Champaign County
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PLANNING &
ZONING

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CASE NO. 130-AT-24

SUPPLEMENTAL MEMORANDUM #6
May 15, 2025

Petitioner: Zoning Administrator

Request: Amend the Champaign County Zoning Ordinance to add "Battery Energy Storage System" as a new principal use under the category "Industrial Uses: Electric Power Generating Facilities" and indicate that a Battery Energy Storage System may be authorized by a Special Use Permit in the AG-1 Agriculture, AG-2 Agriculture, B-1 Rural Trade Center, B-4 General Business, I-1 Light Industry and I-2 Heavy Industry Zoning Districts; add requirements and fees for "Battery Energy Storage Systems"; add any required definitions, and make certain other revisions to the Ordinance as detailed in the full legal description in Attachment I.

Location: Unincorporated Champaign County

Time Schedule for Development: As soon as possible

Prepared by: **John Hall**
Zoning Administrator

Charlie Campo
Senior Planner

SEPERATION DISTANCES

Testimony regarding setback distances from Engie North America

Andy Ehlert provided information from Engie North America regarding separation distances of BESS facilities to existing principal buildings and property lines of non-participating properties.

ATTACHMENT

A Engie North America Testimony on Case 130-AT-24 received May 13, 2024

Engie North America Testimony on Case # 130-AT-24

Manager of Project Development - MISO: Andy Ehlert; Andrew.ehlert@engie.com

Director of Project Development - MISO, ERCOT: Jake Morris & Fabrice Larre

Project Development within Champaign County limits: Rebel BESS – 100 MW; 200 MW-hr

Under Consideration by the ZBA are two different siting setback rules for standalone BESS Draft Ordinance under Case # - 130-AT-24

Engie is pleased to provide the Champaign County Zoning Board of Appeals (ZBA) written testimony to be added to the Case # 130-AT-24 file currently in draft and be recognized by the Champaign County ZBA.

Introduction

The Champaign County Zoning Board is developing a draft BESS ordinance which will be included in the County Zoning Ordinance. Currently, the ZBA is considering revising the draft BESS Ordinance setbacks for Tier 2 BESS to be a) a setback of ¼-mile (1,320 feet) from BESS equipment to existing principal buildings and/or b) a setback of 1/4 -mile from BESS equipment to nonparticipating properties (a project participant-based setback).

Engie Comments for Consideration

Engie has reviewed the Supplemental Memos #3 and #4 posted to the March 13, 2025, ZBA meeting minutes. It is understood from review of the Memos safety and public welfare of Champaign County's constituents is paramount and the driving factor in consideration of the appropriate setbacks to be established in the Code of Ordinances for Tier 2 BESS. Safety and public welfare are paramount considerations to Engie for new development of any type. Whether it is BESS paired/combined with utility-scale solar (USS) or standalone BESS, Engie appreciates BESS is a new type of development upon our rural landscape and AHJ's are working to gain understanding of these energy storage developments and context with which to create meaningful rules for developers with little historical background and record for a basis.

Engie's hopes through this testimonial to demonstrate that while the application of USS+BESS and standalone BESS appear to be similar, what makes sense for a setback design for a USS+BESS project is not only not-applicable to standalone BESS but will be very difficult to achieve for standalone BESS. Without attempting to provide testimony on behalf of all developers contemplating siting standalone BESS in Champaign County, Engie hopes to provide the ZBA useful comments for consideration, and offers the following by addressing the benefits and difficulties of each type of setback individually.

Tier 2 BESS setback of ¼-mile from equipment to Existing Principal Buildings for Standalone BESS

Positive attributes

Engie believes this distance is more than sufficient in contributing to protecting the health and safety of the community, allowing a Tier 2 standalone BESS to be a quiet, safe business partner in a rural community setting. Engie uses the term "contributing" because the setback is one component to the BESS safety control elements the developer works jointly with the community officials, local first responders, and Fire Departments (FD's) to establish as a condition of a permit.

The assumption is through the permitting process, the following other fire safety and risk mitigation control elements are part of the project design and approval process to support this setback design:

- Developer performs site-specific Hazard Mitigation Analysis (HMA) which could include plume dispersion modeling,
- Developer works jointly with local first responders and FD's on a comprehensive Emergency Response Plan (ERP) detailing the appropriate forms of FD Personal Protective Equipment (PPE) as well as consideration of excavation/shelter-in-place protocols.
- Consideration of a BESS design to include a fire suppression system such that fire potential by thermal runaway is proactively minimized in advance.
- ERPs are updated annually or as needed depending on surrounding development activities.

Difficulties

Engie feels this setback distance intended for standalone BESS is higher than necessary, representing one of the largest Engie has experienced throughout the US. It is important to understand, standalone BESS is meant to support all forms of power generation, storing any electron created upstream of the circuit, not just an adjoining/paired renewable solution such as USS. Therefore, standalone BESS are appropriately targeted to be situated adjacent to the transmission owner/operator's existing high-voltage substations which, by design are built close to electrical load centers, and thereby often closer to more densely populated areas or areas with population growth potential. This siting criteria helps to prevent energy sprawl by keeping high voltage next to high voltage, but because the load centers may have a higher population density, standalone BESS siting becomes challenging with significant setbacks.

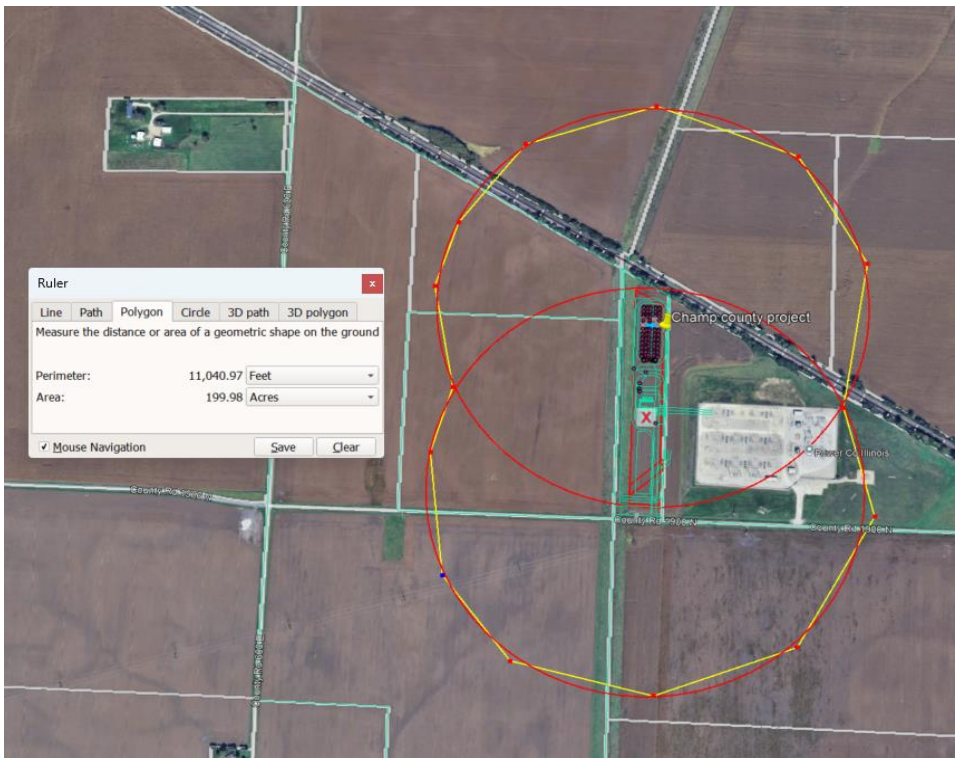
Tier 2 BESS setback of ¼-mile from equipment to non-participating property for standalone BESS

Positive attributes

Engie believes this setback concept is sufficient when siting a combined USS+BESS project. Because the design of a USS ideally includes multiple participating larger contiguous parcels, the BESS component of the combined USS+BESS project can be easily positioned deep within contiguous participating tracts. With that configuration, the ¼-mile participant-based setback distance is achievable and realistic with a thoughtful project layout. This layout consideration is evident in the Little Prairie USS+BESS project layout of case # 144-AT-24, recently approved by the ZBA.

Difficulties

A ¼ mile participant-based setback model makes siting a Tier 2 standalone BESS difficult even if the developer has a potential landowner candidate adjacent to a transmission owner/operator high-voltage substation such as the case for the Engie project adjacent to the Ameren Rising 345kV substation. Given the small, isolated acreage needed for a standalone BESS (usually 4-10 acres), the developer may need to bring into the project as many as 4-8 adjacent landowners just to satisfy the ordinance setback rule. If the adjacent tracts are less than 40 acres, the number would increase. One advantage of standalone BESS is high energy density, that is a large amount of energy can be built on a small space, reducing energy sprawl and therefore avoiding the need for multiple participants. As shown in the image below, a ¼-mile participating LO setback requires approximately 190 additional acres of participating land for a 10-acre standalone BESS project, negating the benefit of the high energy density project.



Most importantly, while developers appreciate the County's necessity to provide a safe living environment for all constituents where both BESS and community quietly co-exist, Engie feels that a setback established based on project participants does not appreciably improve safety and welfare for the public. Engie does not see an increase or improved benefit in public safety around fire risk by adding participating LO's to a small standalone BESS project, and feels this setback rule design might serve more to provide the neighboring landowners an ability to accept or deny a project as their new neighbor.

One of the benefits of standalone BESS is it greatly enhances the transmission level electrical grid reliability, stability, and resiliency all from a small, localized contiguous footprint. As mentioned earlier standalone BESS does not result in energy sprawl. However, requiring a standalone BESS to secure non-participating LO's as a safety buffer who aren't hosting physical assets may not be consistent with the intended essence of the setback rule.

Summary and Recommendations

While a setback tied to existing principal structures is possible/achievable for standalone BESS even at appreciable distances, a participant-based setback albeit practical and achievable for a USS+BESS project) is not for standalone BESS. As mentioned, standalone BESS is sited on smaller tracts of land which controls energy sprawl, keeping our agricultural production stable while advancing and improving electrical power resiliency serving the capacity needs of the electrical providers. In any given standalone BESS siting scenario, a small tract of buildable land, otherwise unusable due to its proximity to an electrical substation could contain a BESS, providing benefits to the grid and therefore the community. Under a participant-based setback rule, LO's adjacent to these small tracts hosting a standalone BESS would be asked to participate in a BESS project only to support an ordinance rule, indirectly supporting the BESS project.

If the ZBA desires to keep the setback to principal building but also include the option to require a participant-based setback, Engie offers the following for consideration in the design of the code section language. Perhaps the ordinance setback rules are applied (one or the other) based on the developer's plan to implement a combination of fire risk mitigation and safety measures, demonstrated at SUP application submittal.

For example:

Setbacks will be "__ feet" from equipment to principal structures, or nearer as determined by the ZBA, if some or all of the following are sufficiently demonstrated as proactive, reasonable fire mitigation measures in the applicant's project design:

1) Inclusion of fire suppression equipment
2) Inclusion of proven monitoring and safety-BESS Technology
3) Performance of an HMA
4) Working jointly with the community FD's and first responders to develop a site-specific ERP including protocol for evacuation or shelter-in-place if localized setting dictates.

Otherwise, the ZBA has the right to enforce a different setback through incorporation of participating neighbors within a certain distance of the Tier 2 standalone BESS project. This allows the developer the opportunity to demonstrate safety first, and the ZBA has flexibility to contemplate setbacks to ensure safety on a case-by-case basis.

Engie will be glad to go through these comments in person with the Zoning Administrator and ZBA if needed.

Thank you ZBA for your consideration of Engie's testimony.

Andy Ehlert, PE Project Development Manager