The rock base will be removed, and the material will be hauled from the site to be recycled or disposed of at an off-site facility. Permanent stormwater treatment facilities like retention basins will be removed and graded to blend with the surrounding topography to promote pre-construction drainage patterns. Topsoil will be reapplied to the disturbed area. Soil and topsoil will be de-compacted, and the site will be restored to the pre-construction condition and re-vegetated.

Restoration/reclamation of site.

1. The project owner will restore and reclaim the site to the pre-development state, ready for farming conditions consistent with applicable laws, rules, regulations, and lease agreements. The goal of restoration will be to restore natural hydrology and plant communities (nonagricultural related) to the greatest extent practicable while minimizing new disturbance. During the operating phase of the project, the areas not hard-surfaced will be vegetated with native grasses and forbs and pollinator-friendly vegetation. This vegetation will rebuild soil health during the operating phase of the project. The vegetation is expected to withstand the decommissioning of the site, and only a minor effort will be required to restore the site to a pre-developed state. The decommissioning effort will implement best management practices ("BJ.1Ps") to minimize erosion and to contain sediment on the project site to the extent practicable. The BMPs are anticipated to include:
 - a. Minimizing new disturbance and removing native vegetation to the greatest extent practicable during decommissioning.
 - b. Removing equipment and access roads up to full depth, backfill with native subgrade material, and cover with suitable topsoil to allow adequate root penetration for plants and so that subsurface structures do not substantially disrupt groundwater movements.
 - c. Stabilizing soils and returning them to agricultural use, such as decompacting the soil, according to landowner direction.
 - d. Installing erosion and sediment control measures, such as silt fences, bio-rolls, and ditch checks in all disturbance areas where the potential for erosion and sediment transport exists, consistent with stormwater management objectives and requirements during and after decommissioning activities.
 - e. Remediating any petroleum product leaks and chemical releases before completion of decommissioning.
 - f. Decommissioning and restoration activities at each site will be completed within twelve (12) months. Specifically, following a continuous one-year period in which no electricity is generated, or if substantial action on the project is discontinued for one (1) year ("pre-decommissioning period"), the project owner will have one (1) year to complete decommissioning of the project. The project owner will notify the Henderson City-County Planning Commission at least thirty (30) days before the conclusion of the pre-decommissioning period.

Post-restoration monitoring and environmental studies.

1. Decommissioning of the project site will comply with all federal, state, and local regulations. Decommissioning may include post-restoration monitoring as required by the NPDES/SDS CSW permit, SWPPP, and other applicable requirements. In addition, the project owner's field representative assigned to decommissioning monitoring will contact the applicable landowners, including onsite check-ins and site walk-downs for any flown debris to the neighboring properties until the NPDES/ SDS CSW permit is closed.

Estimated net decommissioning costs and financial assurance.

1. The reclamation bond estimate uses current pricing for removing components and is based on three (3) years of degradation and depreciation of the modules. Due to construction techniques and technology changes, subsequent revisions to the decommissioning plan and cost estimate will be required. The mechanism for calculating the adjusted costs over the project's life will be based on updating the cost estimates for the decommissioning and restoration of the project site. The analysis used to revise the forecast will be like the one used to prepare this estimate. An engineering evaluation of the current

construction techniques and equipment used for decommissioning will be performed, and the cost estimate will be revised to reflect any changes in productivity resulting from new techniques, equipment, and inflation. The required financial assurance will be updated every three (3) years.

2. The recycling costs will be updated bi-annually to reflect the industry standard values.
3. The decommissioning plan will be updated every three (3) years and will be audited.
4. The decommissioning estimate has been prepared under the responsible supervision of a third-party certified professional.

2. All or parts of Ordinances in conflict herein are repealed to the extent of such conflict.

3. The provisions of this ordinance are severable and, if any provisions or part thereof shall be held invalid or unconstitutional or inapplicable to any person or circumstance, such invalidity, unconstitutionality, or inapplicability shall not affect or impair the remaining provisions of this ordinance.

4. This Ordinance shall become effective upon its passage and advertisement according to law.

On first reading of the foregoing Ordinance, it was moved by Magistrate Starks, seconded by Magistrate Puttman, that the Ordinance be adopted on its first reading.

WHEREUPON, the vote was called.

Upon roll call the vote stood:

Magistrate Berry	Aye
Magistrate Southard	Aye
Magistrate Tompkins	Aye
Magistrate Puttman	Aye
Magistrate Starks	Aye

WHEREUPON, County Judge-Executive Brad Schneider declared the Ordinance adopted on its first reading and ordered that the same be published in summary form and presented for second reading on August 27, 2024, at the regular meeting of Fiscal Court.

On second reading of the foregoing Ordinance, it was moved by Magistrate Tompkins, seconded by Magistrate Puttman, that the Ordinance be adopted.

WHEREUPON, the vote was called.

Upon roll call the vote stood:

Magistrate Berry	Aye
Magistrate Southard	Aye
Magistrate Tompkins	Aye
Magistrate Puttman	Aye
Magistrate Starks	Aye

WHEREUPON, County Judge-Executive Brad Schneider declared the Ordinance adopted on its second reading, affixed his signature and the date thereto and declared that the same be recorded.

APPROVED this the 27th day of August, 2024.

ATTEST:

Brad Schneider
Henderson County Judge-Executive

Angela Comer
Henderson Fiscal Court Clerk