



## **Battery Energy Storage Systems (BESS) Ordinance**

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- Final Comprehensive Regulations for BESS facilities in unincorporated Solano County

Presented to the Solano County Board of Supervisors  
November 4, 2025  
Department of Resource Management

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# Background and Context

## **Growing Demand for BESS:**

- State clean energy goals driving increased demand for energy storage
- Front-of-the-meter BESS facilities store grid energy and discharge during peak demand
- Can improve grid reliability and efficiency while stabilizing power rates

## **Safety Concerns Identified:**

- Multiple BESS fires nationwide, including California facilities
- Lithium-ion batteries pose thermal runaway risks under certain conditions
- Shelter-in-place orders issued for nearby communities during incidents
- Previously classified as *"utility infrastructure outside right-of-way"*

## **State Permitting Pathway: AB 205**

- BESS projects over 200 MWh can receive all permits through California Energy Commission
- One application submitted and recently deemed complete (NextEra Corby), staff participated in series of pre-filing meetings on two applications (NextEra Corby and Vaca Dixon BESS)



# Timeline on BESS Ordinance Development Process

- **June 2023:** County received use permit application for major BESS project in A-40 zone
- **December 2023:** Board directed staff to prepare urgency ordinance due to safety concerns
- **January 2024:** Board adopted 45-day interim moratorium on BESS facilities
- **February 2024:** Board extended moratorium for 22 months and 15 days
- **August 2025:** Board lifted moratorium in Manufacturing and Industrial zones with interim standards
- **September 2025:** Planning Commission adopts resolution recommending Board adopt proposed ordinance
- **October 2025:** Airport Land Use Committee adopts resolution recommending Board adopt proposed ordinance



# Definitions

**Front of Meter:** Energy systems or resources that are connected directly to the utility grid, before the electricity meter that measures a customer's consumption.

- *Utility company, independent power producers or grid operators*

**Behind the Meter:** Refers to energy systems or resources that are located on the customer's side of the electricity meter.

- *Within a home, business or other facility*

**Thermal Runaway:** a self-reinforcing, uncontrolled increase in temperature within a system, often leading to damage, fire, or explosion.



# Regulatory Framework Issues Identified

- BESS were previously allowed in all zoning districts as “utility infrastructure outside the right-of-way” (prior to moratorium)
- No BESS-specific development standards existed
- Only general County development standards applied
- New ordinance addresses immediate threat to public safety by imposing proper safeguards



# Stakeholder Engagement

## Technical Working Group (TWG) (March 2024 - June 2025)

- Emergency Services, Fire Chiefs, Hazardous Materials, Office of the Agricultural Commissioner, California Energy Storage Alliance
- Monthly meetings with national BESS experts (NFPA, Hiller Companies, UL, etc.)
- Input on preliminary ordinance drafts

## Public Workshop (July 2024)

- Community concerns about facility proximity to homes/schools
- Requests for revenue sharing and independent monitoring
- Preference for safer battery technologies, no risk of thermal runaway

## TWG Members:

- **Priscilla Yeaney:** Solano County Assistant Agriculture Commissioner
- **Alfred Abruzzini:** Fire Chief Representative
- **Robyn Rains:** Solano County Emergency Services Manager
- **Scott Murtishaw:** California Energy Storage Alliance Executive Director
- **Sarah Dunn:** Community Member
- **Andrew Dye:** Solano County Environmental Health division, Hazardous Materials section

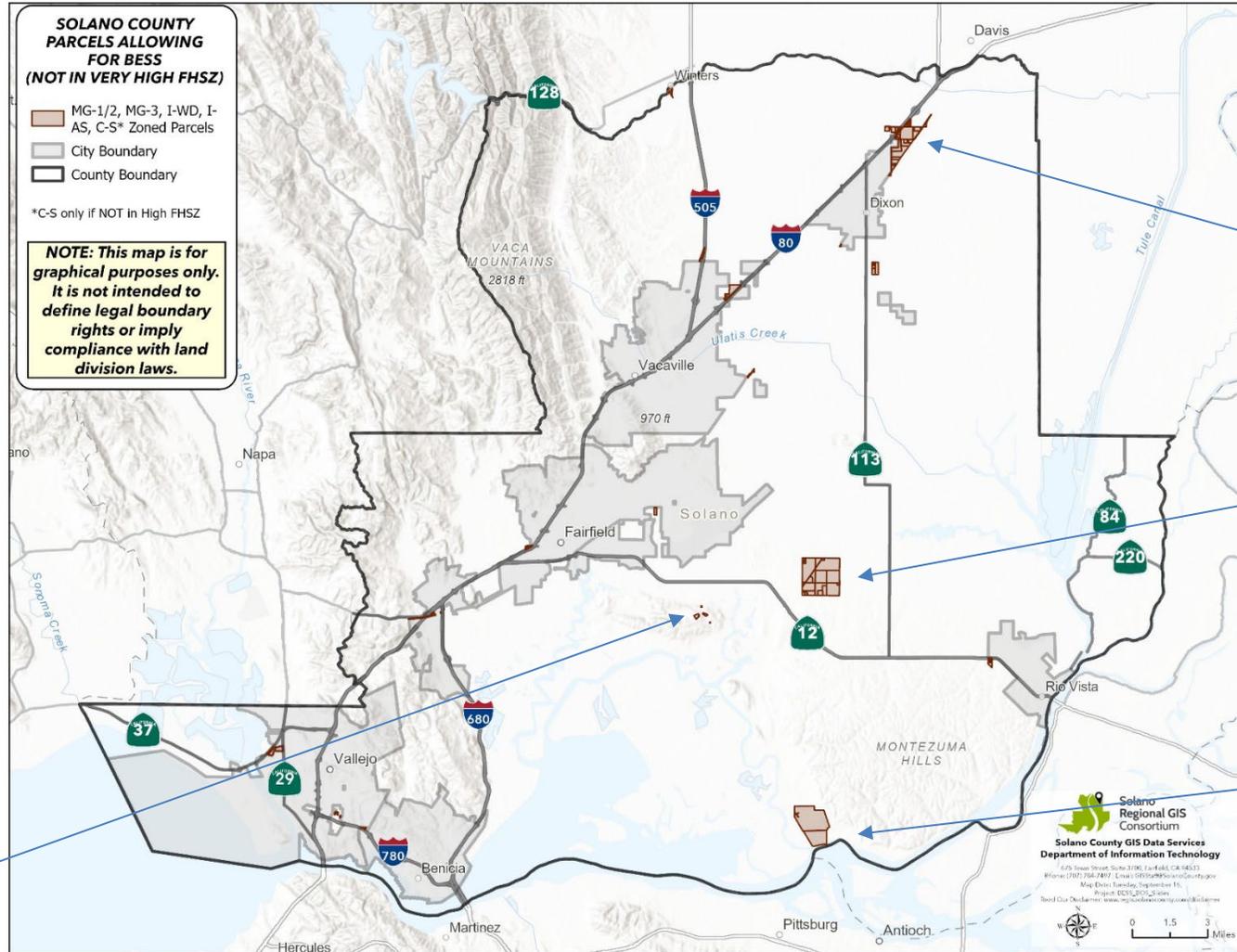


# Proposed Ordinance: Definition

- **Definition and Scope**
  - Defines BESS as an electrochemical device with 1,000+ kilowatt hour capacity
  - Applies only to front-of-the-meter (FTM) systems
  - Excludes behind-the-meter residential/commercial systems
  
- **Permitted Zoning Districts (Use Permit Required)**
  - Manufacturing and Industrial: M-L, M-G, I-WD, I-AS
  - Commercial: C-S only
  - Prohibited in Agricultural, Residential, Resource Conservation and Park districts



# Proposed Ordinance: Siting Map



Dixon Industrial Agricultural Services Area

Lambie Industrial Park

Collinsville Water Dependent Industrial

Potrero Hills



# Proposed Ordinance: Key Safety Standards

## No Thermal Runaway Risk\*

- Iron-Air Batteries
- Vanadium Redox Flow Batteries
- Compressed Air Energy Storage
- Liquid Air Energy Storage
- Aluminum-Ion Batteries

*\*This list does not represent an official determination on thermal runaway risk and is for illustrative purposes*

## Natural Disaster Exclusions:

- Prohibited in Very High Fire Hazard Severity Zones
- Prohibited in High Fire Hazard Zones (except Manufacturing/Industrial)
- Special flood protection requirements in FEMA floodplains

## Thermal Runaway Risk Assessment:

- Third-party documentation required for all battery technologies (*risk assessment analysis*)
- Systems with thermal runaway risk subject to enhanced requirements
- No thermal runaway risk\* systems allowed in Commercial-Services zoning district



# Proposed Ordinance: Addressing Safety

- **Mitigation Standards will include the following areas for negotiation with applicants to address impacts**
  - Thermal Runaway Response Equipment
  - Thermal Runaway Training
  - Contribution to radio interoperability
  - Contribution to consolidated dispatch
  - Point of sale in unincorporated Solano
  
- **Cybersecurity**
  - Solano Office of Emergency Services *Emergency Response Plan Guidance* (required standards)
  - Comprehensive cybersecurity standards



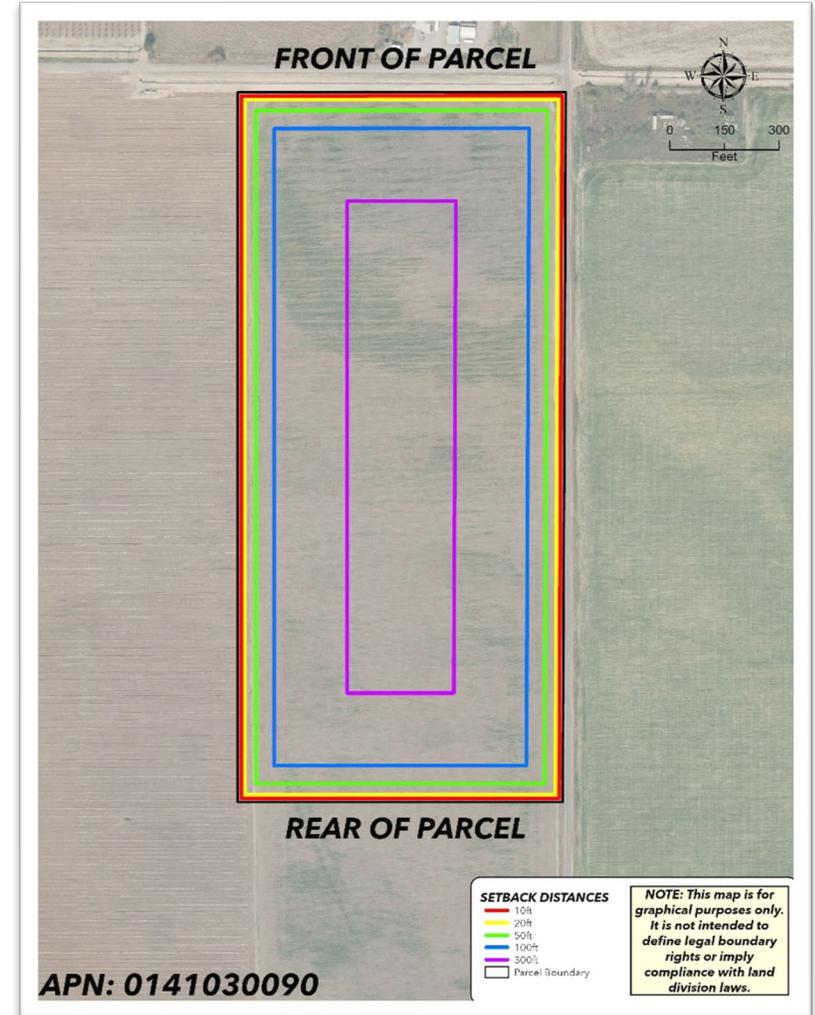
# Proposed Ordinance: Setback Requirements

## For thermal runaway risk systems:

- 300 feet from sensitive receptors (*purple*)
- 100 feet from front property lines (*blue*)
- 50 feet from rear/side property lines (*green*)
- 30-foot fire access road encircling facility (*not shown*)

## For no thermal runaway risk systems:

- 20 feet from all property lines (*yellow line*)





# Proposed Ordinance: County Process

## ➤ **Enhanced Application Requirements**

- Pre-application meetings with County staff and experts
- Technical review fund payments for third-party review *(paid by applicant and County may select consultant)*
- Public hearings at Planning Commission and Board levels
- CEQA compliance for individual projects

## ➤ **Building Permit Documentation**

- Electrical diagrams and equipment specifications
- Commissioning reports and fire testing results
- Soil and air quality baseline testing
- Fault line analysis and seismic risk assessment



# Proposed Ordinance: Decommissioning Requirements

- Financial assurance equal to full decommissioning costs
- 100% financial assurance required by commercial operation
- Manufacturer responsibility for battery cell recovery/recycling



# Environmental Review

## California Environmental Quality Act (CEQA) Exemption

- Proposed zone text amendment is exempt from CEQA under State Guidelines §§15061(b)(3), 15307, and 15308
  - Ordinance incorporates BESS specific standards in zoning districts where they are currently otherwise allowed to ensure the protection of public health, public safety, natural resources and the environment from the unique and complex risks these facilities pose
- *Future individual projects will be subject to environmental review under CEQA*



# General Plan Consistency

The proposed ordinance supports General Plan goals by:

- Advancing renewable energy infrastructure
- Protecting public health, safety, and welfare
- Safeguarding environmental and agricultural resources
- Ensuring compatible land use relationships



# Staff Recommendation

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1. Read proposed ordinance by title only and waive further reading
2. Conduct a noticed public hearing for Zone Text Amendment ZT-25-02
3. Adopt Zone Text Amendment ZT-25-02, as written