



**DATE:** May 28, 2025

**TO:** Orange County Planning Commission

**FROM:** OC Development Services/Planning

**SUBJECT:** Second Study Session for General Plan Amendment GPA 24-03 and Zoning Code Amendment CA 24-03 – County of Orange Battery Energy Storage System Facilities Ordinance

**PROPOSAL:** Staff will provide information in response to Planning Commission feedback from the first study session and present the proposed draft zoning code amendment text relating to Battery Energy Storage System (BESS) facilities. The proposed zoning code amendment will only apply to BESS facilities located within unincorporated areas of the County of Orange.

**ZONING DISTRICT/GENERAL PLAN DESIGNATION:** N/A

**LOCATION:** Unincorporated Areas of the County of Orange

**APPLICANT:** OC Development Services/Planning

**STAFF CONTACT:** Scarlet Duggan, Land Use Manager  
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**RECOMMENDED ACTIONS:**

OC Development Services/Planning recommends the Planning Commission:

1. Receive staff report and public testimony; and
2. Provide feedback to staff as appropriate.

**BACKGROUND:**

Since initiating General Plan Amendment GPA 24-03 and Zoning Code Amendment CA 24-03 to develop guidelines and standards for BESS facilities staff has:

- Coordinated with Orange County Fire Authority (OCFA) on review process for BESS project applications to ensure projects are consistent with OCFA guidance and address safety and fire concerns;
- Consulted with key energy stakeholders such as Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) to seek feedback on policy design;
- Considered the timing of the 2025 California Fire Code updates (expected to be available in July 2025) that will likely include changes related to electrical energy storage systems; and

- Drafted development standards and guidelines for BESS facilities given the following considerations:
  1. Public Safety of residences and businesses
  2. Potential hazards, such as Very High Fire Hazard Severity Zones
  3. Safety measures for BESS installations and decommissioning protocols
  4. Aesthetic concerns
  5. Noise impacts
  6. Federal and State regulations pertaining to energy storage systems and renewable energy facilities
  7. Future demands

On March 26, 2025, staff presented information on policy considerations relating to BESS facilities, as well as provided an update on the efforts to develop guidelines and standards to the Planning Commission (PC). In addition, staff gained feedback from the PC on development of the regulatory framework. A second study session is being held to respond to initial feedback from the PC and seek input on the draft proposed draft zoning code amendment text.

## DISCUSSION:

Based on the research, considerations, and information gathered, staff drafted the proposed preliminary zoning code amendment text (Attachment 1) and is seeking input from the PC.

Key feedback from the first PC study session and staff's consideration of/response to the input are provided below:

**PC Feedback #1: Determine if 0.6 miles required by AB 303 is sufficient separation of BESS facilities from residences and community facilities from a public safety standpoint.**

Considerations:

1. As it relates to public safety, the feedback received from meeting with OCFA and key energy stakeholders on the topic of public safety is primarily to consider siting (limiting or prohibiting BESS facilities in areas susceptible to wildfires or designated as very high fire hazard severity) and to consider safety measures (requiring a Hazard Mitigation Analysis and other Fire Code strategies). Key takeaways/considerations of public safety are to ensure that BESS facilities:
  - Meet Building and Safety Codes and Fire Code;
  - Incorporate appropriate mitigation measures in the design and operation of the facility to address all potential safety challenges; and
  - Sited in locations not prone to known naturally occurring hazards (e.g., wildfire prone areas, on/near an earthquake fault).
2. Developers of BESS facilities will more likely site a facility where the demand for electricity exceeds the capacity available through existing infrastructure and where there is easy

interconnection to the energy grid (e.g., existing substation) to minimize the need to build additional infrastructure. Demand for electricity is typically near more urbanized areas.

3. The County of Orange adopted Fire Code does not include specification for distance of battery energy storage facilities from other uses.
4. The County of San Diego's adopted Interim Fire Protection Guidelines for BESS Facilities specifies a minimum 100-foot setback from the property line to provide adequate distance for personnel, apparatus, and command to be safely positioned during a fire suppression operation. To assess the hazard for public receptors, in many cases a dispersion analysis (plume modeling) is required to define appropriate setback distances or evacuation zones in the event of a BESS fire.
5. The County of Los Angeles adopted Fire Code specifies a 10 feet separation from outdoor stationary storage battery systems to buildings, public ways, lot lines.
6. BESS Guidelines provided to local governments by the state of New York do not specify a separation distance of BESS facilities to residences and community facilities; BESS zoning and planning guidelines provided to local governments by the state of Michigan cite state law (Public Act 233 of 2023) as requiring 300 feet distance separation of BESS facilities from any community buildings and occupied dwellings.

#### County Proposed BESS Regulation:

- Includes a 500 feet separation of BESS facilities from residences and community buildings and included a discretionary approval process through a Use Permit for PC to reduce or increase the distance to allow for flexibility in design.

#### **PC Feedback #2: Ensure required landscaping does not pose a fire risk.**

##### Considerations:

1. Feedback from OCFA did not yield any notable suggested restrictions on general landscaping. However, OCFA may require fuel modification and/or specific landscaping through review of individual projects.
2. Landscaping is frequently utilized for screening purposes.

#### County Proposed BESS Regulation::

- Any proposed landscaping surrounding the perimeter of the facility for screening purposes shall not conflict with OCFA vegetation management requirements.

#### **PC Feedback #3: Provide flexibility in the ordinance to allow the PC to have the ability to review various BESS facility projects.**

##### Considerations:

1. Energy Demands – Developers of BESS facilities will more likely site a facility where the demand for electricity exceeds the capacity available through existing infrastructure and where there is easy interconnection to the energy grid (e.g., existing substation) to minimize the need to build additional infrastructure.
2. Rapid Advancement of BESS technology – as BESS technology advances, so too does the knowledge of its safe operation, with modern systems being significantly safer than those produced just a few years ago.

3. Size of a BESS facility may vary based on the energy demands of the benefitting community.
- County Proposed BESS Regulation: Any request for deviation from development standards shall be reviewed and approved by the PC through a Use Permit process.

**PC Feedback #4: Provide a comparison of the proposed County of Orange BESS development standards to other jurisdictions.**

Considerations:

1. Existing regulatory framework for permitting BESS facilities from other jurisdictions.
2. Published guidance documents on BESS facilities.

Staff Response:

- A development standards comparison table (Attachment 2) provides an overview of how the draft County of Orange BESS facilities ordinance would compare to other jurisdictions.

**PC Feedback #5: Define "economic benefit" to better identify how communities may benefit from this required finding.**

Considerations:

1. Consistency with Public Resources Code section 25545.9.

Staff Response:

- A sample list of economic benefits consistent with Public Resources Code section 25545.9 has been included in the draft ordinance.

**PC Feedback #6: Determine the necessity to consult with the Department of Toxic Substance Control (DTSC) and/or Regional Water Quality Control Board (RWQCB) to understand type and treatment of potentially hazardous waste to be addressed in the required Decommissioning Plan.**

Considerations:

- There are currently no requirements for DTSC and RWQCB to review and approve decommissioning plans associated with BESS facilities.
- OCFA has the local authority to review/approve the Hazardous Mitigation Analysis.

County Proposed BESS Regulation::

- Includes language to allow for other agencies (e.g., DTSC, RWQCB) to review a Decommissioning Plan as may be required by the County or OCFA reviewers, in addition to reviews conducted by OCFA and the County of Orange.

**PC Feedback #7: Consider requiring bonds to guarantee funds for decommissioning of sites in case the BESS facility is abandoned.**

Considerations:

1. Financial guarantee serves as a measure that may reasonably balance community and industry interests.

2. Feedback received from key energy stakeholders is that technology is rapidly changing, and equipment can be changed out in a facility before its useful life.

County Proposed BESS Regulation::

- Includes requirement for financial assurance to be provided to the County prior to building permit issuance. This timing allows the owner/operator to provide more accurate cost estimate based on equipment design as part of the building review/approval process versus the preceding entitlement process.
- Includes requirement for updated financial assurance to be provided to the County if there is a change in ownership or substantial updates to the Decommissioning Plan.

**PC Feedback #8: For better visual illustration, provide photos of BESS facilities that are currently operating.**

Considerations:

1. Operational BESS facilities are sited in a variety of settings (e.g. urban, industrial, less developed areas)

Staff Response:

- Photos of existing, operational BESS facilities in various settings are included as Attachment 3.

**PC Feedback #9: Consider community outreach to gain feedback.**

Considerations:

1. Convenience for the public to provide feedback and stay informed.

Staff Response:

- A project specific page is available on the OC Public Works website to provide up to date information on the County of Orange BESS facilities ordinance. <https://ocds.ocpublicworks.com/service-areas/oc-development-services/planning-development/current-projects/all-districts-5>
- OC Development Services/Planning provides public noticing for all County held public meetings that include an agenda item related to the County of Orange BESS facilities ordinance (e.g., study sessions with the Planning Commission).

**PC Feedback #10: Consider providing resources that demonstrate safety analysis data of BESS facilities.**

Considerations:

1. Reviewed safety research information on BESS facilities from third-party resources such as, National Fire Protection Association (NFPA), CAL FIRE Office of the State Fire Marshall (OSFM), American Clean Power Association (ACP), and California Public Utilities Commission (CPUC).

Staff Response:

- Incorporated resources by reference in this staff report (Attachment 4).

## NEXT STEPS

1. Gain feedback from OCFA and key energy stakeholders on the draft proposed zoning code amendment text.
2. Staff anticipates bringing the ordinance to the PC in July/August 2025 to request recommendation for approval to the Board of Supervisors.

Submitted by:

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## ATTACHMENTS:

1. Draft Proposed Zoning Code Amendment Text
2. Development Standards Comparison Table
3. Photos of Existing Operational BESS Facilities
4. BESS Safety Resources