



Planning & Zoning Report

Date: October 22, 2025
To: Planning and Zoning Board
Through: Marc Heirshberg, Assistant City Manager
From: Nana Appiah, Development Services Director
Mary Kopaskie-Brown, Planning Director
Rachel Phillips, Assistant Planning Director
Subject: Mesa Zoning Ordinance text amendment (**Battery Energy Storage Systems Ordinance**)- Proposed amendments to Chapters 4, 5, 6, 7, 8, 10, 31, 86, and 87 of the Mesa Zoning Ordinance. (**Citywide**)

Recommendation

Staff recommends that the Planning and Zoning Board recommend that City Council adopt the proposed Mesa Zoning Ordinance (MZO) Battery Energy Storage System text amendments.

Coordinated With

The proposed text amendments were coordinated with the Building Division, Mesa Fire and Medical, Energy Resource Department, Environmental & Sustainability, and the City Attorneys Office.

Purpose

Currently, Battery Energy Storage Systems (BESS) are not defined in the MZO and is not included within any existing land use classification. Therefore, BESS and BESS Facilities are prohibited in all zoning districts in the City of Mesa.

Due to a growing need for energy storage, BESS and BESS Facilities are an emerging and increasingly prominent land use request in the City of Mesa. However, BESS and BESS Facilities have unique characteristics related to land use compatibility, safety, and environmental impacts that need to be considered. Therefore, Staff recommends establishing specific zoning regulations and development standards for BESS and BESS Facilities to promote the public health, safety, and general welfare and mitigate potential physical, environmental, and visual impacts of these systems on surrounding areas.

Details of the proposed text amendments are attached in Exhibit 1 – Battery Energy Storage Systems Ordinance and Exhibit 2 – Section 11-31-37: Battery Energy Storage Systems (BESS) and BESS Facilities. Specifically, the proposed text amendments:

1. Define “Battery Energy Storage System (BESS),” “Battery Energy Storage System Facility (BESS Facility),” “Augmentation,” and “Nameplate Capacity;”

2. Establish criteria for classifying a BESS or BESS Facility as either a principal use or an accessory use, and modify certain land use tables to allow BESS and BESS Facilities as either a principal or accessory use;
3. Establish additional application requirements for BESS Facilities;
4. Establish development standards specific to BESS Facilities; and
5. Create ongoing operational requirements for BESS Facilities.
6. Make two proposed BESS Facilities Legal Procedurally Conforming Uses and Structures through uncodified Section 15 and 16 of the Battery Energy Storage Systems Ordinance.

Discussion

1. **Define “Battery Energy Storage System (BESS),” “Battery Energy Storage System Facility (BESS Facility),” “Augmentation,” and “Nameplate Capacity.”**

Staff recommends adding the following definition of Battery Energy Storage System (BESS) and Battery Energy Storage System Facility (BESS Facility) to Section 11-86-5 (Employment and Industrial Use Classifications) of the MZO.

Battery Energy Storage System (BESS). 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. A BESS includes battery cells; thermal, battery, and energy management systems; inverters; and related control and safety components.

Battery Energy Storage System Facility (BESS Facility). The physical site and all associated infrastructure and mechanical equipment necessary for the installation, operation, and maintenance of the BESS, including, but not limited to, enclosures; electrical, power generation, cooling, and ventilating equipment; access roads; substations; interconnection facilities; and supporting structures.

Staff also recommends adding the following BESS related definitions to Section 11-87 (Definitions) of the MZO.

Augmentation: The process of adding new components to, modifying existing components, or replacing components of, an existing BESS Facility.

Nameplate Capacity: The maximum amount of energy that a BESS or BESS Facility can supply or store under specific conditions. It is also referred to as rated capacity or peak capacity, and is expressed in megawatts (MW) or kilowatts (kW) for power. The associated energy capacity, sometimes referred to as nameplate energy capacity, represents the total amount of energy the system can store or deliver over time, expressed in megawatt-hours (MWh) or kilowatt-hours (kWh).

2. Establish criteria for classifying a BESS or BESS Facility as either a principal use or an accessory use, and modify certain land use tables to allow BESS and BESS Facilities as either a principal or accessory use.

Staff recommends establishing criteria for determining when a BESS or BESS Facility is classified as principal use versus an accessory use. Small-scale BESS used for on-site energy storage generally do not have the same impacts as utility-scale systems and therefore should not be subject to the same standards.

When a BESS Facility has a nameplate capacity equal to or greater than 1,000 kilowatts (1 megawatt), staff recommends that the facility be considered a principal use. The facility would be permitted in the General Industrial (GI) and Heavy Industrial (HI) zoning districts if developed in accordance with all applicable regulations in Section 11-37-37 (Battery Energy Storage Systems [BESS] and BESS Facilities), and specifically approved by the City Council through a PAD Overlay District.

When a BESS has a nameplate capacity less than 1,000 kilowatts (1 megawatt) and is used exclusively for the enterprise function of the on-site property owner or tenant, staff recommends that the BESS be considered an accessory use. Accessory BESS would be permitted in all agricultural, residential, public and semi-public, commercial, and employment zoning districts and would not be required to comply with regulations in Section 11-37-37 (Battery Energy Storage Systems [BESS] and BESS Facilities).

3. Establish additional application requirements for BESS Facilities.

Because of the unique characteristics of BESS Facilities, staff recommends additional application requirements beyond those specified in Section 11-67-2 of the MZO and those listed on the Development Services Department website.

The applicant must provide an operational plan that includes a narrative, compliance statement, preliminary emergency response plan, and preliminary decommissioning plan. The compliance statement attests to compliance with all applicable zoning, building, and fire regulations as well as all federal, state, and local environmental laws. The preliminary emergency response plan must describe the procedures for safe shutdown, de-energizing, or isolation of equipment in an emergency situation. Finally, the preliminary decommissioning plan must describe the anticipated life of the BESS Facility, steps required for the complete removal of all components, and the method for removal and disposal of all solid and hazardous waste.

A good neighbor policy must be provided which outlines the measures that will be taken to ensure ongoing compatibility with surrounding uses and provide complaint response procedures including the name and telephone number for the person responsible for the BESS operations.

An initial sound study is required to document the noise levels on the project site and at the property line of the nearest residential zoning district, residential use, church, park, school, or other sensitive use. This baseline will be used as a reference for the standard to be maintained during facility operation.

Lastly, for a BESS Facility, two neighborhood meetings are required to discuss the project. The applicant must notify all property owners and homeowner associations within a half mile of the project site and post a sign on the site with the meeting information.

4. Establish development standards specific to BESS Facilities.

Section 11-31-37(F) establishes the development standards applicable to BESS Facilities, supplementing those in Chapter 7 (Employment Districts). Staff recommends the inclusion of additional standards to address unique operational characteristics and built form of BESS Facilities. Furthermore, Staff recommends that that development standards specified in Chapter 7 and Subsection (F) not be subject to modification through a PAD Overlay District, Bonus Intensity Zone (BIZ) Overlay District, Alternative Compliance, Special Use Permit (SUP).

The proposed development standards address separation requirements, fire safety compliance, site and substation screening, and utility siting.

To minimize potential hazards and reduce land use conflicts, staff recommends requiring BESS Facilities to be located at least 1,000 feet from the nearest residential zoning district or use, 400 feet from the nearest church, park, school, or other sensitive use, and at least 150 feet from any commercial or industrial building. The separation requirement will be measured from the nearest portion of the BESS Facility site screening wall to the nearest property line or building as applicable. These requirements are in addition to the setback standards specified in the Fire Code.

In terms of fire safety, BESS Facilities must comply with all applicable provisions of Title 7 (Fire Regulations), including standards for spacing between units, clear zones, cluster (array) size, and fire road access.

Screening is also a critical component of the proposed standards. BESS Facilities must be enclosed by an opaque wall or fence that extends at least one foot above the tallest piece of equipment. This wall must be constructed of high-quality, durable material such as tinted, textured blocks; brick; stone; or ornamental metal and be articulated every 40 feet to prevent long, uninterrupted expanses.

Substations must also be screened to at least one foot above the tallest piece of ground-mounted equipment. Where walls are 10 feet or shorter, the same standards as BESS site screening apply. Where walls exceed 10 feet, the first 10 feet must be opaque masonry with a decorative louvered, slated, or perforated upper screen, no more than 75% opaque, mounted above. If the substation is located internal to the site, within the BESS site screen wall, the entire enclosure may consist of a decorative louvered, slated, or perforated screen.

Finally, where deemed appropriate, BESS Facilities must underground adjacent or on-site electrical infrastructure that would otherwise be provided via overhead distribution and/or transmission. In such cases, the applicant will be required to bear the full cost of undergrounding improvements.

5. Create ongoing operational requirements for BESS Facilities.

Subsection (G) establishes operational requirements specific to BESS and BESS Facilities. As with the development standards, Staff recommends that these requirements not be subject

to modification through a PAD Overlay District, Bonus Intensity Zone (BIZ) Overlay District, Alternative Compliance, or Special Use Permit (SUP).

The operational standards include ongoing sound monitoring. One sound study must be completed within 30 days of the certificate of occupancy being issued, followed by annual sound studies for a period of five years. These studies ensure that facility operations do not increase noise levels at the nearest residential zoning district, residential use, church, park, school, or other sensitive uses.

Subsection (G) also addresses augmentation (adding, modifying, or replacing component. Long-term degradation and upgrades to the facility must be anticipated in the original approval through a phasing plan. Augmentations that do not modify the site plan or phasing plan will be reviewed under the requirements of Chapter 69 (Site Plan Review). However, any augmentation that increases the nameplate capacity of the BESS Facility will require City Council approval.

6. Make two proposed BESS Facilities Legal Procedurally Conforming Uses and Structures through uncoded Section 15 and 16 of the Battery Energy Storage Systems Ordinance.

If Section 15 (Legal Procedurally Conforming Use) and Section 16 (Legal Procedurally Conforming Structure) of the proposed ordinance are adopted, two proposed BESS Facilities in Mesa will be classified as Legal Procedurally Conforming Uses and Structures, provided the BESS Facilities comply with all the requirements in Sections 15 and 16.

The two subject BESS Facilities are located (1) on approximately 14 acres northwest of the northwest corner of the intersection of Signal Butte Road and Elliot Road, just south of the Church of Jesus Christ of Latter-day Saints (operator Aypa), and (2) on approximately 22 acres southeast of the confluence of the 202 and 24 Freeways, north of Ray Road, and west of Ellsworth Road (operator NextEra). Both properties are currently zoned with the base zoning district Light Industrial (LI).

The effect of classifying these two BESS Facilities as Legal Procedurally Conforming Uses and Structures is that the subject properties will not be required to rezone to General Industrial (GI) or Heavy Industrial (HI) with a Planned Area Development (PAD) Overlay District that specifically permits the BESS Facilities, which would otherwise be required pursuant to the proposed ordinance. However, the two BESS Facilities will still need to comply with all the other requirements of the proposed ordinance, including the separation requirements, development standards, and operational standards. Additionally, Sections 15 and 16 require the two BESS Facilities to comply with the 2024 International Fire Code, as adopted and amended by Mesa.

Citizen Participation

Open House:

Two open houses were held to discuss the proposed text amendments.

- An in-person open house was held on October 1, 2025, at the Mark @Eastmark.
 - Seventeen people attended the open house

- Attendee questions/comments can be found in Exhibit 3 (Summary of Stakeholder Comment and Response). Attendees generally had the following questions:
 - How will runoff from fire suppression be detained?
 - Will there be a setback from waterways and canals?
 - How will residents be notified during an emergency?
 - How did the City come up with one megawatt as the threshold for a primary use?
 - Is it possible not to increase the baseline sound level?
 - Will substation screening apply to the transmission substations?
- Staff provided the following response to the questions/comments:
 - The City's fire suppression approach will be to let the affected BESS burn and try to prevent it from spreading to other BESS. The City may spray other BESS as a preventative measure but not put water on the fire itself. Any runoff, therefore, should not contain contaminants that would need to be contained.
 - No setback from waterways or canals is proposed. Staff doesn't anticipate runoff to be a concern due to the planned fire suppression approach.
 - If evacuations were deemed necessary, Fire and Police would work together to coordinate public notifications and evacuations based upon the nature of the emergency. If evacuations were not needed, Fire, Police, and the City's Public Information Office would work to notify news agencies and coordinate any press releases.
 - The proposed threshold for a primary use is based on research of best practices and other municipal codes.
 - For clarification, the requirement is that the baseline sound level not be increased at the nearest residential, church, park, school or sensitive receptor property line not that the baseline level on the BESS Facility site not be increased. Yes, various approaches can be used to mitigate the noise.
 - Substation screening requirements will apply to all substations located on the BESS Facility site.
- A virtual open house was held on October 13, 2025 via Zoom.
 - Twenty four people attended the open house
 - Attendees had the following questions and/or comments:
 - What are the decibel levels for the sound study?
 - Are there setback requirements for accessory BESS? How will the City prevent multiple 0.9 MW BESS being used to avoid being called a principal use?
 - Will the opaque wall requirements apply to data center BESS?
 - What are the proposed setbacks based on?
 - Can the setbacks be reduced?
 - What economic factors are driving the use of BESS?
 - What about environmental impacts (leaking into water tables, degradation from sun exposure). Are ongoing inspections required?
 - Do applicants need certification to build BESS?
 - How do these standards apply to Eastmark?
 - Why deviate from NFPA standards and require the 300-foot cluster requirements?
 - Staff provided the following response to the questions/comments:

- There are no standard decibel limits. An initial sound study is required to establish the baseline levels at the nearest residential use or zoning district, church, school, park or sensitive receptor. The baseline must then be maintained.
- The proposed BESS standards do not apply to accessory uses. The 1 MW limit applies to the entire site to have accessory BESS it is not determined per BESS unit.
- If a BESS Facility is built on a data center site it must follow the proposed standards. The screening standards are based off those adopted for data centers so they are consistent.
- Staff researched numerous zoning ordinances. There is not consistent standard for separation requirements; they range from 150 feet to 3,200 feet. Staff choose a middle ground that was consistent with what was adopted for data centers and which would address compatibility. The Fire Code setbacks are based off of NFPA 855.
- There may be unique situations (i.e. adjacency to unbuildable areas) that merit a reduction to the Fire Code setback but because the zoning separation requirements address more than safety concerns (e.g. aesthetics, sound, and land use compatibility) the ordinance doesn't allow them to be modified.
- BESS are an emerging technology need to provide energy grid stabilization.
- Battery degradation will be addressed with the augmentation plan. The City will continue to monitor advances in technology and the latest editions of codes that regulate BESS to address safety and environmental impact. Facilities will require an annual Fire inspection.
- BESS facilities, including fire detection systems and hazard mitigation analysis, are required to be designed by a registered engineer and must be approved by the fire code official.
- Eastmark is a Planned Community District that is governed by the Eastmark Community Plan (CP). BESS are not a defined use in the CP and therefore not a permitted use.
- The 300-foot array maximum provide both horizontal and vertical separation and acts like a fire break such as you see when fighting wildland fires, that will help prevent a Fire from spreading through the entire site.

Public Comment:

- Comment received via correspondence prior to 10/16/2025 is included in Exhibit 3 (Summary of Stakeholder Comment and Response) and Exhibit 4 (Public Comment).

Implementation

Staff recommends the ordinance approving the proposed text amendments become effective 30 days from the date of City Council approval.

Exhibits

Exhibit 1 – Battery Energy Storage Systems Ordinance

Exhibit 2 – Section 11-31-37: Battery Energy Storage Systems (BESS) and BESS Facilities

Exhibit 3 – Summary of Stakeholder Comment and Response

Exhibit 4 – Public Comment