

INDIANA RENEWABLE ENERGY

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Battery Storage Ordinances in Indiana

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July 2026

INTRODUCTION

Battery Energy Storage Systems (BESS) projects have increased over the last decade to store energy from various generation sources. Lithium-ion batteries are used to convert energy from generation sources, store it, and ultimately discharge it to the electrical grid based on energy demand. This process and technology are useful in leveling electricity costs and sustaining grid reliability when paired with energy generation, as they limit the need to constantly generate energy for consumption (U.S. Energy Information Administration, 2025). Indiana Code 22-14-8 defines utility-scale BESS as “an energy system (as defined in National Fire Protection Association 855) that is capable of storing and releasing more than one megawatt of electrical energy for a minimum of one hour using an AC inverter and DC storage” (Indiana Code 22-14-8). In March 2025, it was estimated that there are approximately 225 megawatts (MW) of BESS installed in Indiana. This is expected to grow to around 2,700 MW by 2035 (Exeter, 2025). BESS projects in Indiana are permitted from a safety perspective by the Indiana Department of Homeland Security and must adhere to the “Standard for the Installation of Stationary Energy Storage Systems as adopted by the National Fire Protection Association” also known as NFPA 855 (IC 22-14-8). BESS that is not under the jurisdiction of the Indiana Utility Regulatory Commission would also fall under the local jurisdiction’s planning and zoning regulations. As this technology has become more prevalent, Indiana counties have begun to consider how to regulate BESS as a land use. Eighty-two of Indiana’s 92 counties (89.1%) regulate land use development through the adoption of planning and zoning.

Planning and zoning are implemented by the planning department staff, plan commission, board of zoning appeals (BZA), and legislative body. The plan commission is primarily

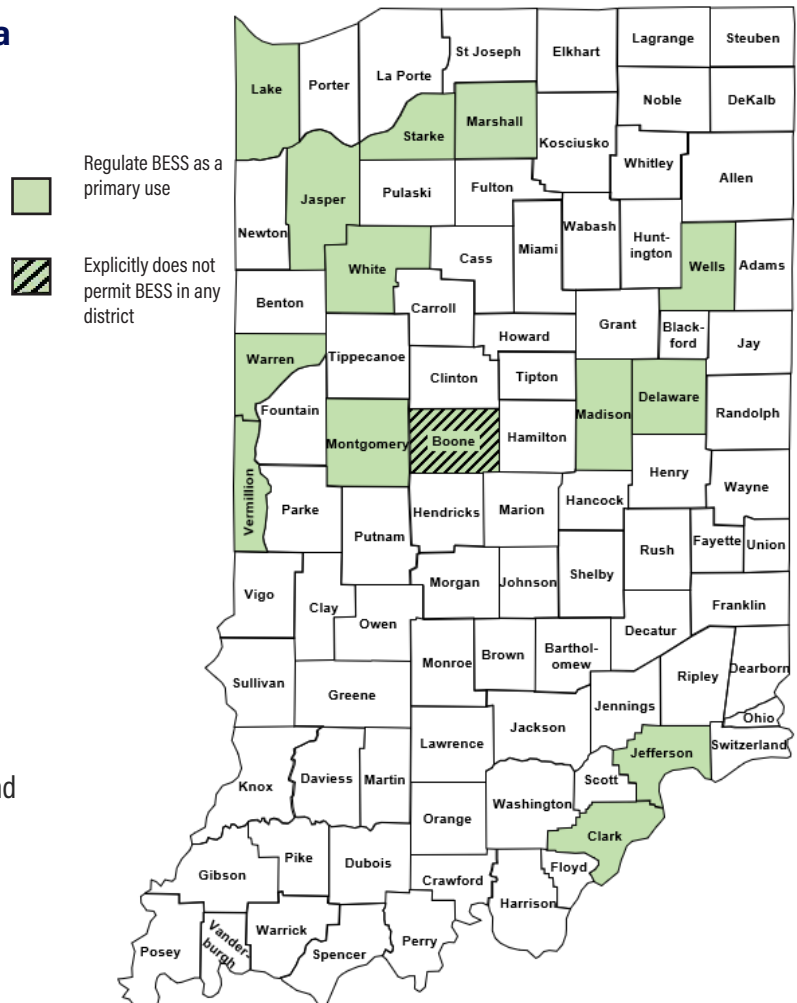


Figure 1: Counties that regulate BESS as a primary use in their zoning ordinance

responsible for the development of and proposing changes to the comprehensive plan and zoning and subdivision ordinances. The commission makes recommendations to the legislative body who adopts the plan, ordinances and any amendments (Reitz & Ternet, 2017). The county commissioners serve as the legislative body for county government with the exception of St. Joseph and Lake counties where the county council serves as the legislative body.¹ The BZA is a quasi-judicial body hearing special exceptions², variances and appeals from staff decisions. (Burbrink, 2018). Planning department staff manage day-to-day operations of the planning such as reviewing petitions and preparing staff reports (Reitz & Ternet).



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1 Marion County has a consolidated city-county government and is not included in this report.

2 Special exceptions may also be called conditional uses or special uses.

METHODOLOGY

BESS ordinances were collected as part of the 2025 Renewable Energy Ordinance Inventory and Community Needs Assessment project. Electronic surveys were sent to 82 contacts of Indiana county planning departments in the summer of 2025. There were 45 responses, with a response rate of 54.9%. Some ordinances were collected directly via the survey, either through a web link or by file upload. Ordinances were also collected through direct county contacts and websites throughout the winter and spring of 2026 until ordinances had been collected for all 82 counties with planning or zoning, or it had been verified through the survey or direct contact that the county did not have renewable energy standards in their zoning ordinance. In total, 76 ordinances were collected. A methodology similar to that of Ebner et al. (2015) and Ogle & Salazar (2022) was used to categorize the review and approval methods for BESS, as well as for commercial solar energy systems and commercial wind energy conversion systems. Within each category, county ordinance language regulating utility-scale BESS was compared. These categories include:

- Definitions
- Districts and approval process
- Setbacks
- Other use standards
- Plans and studies required

Of the 82 counties with planning and zoning in Indiana, this study identified 14 counties (17.1%) that regulated BESS as a primary use (Figure 1). Boone County explicitly does not permit BESS in any district. The zoning regulations for the other 13 counties are summarized below. All 14 counties adopted or amended their BESS standards between 2024 and 2026.

BESS USE DEFINITIONS

Counties can define utility-scale BESS in their ordinance. This definition drives what scale of BESS is regulated and how. Like the definition in Indiana state code, four counties include energy storage capacity in their definitions. Jasper County uses the definition from the state code. Three counties, Clark,

Jefferson and Marshall, define and regulate multiple tiers of BESS based on the energy storage capacity. Clark and Jefferson consider an aggregate energy capacity greater than 600kWh to be Tier 2 (the larger of their two tiers), while Marshall specifies Tier 2 as anything over 100 kW.

Many counties, like utility-scale solar and wind, define utility-scale BESS by its interaction with the grid (Ogle & Salazar, 2022). For example, Montgomery County's definition reads, "one or more electrochemical devices that charge, or collect, energy from the grid or a generation facility, store that energy, and then discharge that energy at a later time to provide electricity or other grid services."

ZONING DISTRICTS AND APPROVAL METHODS

In Indiana, zoning ordinances classify land uses as permitted by right, by special exception, or not permitted in a particular zoning district. Zoning districts are geographic areas defined by the zoning ordinance with land use regulations and standards that allow for communities to determine where and how different types of development occur. Uses that are permitted by right must still comply with the zoning district standards and any use-specific standards. Special exceptions, also referred to as special use and sometimes as conditional use, are decided by the Board of Zoning Appeals (BZA) after a public hearing. When a use is not permitted in the specific zoning district that applies to the project site but is allowed in another district, the applicant can file an amendment to the zoning map, commonly referred to as a rezoning. This process would include the plan commission holding a public hearing and voting on whether or not to recommend the amendment to the zoning map. The legislative body would make the final decision on the amendment. Overlay districts are another tool commonly used to regulate renewable energy. An overlay district for solar can be placed over the existing (or base) district, allowing BESS with additional standards. Uses that are permitted in the base district would continue to be permitted under the base district's standards. This process also requires an amendment to the zoning map, with the exception that the base district stays in place. Additionally, in counties with an advisory plan commission, an applicant can file for a use variance with the BZA, which can allow a land use that is not permitted, and would include a public hearing (IC 36-7-4-918.4).

Table 1 shows the processes required to place utility-scale BESS on land currently zoned agricultural in Indiana. Delaware, Jasper, Starke, Vermillion and Warren (38.5%) permit BESS in a general agricultural district by special exception. Clark, Jefferson, Madison, Marshall and White (38.5%) permit only in industrial or high impact districts. As BESS projects are developed on significantly less land than utility-scale solar projects, they may be able to be located on a parcel already zoned industrial, but would likely require a rezoning or a change to the zoning map if located in a rural area. In addition to a potential rezoning process, BESS in four of these counties, Clark, Jefferson, Madison, and White, would have to seek a special exception before the BZA. BESS in Marshall County is permitted by right in industrial districts. Lake, Montgomery and Wells counties use a specialized zoning district that is highly likely to require rezoning. Lake County permits BESS by right in its conditional development district. Montgomery and Wells counties use overlay districts. Counties may also require a development plan review, as permitted under the Indiana Code (IC 36-7-4-1400). Three of the counties, Delaware, Madison and Montgomery, require a development plan process.

Table 1: Process requirements for locating BESS in an agricultural zone	
	Number of Counties
Special Exception	5
Rezoning or amendment to the zoning map	4
Rezoning with special exception	4

DEVELOPMENT STANDARDS

BESS projects must meet the zoning district standards of the zoning district in which they are proposed and any additional use standards specific to utility-scale BESS. Some common development standards include setbacks and height restrictions. If a project does not meet the established standards, they can petition the BZA for a variance from development standards. The BZA would hold a public hearing and then approve or deny the variance petition based on whether it meets the criteria set by IC 36-7-4-918.5.

This section looks at the use standards counties have set specifically for utility-scale BESS.

Setbacks

Setbacks are a common development standard used to reduce conflict between land uses by creating space. Setbacks are a minimum required distance a use must be located from a right-of-way or property line, as well as from municipalities and other specified uses or districts. When comparing setbacks between counties, it is important to keep in mind that each county may measure differently. Some may include fencing in the required setback, while others do not. Some may measure to a non-participating residence's property line, dwelling or closest accessory use. The county may have recorded rights-of-way or use right-of-way apparent or the centerline of the road if there is no recorded right-of-way. This analysis is meant to provide a general idea of how counties are regulating BESS through setbacks.

In Indiana, six of the 13 counties (46.2%) require a setback from the right-of-way ranging from 30 to 2000 feet, with a mean of 438 feet and a median of 125 feet. Eight counties require setbacks from the property line ranging from 50 to 2000 feet, with a mean of 709 feet and a median of 400 feet. This does not necessarily paint an accurate picture of the average required setback from property lines in BESS, since projects in counties without a BESS-specific setback would still need to adhere to the district setbacks. Adding the highest side or rear property line setback in the least restrictive district for the seven counties³ that do not have BESS-specific property line setbacks brings the property line setback range to 10-2000 feet with a mean of 483 feet and a median of 250 feet (30-40% lower than only BESS-specific property line setbacks).

The most common setback from another use is non-participating residences. Seven of the 13 counties (53.8%) have setbacks from non-participating residences ranging from 300 to 2000 feet, with a mean of 920 feet and a median of 500 feet. Other common setbacks include educational and religious institutions (3 counties, 21.4%). White County is the only county that has a setback from municipalities (2 miles) while Marshall County requires a specified distance between BESS units (20 feet side-to-side and 12 feet end-to-end).

3 District setbacks could not be located for Wells county's Power Plant Overlay district.

Screening and Fencing

Fencing provides security as well as a physical barrier between BESS and the neighboring use that can help mitigate noise levels and visual impact. In Indiana, nine of the counties (69.2%) have some form of fencing standards. This may include minimum, maximum, or exact height (9 counties, 69.2%), material requirements (4 counties, 30.8%), or material prohibitions (5 counties, 38.5 %). Minimum or exact fencing height requirements range from six to eight feet, while Warren and White counties require a maximum of 10 feet. Delaware County requires the fence to be as tall as the BESS unit. Fencing material commonly prohibited includes barbed and razor wire. However, Starke County requires a chain-link fence with three strands of barbed wire.

Screening in the form of a landscape buffer, an earthen berm, or an opaque fence provides greater mitigation of visual impact, as long as it blends with the current surroundings. An opaque fence or atypical landscaping can create more visual attraction in a rural setting. Five of the 13 counties (38.5%) require some sort of screening. Marshall and Warren counties do not require screening and explicitly do not permit combustible vegetation within 20 feet of the fence or unit, respectively.

Height

Maximum height is a common standard for zoning districts, and seven counties (53.8%) specify a maximum height for BESS. These range from 10 to 35 feet with a mean of 19 feet and a median of 20 feet. While BESS modules are often around eight feet in height, additional equipment or stacking of modules could increase overall height (Conzen et al., 2023). Vermillion County also places a height limit on the pad or skid the unit is mounted to at a maximum of three feet above grade.

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Other Standards

Counties often require that the BESS comply with applicable state or NFPA codes, require warning signage, and may specify that wiring be underground. This study also found a variety of other, less commonly used standards. Minimum and maximum lot sizes are common standard tools in zoning, but less so for BESS, with only White County applying a minimum lot size standard of five acres and Jasper County applying a maximum lot size of 10 acres. Table 2 outlines some of the other, less common standards this study found in BESS ordinances.

Table 2: Less common zoning standards for BESS

Standard	Number of Counties
Lighting	2
Communication or wire-less signal interference	2
Water access	1
Security cameras	1
Topsoil requirements	1
Non-permeable subgrade liner	1

Plans, agreements, or studies required

Zoning ordinances for renewable energy often require different plans, agreements, or studies as part of the permitting process. There are a multitude of reasons these may be required, including 1) ensuring zoning standards are met, 2) providing information important to the decision-making process, 3) ensuring other regulations have been met, or 4) protecting and planning for public infrastructure and services.

In Indiana, ten of the 13 counties (76.9%) with BESS regulations required at least one plan or study. The same seven counties, Delaware, Jasper, Marshall, Montgomery, Starke, Warren and White, require a decommissioning plan, transportation plan or road use agreement, and a drainage or erosion control plan. These counties, plus Vermillion and Lake, require an emergency response plan, bringing the total to nine counties (69.2%). NFPA 855 requires an emergency response plan including annual training for facility operators and emergency response personnel (NFPA, 2026). This is overseen by the Indiana Department of Homeland Security (2023). Local zoning requirements for an emergency response plan may strengthen communication and collaboration on the plan or address specific local concerns.

Other plans, agreements, or studies that are commonly required include liability insurance (5 counties, 38.5%), economic development agreements, and maintenance plans (3 counties, 23.1%). The following plans are required in two counties: hazardous materials handling plans, lighting plans, landscaping plans, and property value guarantees.

BATTERY STORAGE IN SOLAR USE REGULATIONS

Nine additional counties mention battery storage in their utility-scale solar use standards. Figure 2 shows these counties. It is unclear how these counties would treat an application for BESS not co-located with solar. Regulations in these nine counties range from simply defining BESS (Carroll County) or requiring its location on the site plan (Daviess County) to not allowing it within a commercial solar development (Grant County). LaGrange, Hamilton and Randolph counties require BESS co-located with solar to be placed within a secure container or enclosure. Franklin County requires a fire suppression system. Bartholomew County requires screening if BESS is located within 200 feet of a right-of-way.



Figure 2: Counties with BESS mentioned in their utility-scale solar regulations or definitions

Rush County requires a separate permit for BESS. However, this statement falls under their solar use standards, and does not specify the permitting process BESS projects would follow in Rush County, so it has been left out of the analysis of counties that regulate BESS as a primary use.

Vermillion County, who does regulate BESS as primary use, does not require a separate permit for BESS co-located with solar if it occupies less than 25% of the total footprint.

SUMMARY

As the deployment of utility-scale Battery Energy Storage Systems has increased in Indiana, counties have begun to address BESS as a unique use in their zoning ordinances. Between 2024 and 2026, 13 counties added or amended specific use standards for BESS in their zoning ordinances. Another nine counties address BESS within their solar use standards or definitions and one county amended their ordinance to explicitly not permit BESS. With more BESS forecasted to come online in the next decade, Indiana counties will face decisions on how to regulate this land use effectively.

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This material is based upon work supported by the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (EERE) through the Renewable Energy Siting through Technical Engagement and Planning (R-STEP) program. R-STEP is administered with support from the Partnership Intermediary Agreement (PIA) that the U.S. Department of Energy (DOE) has established with EnergyWerX.

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