

ORDINANCE NO. 2025-XXXX

An ordinance amending Chapter 28 (Zoning Regulations) of the Solano County Code to revise and update regulations related to front-of-the-meter Battery Energy Storage Systems (BESS) in the unincorporated area of Solano County (ZT-25-02)

Whereas, there is a growing demand for front-of-the-meter (FTM) Battery Energy Storage Systems (BESS) in the State of California due to increased demand for renewable electricity to reach the State's clean energy goals and mechanisms to ensure reliability of the State's electric system, among other things; and

Whereas, in general, a front-of-the-meter BESS facility collects energy from the grid, stores it, and then discharges that energy later to provide electricity or other grid services when needed, typically at times of high demand. The facility is directly connected to the transmission or distribution grid and primarily serves wholesale market functions. FTM BESS facilities can help improve the reliability and efficiency of the electric grid system while also potentially stabilizing power rates; and

Whereas, there have been several recent fires at FTM BESS facilities both in California and nationwide. FTM BESS facilities that use lithium-ion batteries create particularly unique fire and explosion hazards. Lithium-ion batteries are inherently safe and stable but certain conditions elevate the risk of fire and thermal runaways such as impacts, puncture or mechanical damage, overcharging, overheating, and short circuits; and

Whereas, on October 7, 2023, the Governor of California signed into law Senate Bill 38 (SB 38), which amends California Public Utilities Code section 761.3 to address safety concerns with BESS projects. SB 38 requires every BESS facility in California to establish an emergency response and emergency action plan for the facility to protect surrounding residents, neighboring properties, emergency responders, and the environment. The BESS facility owner or operator must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan, and submit the plan to the county where the facility is located; and

Whereas, Solano County's current Zoning Regulations allow FTM BESS facilities in all zoning districts in the County with a Use Permit as "Utility facilities or infrastructure, outside of right-of-way." Zoning districts that currently allow FTM BESS include Exclusive Agricultural Districts, Agriculture-Suisun Valley Districts, Agriculture Tourist Center Districts, Rural Residential Districts, Residential-Traditional Community Districts, Commercial Districts, Manufacturing and Industrial Districts, Industrial-Agricultural Service Districts, Marsh Preservation Districts, and Park Districts; and

Whereas, the County's current Zoning Regulations do not contain any specific standards for FTM BESS facilities, so only the general development standards applicable to all land uses in the County are applied. The potential for development of new FTM BESS facilities within Solano County without adequate land use policies and standards in place to implement SB 38 and other best practices to prevent catastrophic interference with nearby communities presents a current and immediate threat to the public's safety and welfare. The approval of use permits, building permits, or other applicable entitlements for FTM BESS without specific standards in place would result in that threat to public safety and welfare; and

Whereas, on January 23, 2024, at a duly noticed public hearing, the Board of Supervisors adopted as an urgency measure Ordinance No. 2024-1852-U, an interim ordinance prohibiting new commercial BESS facilities within the entire unincorporated territory of Solano County. Consistent with Government Code Section 65858, on February 27, 2024, the Solano County Board of Supervisors conducted a noticed public hearing and approved an extension of the interim ordinance for 22 months and 15 days (Ordinance No. 2024-1852-U-E). The interim ordinance is set to expire on January 23, 2026, unless the Board repeals the ordinance prior to that date; and

Whereas, on August 26, 2025, at a duly noticed public hearing, the Board of Supervisors amended the interim ordinance, Ordinance No. 2024-1852-U-E Amendment No. 1, to remove the prohibition on FTM BESS in Manufacturing and Industrial Zoning Districts with specific interim standards in place. The amendment retained the interim prohibition in all other zoning districts because staff needed additional time to understand impacts and best practices where FTM BESS facilities present more complex and imminent threats to human health, safety, and welfare due to their proximity to sensitive receptors, including human residence; and

Whereas, County staff has now completed a draft proposed permanent ordinance related to FTM BESS in Solano County. The ordinance development process involved a Technical Working Group consisting of stakeholders from various sectors who met numerous times to advise on ordinance development. The Technical Working Group and County staff conducted extensive interviews with national experts on FTM BESS, and other California counties that have experienced BESS thermal runaway incidences, to understand impacts and best practices related to safety and fire risk, emerging technologies, and environmental impacts, among other things; and

Whereas, in the time since Ordinance No. 2024-1852-U was adopted, County staff have worked diligently to understand the complexities surrounding FTM BESS facilities, the risks such facilities pose, and best practices for implementing specific standards to protect public health, safety, and welfare. County staff established a Technical Working Group consisting of stakeholders from various sectors who generally meet on a monthly basis to advise on ordinance development. The Technical Working Group and County staff have conducted extensive interviews with national experts on FTM BESS, and other California counties that have experienced BESS thermal runaway incidences, to understand impacts and best practices related to safety and fire risk, emerging technologies, and environmental impacts, among other things; and

Whereas, on September 18, 2025, the Solano County Planning Commission held a noticed public hearing to consider the proposed ordinance, and adopted a resolution recommending approval by the Board of Supervisors; and

Whereas, based on the staff report, recommendation of the Planning Commission, and all other relevant evidence presented to the Board of Supervisors, and after considering all public testimony and due deliberation, the Board of Supervisors determines that the proposed ordinance, ZT-25-02, is appropriate and desirable, and is consistent with the Solano County General Plan.

Therefore, the Solano County Board of Supervisors ordains as follows:

SECTION I

Section 28.01 of Chapter 28 of the Solano County Code is amended to add the following definition:

Battery Energy Storage System (BESS). An electrochemical device, with a rated capacity of equal to or greater than 1,000-kilowatt hours (1 megawatt hour), that charges or collects energy from the grid or a generation facility, stores that energy, and then discharges that energy at a later time to provide electricity or other grid services when needed.

SECTION II

Section 28.21 of Chapter 28 of the Solano County Code is amended by amending Table 28.21A, the table of allowed uses in the Exclusive Agricultural zoning districts, to prohibit Battery Energy Storage Systems, as follows:

TABLE 28.21A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited					
ALLOWED USES* *See Definitions Section 28.01	Permit Requirements				Land Use Regulations** **See Section 28.70.10
	A-40	A-80	A-20	A-160	
COMMUNICATION AND INFRASTRUCTURE USES					
B. INFRASTRUCTURE USES					
Battery Energy Storage System	---	---	---	---	
Utility facility or infrastructure, outside of R.O.W.	UP	UP	UP	UP	28.78.20(A) & (B)(9)

SECTION III

Section 28.22.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.22A, the table of allowed uses in the Suisun Marsh Agricultural District, to prohibit Battery Energy Storage Systems, as follows:

TABLE 28.22A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, - - - = Prohibited		
ALLOWED USES See Definitions Section 28.01	Permit Requirements A-SM-80 and A-SM-160⁽¹⁾ Zoning Districts	Land Use Regulations See Section 28.70.10
28.78 COMMUNICATION, INFRASTRUCTURE AND SERVICE USES		
B. INFRASTRUCTURE USES		

Battery Energy Storage System	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	28.78.20(A) & (B)(9)

SECTION IV

Section 28.23.30 of Chapter 28 of the Solano County Code is amended by amending Table 28.23A, the table of allowed uses in the Agriculture - Suisun Valley (A-SV-20) District, the Agriculture Tourist Center (ATC) District, and the Agriculture Tourist Center – North Connector (ATC-NC) District, to prohibit Battery Energy Storage Systems, as follows:

TABLE 28.23A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited				
ALLOWED USES* *See Definitions Section 28.01	Permit Requirements			Land Use Regulations** **See Section 28.70.10
	A-SV-20	ATC	ATC-NC	
COMMUNICATION AND INFRASTRUCTURE USES				
Battery Energy Storage System	---	---	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	UP	UP	28.78.20(A) & (B)(9)

SECTION V

Section 28.31.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.31A, the table of allowed uses in the Rural Residential zoning districts, as follows:

TABLE 28.31A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited				
ALLOWED USES* *See Definitions Section 28.01	Permitted Uses			Land Use Regulations** **See Section 28.70.10
	RR-2.5	RR-5	RR-10	
28.78 COMMUNICATION, INFRASTRUCTURE AND PUBLIC SERVICE USES				
B. INFRASTRUCTURE USES				
Battery Energy Storage System	---	---	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	UP	UP	28.78.20(A) & (B)(9)

SECTION VII

Section 28.32.20 of Chapter 28 of the Solano County Code is amended by amending Table

28.32A and Table 28.32B, the tables of allowed uses in the Residential-Traditional Community zoning districts, as follows:

TABLE 28.32A ALLOWED USES: R-TC-1AC, R-TC-20, R-TC-15, R-TC-10, R-TC-6 DISTRICTS

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited						
ALLOWED USES* *See Definitions Section 28-01	Permitted Uses					Land Use Regulations** **See Section 28-70.10
	R-TC-1AC	R-TC-20	R-TC-15	R-TC-10	R-TC-6	
COMMUNICATION, INFRASTRUCTURE AND SERVICE USES						
B. INFRASTRUCTURE USES						
Battery Energy Storage System	---	---	---	---	---	
Utility facilities or infrastructure, outside of R.O.W.	MUP	MUP	MUP	MUP	MUP	28.78.20(A) & (B)(9)

TABLE 28.32B ALLOWED USES: R-TC-5, R-TC-4, R-TC-D, R-TC-MF, R-TC-MU

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited							
ALLOWED USES* *See Definitions Section 28-01	Permitted Uses						Land Use Regulations** **See Section 28-70.10
	R-TC-5	R-TC-4 ⁽¹⁾	R-TC-D-4	R-TC-D-6	R-TC-MF	R-TC-MU	
COMMUNICATION, INFRASTRUCTURE AND SERVICE USES							
B. INFRASTRUCTURE USES							
Battery Energy Storage System	---	---	---	---	---	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	UP	UP	UP	UP	UP	28.78.30(A) & (B)(4)

DISTRICTS

SECTION VIII

Section 28.41.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.41A, the table of allowed uses in the Commercial zoning districts, as follows:

TABLE 28.41A ALLOWED USES: (C-H), (C-N), (C-R), (C-R-L), (C-S), (C-O) DISTRICTS

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, PD = Planned Unit Development, UP = Use Permit, E = Exempt, - - - = Prohibited							
ALLOWED USES* *See Definitions Section 28-01	Permitted Uses						Land Use Regulations** **See Section 28.70.10
	C-H	C-N	C-R	C-R-L⁽⁶⁾	C-S	C-O	
28.78 COMMUNICATION, INFRASTRUCTURE AND SERVICE USES							
B. INFRASTRUCTURE USES							
Battery Energy Storage System	---	---	---	---	UP	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	UP	UP	UP	UP	UP	28.78.20(B)(9)

SECTION IX

Section 28.42.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.42A, the table of allowed uses in the Manufacturing and Industrial zoning districts, as follows:

TABLE 28.42A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited					
ALLOWED USES* *See Definitions Section 28.01	Permit Requirements				Land Use Regulations** **See Section 28.70.10
	M-L	M-G-1/2	M-G-3	I-WD ⁸	
COMMUNICATION AND INFRASTRUCTURE USES					
B. INFRASTRUCTURE USES					
Battery Energy Storage System	UP	UP	UP	UP	28.83
Utility facilities or infrastructure, outside of R.O.W.	UP	UP	UP	UP	28.78.20(A) & (B)(9)

SECTION X

Section 28.43.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.43A, the table of allowed uses in the Industrial – Agricultural Service zoning district, as follows:

TABLE 28.43A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited		
ALLOWED USES* *See Definitions Section 28.01	Permit Requirements	Land Use Regulations** **See Section 28.70.10

	I-AS	
COMMUNICATION AND INFRASTRUCTURE USES		
B. INFRASTRUCTURE USES		
Battery Energy Storage System	UP	28.83
Utility facilities or infrastructure, outside of R.O.W.	UP	28.78.20(A) & (B)(9)

SECTION XI

Section 28.51 of Chapter 28 of the Solano County Code is amended by amending Table 28.51A, the table of allowed uses in the Watershed and Conservation district, as follows:

TABLE 28.51A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited		
ALLOWED USES* *See Definitions Section 28-01	Permitted Uses	Land Use Regulations** **See Section 28.70.10
	W District	
28.78 COMMUNICATION, INFRASTRUCTURE AND SERVICE USES		See Section 28.78
B. INFRASTRUCTURE USES		
Battery Energy Storage System	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	28.78.20(A) & (B)(9)

SECTION XII

Section 28.52.20 of Chapter 28 of the Solano County Code is amended by amending Table 28.52A, the table of allowed uses in the Marsh Preservation district, as follows:

TABLE 28.52A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, - - - = Prohibited		
ALLOWED USES See Definitions Section 28.01	Permit Requirements MP⁽¹⁾ Zoning District	Land Use Regulations See Section 28.70.10
28.78 COMMUNICATION, INFRASTRUCTURE AND SERVICE USES		
B. INFRASTRUCTURE USES		
Battery Energy Storage System	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	28.78.20(A) & (B)(9)

SECTION XIII

Section 28.61 of Chapter 28 of the Solano County Code is amended by amending Table 28.61A, the table of allowed uses in the Park district, as follows:

TABLE 28.61A TABLE OF ALLOWED USES

A = Allowed by right, AP = Administrative Permit, MUP = Minor Use Permit, UP = Use Permit, E = Exempt, - - - = Prohibited		
ALLOWED USES* *See Definitions Section 28.01	Permitted Uses	Land Use Regulations** **See Section 28.70.10
	P District	
28.78 COMMUNICATION, INFRASTRUCTURE AND SERVICE USES		
B. INFRASTRUCTURE USES		
Battery Energy Storage System	---	
Utility facilities or infrastructure, outside of R.O.W.	UP	28.78.20(A) & (B)(9)

SECTION XIV

Section 28.78.20(B)(9) of Article III of Chapter 28 of the Solano County Code is amended as follows:

28.78.20 INFRASTRUCTURE USES**B. Specific Requirements****9. Utility Facilities or Infrastructure, outside of R.O.W.**

All utility accessory uses and structures for transmission or distribution of electricity, gas, water, oil, gasoline, telephone, television or other utility services may be permitted in any district. Utility accessory uses and structures include, but are not limited to, compression, drying, regeneration stations, substations, or pumping stations. Battery Energy Storage Systems are not regulated as Utility Facilities or Infrastructure for purposes of this Chapter.

SECTION 6. Interim Amendment to Section 28.83 of the Solano County Code

Section 28.83 is added to Article III of Chapter 28 of the Solano County Code as follows:

28.83 BATTERY ENERGY STORAGE SYSTEMS**A. Purpose**

Battery Energy Storage System regulations are adopted with the intent of advancing and protecting the public health, safety, and welfare of the community by establishing regulations for the installation and use of BESS. The regulations herein are intended to protect the health, safety, welfare, and quality of life for the general public, to ensure compatible land uses in the areas affected by energy storage facilities, and to mitigate the impacts of energy storage

facilities on the environment.

B. Definitions

“National Fire Protection Association” (NFPA) is a nonprofit organization that develops and publishes consensus codes and standards intended to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation in the United States and internationally.

“NFPA 855,” the *Standard for the Installation of Stationary Energy Storage Systems*, is a set of comprehensive guidelines for the safe installation of stationary energy storage systems, including those with lithium batteries. These standards address various aspects of installation to mitigate fire and explosion risks associated with energy storage technologies. It covers topics such as system design, construction, operation, and maintenance to ensure safety and reliability.

“UL 9540” is a standard for Energy Storage Systems and Equipment, designed to ensure the safety of these systems and covers their construction, performance, and testing requirements. UL 9540 certification intends to verify that energy storage systems, such as batteries and related equipment, meet safety standards to prevent hazards related to electrical, mechanical, and environmental conditions.

“IEEE” is the Institute of Electrical and Electronics Engineers is a global professional organization dedicated to advancing technology for the benefit of humanity. IEEE develops and maintains international standards in various fields of electrical and electronic engineering, computer science, and related disciplines.

“Front-of-the-meter (FTM) Battery Energy Storage System” refers to a Battery Energy Storage System (BESS) that is directly connected to the transmission or distribution grid and primarily serves wholesale market functions such as grid support, frequency regulation, or energy arbitrage.

“Behind-the-meter (BTM) Battery Energy Storage System” refers to a Battery Energy Storage System (BESS) installed on the customer’s side of the utility meter. These systems are designed to support energy use by providing backup power, demand charge management, load shifting, or renewable energy integration.

“Commissioning” is a systematic process that provides documented confirmation that a battery energy storage system functions according to the intended design criteria and complies with applicable code requirements.

“Decommissioning” is the process of removing equipment and other infrastructure associated with a project and restoring the site for viable reuse consistent with the zoning district.

“Thermal runaway” refers to an uncontrollable, self-sustaining exothermic chain reaction within a battery energy storage system, initiated by a failure mechanism (e.g., internal short circuit, overcharging, physical damage, or thermal exposure). This reaction results in a rapid increase in cell temperature, leading to the release of flammable electrolytes, generation of toxic gases (e.g., hydrogen fluoride, carbon monoxide), and potential cascading failures to adjacent cells. If unmitigated, thermal runaway may cause fire, explosion, or hazardous material release, posing risks to public safety, property, and the environment.

C. Applicability

1. The requirements of Section 28.83 shall apply to all front-of-the-meter Battery Energy Storage Systems in the unincorporated territory of Solano County that have a rated nameplate capacity equal to or greater than 1,000 kilowatt hours (1 megawatt hour).
2. The requirements of Section 28.83 do not apply to behind-the-meter BESS supporting residential, commercial, agricultural, manufacturing and industrial uses.

D. Land Use and Siting Standards.

1. **Zoning Districts:** Battery Energy Storage Systems may be permitted only in zoning districts that expressly allow BESS under Article II (Districts and Allowable Uses) of this Chapter.
2. **Natural Disaster Zone Exclusion:**
 - a. BESS facilities are not permitted in Very High Fire Hazard Severity Zones as determined by Cal Fire within a State Responsibility Area or a Local Responsibility Area. Applicants must submit mapping of the proposed site demonstrating compliance with this section. If the maps listed are updated prior to permit issuance, the application must be amended to reflect most recent maps.
 - b. BESS facilities are not permitted in High Fire Hazard Severity Zones as determined by Cal Fire within a State Responsibility Area or a Local Responsibility Area, except for facilities located in the Manufacturing and Industrial (M-L, M-G-1/2, M-G-3, I-WD) and Industrial-Agricultural Service (I-AS) zoning districts. Applicants must submit mapping of the proposed site demonstrating compliance with this section. If the maps listed are updated prior to permit issuance, the application must be amended to reflect most recent maps.
 - c. BESS facilities are not permitted within a FEMA designated floodplain unless the parcel or developed area where the BESS is to be installed is raised to at least two feet above the Base Flood Elevation (BFE) through engineered fill or equivalent flood protection measures. A Conditional Letter of Map Revision (CLOMR) shall be obtained from FEMA prior to site grading or fill, demonstrating that the project will not result in an increase in BFE or adverse floodplain impacts, demonstrating that the proposed project meets all applicable NFIP requirements.
3. **Setbacks:** BESS facilities shall comply with all state and NFPA 855 requirements related to setbacks and buffers for BESS, and shall also meet the following County requirements. Where NFPA 855, state, and County standards differ, the more stringent standard shall apply. These setback requirements can be increased at the discretion of the Board of Supervisors based on technical studies required as part of the application.

If a risk of thermal runaway is deemed present as defined in Section 28.83(E)(1), the following setback standards apply:

- a. The minimum distance of a BESS module from any existing sensitive receptor, as defined in California Health and Safety Code § 42705.5(a)(5), is 300 ft.

- b. A 30-foot-wide fire rated access road must encircle the entire module array inside a security perimeter fence. There must be a minimum of two entrances to the access road.
- c. Setbacks from the front property line to the first BESS module are a minimum of 100 feet.
- d. Setbacks from the rear and side property line to the first BESS module are a minimum of 50 feet.
- e. Property owners and residents residing on the same parcel as a BESS facility can exempt occupied buildings from distance requirement in Section 28.83(D)(3)(a) with written approval contained in the project application.

If no risk of thermal runaway is determined as in described in Section 28.83(E)(1), state standards and a minimum setback of 20 feet from all property lines form the first BESS module

- f. Property owners and residents residing on the same parcel as a BESS facility can exempt occupied buildings from distance requirement in Section 28.83(D)(3)(a) with written approval contained in the project application.

4. **Security and Screening:** BESS facilities shall comply with the following security and screening requirements.

- a. The facility shall have a non-scalable and transparent perimeter fence of at least 10 feet in height. The perimeter fence shall have at minimum two entrance gates equipped with a rapid access system chosen in consultation with fire agency with jurisdiction over the project site.
- b. The facility shall be equipped with a security system to prevent break-ins including cameras and barbed wire that is visible from public roads. The cameras must be monitored 24 hours a day, 7 days a week, with any threats immediately reported to law enforcement.
- c. The facility shall comply with NFPA 855 specifications related to barriers and buffering.
- d. BESS modules shall not be visible from any non-participating occupied structure or public right of way.
- e. Signage shall be located on BESS modules, perimeter fences and any other security barriers. Signage shall include a site map. Signage shall contain 24-hour emergency contact information, product description, site owner and hazard warnings. Signage or maps should identify isolation distances response personnel shall maintain from BESS during an emergency. Signage shall be provided for grid-interactive BESS operating in parallel with other power generating sources. Signage shall be provided indicating explosion hazard zones. Signage must be compliant with all NFPA 704 standards.

5. **Sound Levels:** The average noise generated from a BESS facility, its components, and associated ancillary equipment, measured at the occupied structure or public right of way, shall not exceed 65 decibels.

6. **Hours of Construction:** Any construction related to a BESS facility shall only occur within the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday.

7. **Below Grade Interconnection:** All on-site utility lines shall be placed underground to the extent feasible, except for the main service connection at the utility company right-of-way and any new interconnection equipment, including without limitation, any poles, with new easements and right-of-way as required.
8. **Site Plan:** A site plan is required and shall include the following information. Additional information may be requested by the County.
 - a. Property lines and physical features, including roads, for the project site.
 - b. Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, and screening vegetation or structures.
9. **Road Maintenance:** BESS facilities shall be subject to the Solano County Road Improvement Standards and Land Development Requirements. Additionally, the applicant shall coordinate with Public Works Engineering to establish the necessary Road Damage Agreements with surety, as determined by the County.

E. Battery Chemistry Technology

1. **Best Available Technology:** BESS facilities shall utilize commercially available battery technologies that minimize the risk of thermal runaway. Applicants are strongly encouraged to select technologies with no or low thermal runaway risk. All BESS applications must include third party written documentation evaluating whether the proposed battery technology poses a risk of thermal runaway.
 - a. If the proposed battery technology is determined by the County to present a thermal runaway risk, the applicant shall submit a comprehensive technology comparison analysis. This analysis must include, at a minimum: A techno-economic comparison of alternative battery technologies based on publicly available information; an assessment of hazardous chemicals involved in the event of thermal runaway, qualitative and quantitative risk analysis of thermal runaway; A thermal runaway plume modeling analysis; and any additional information deemed necessary by the Director of Resource Management.
 - b. If the proposed battery technology is determined by the County to present no risk of thermal runaway, applications are exempt from the requirements in Sections 28.83(D)(2), (F)(3), (F)(4), (J)(4)(e)-(f). Applicants must instead submit the following: Third-party verification of system stability (e.g., material safety analysis, abuse tolerance testing results) and basic chemical hazard documentation to demonstrate no risk of hazardous emissions or thermal runaway propagation.
 - c. Within the Commercial-Service (C-S) zoning district, the proposed battery technology must present no risk of thermal runaway. Applications for BESS facilities that present a thermal runaway risk are not permitted in the C-S zoning district.
2. **Owner Responsibility for Thermal Runaway:** BESS facility owners must reimburse Solano County and emergency response agencies, including fire agencies, for all costs associated with a thermal runaway event. This includes thermal runaway

response costs, as tracked by the emergency response agency with jurisdiction over the incident command team. In the event of thermal runaway, the fire agency having jurisdiction over the site will oversee and coordinate subject matter experts conducting a root cause analysis, with costs borne by the BESS facility owner.

The BESS facility owner must also reimburse costs of an assessment of damage to the environment, agriculture, residents, and businesses conducted by one or more third party consultants selected by the County and all testing, damages and remediation conducted by responsible entities that is required to return all sites in the path of the plume caused by thermal runaway to the previous condition after thermal runaway incident or other hazardous incident.

F. Impact Mitigation Measures

A BESS applicant may be subject to mitigation measures at the discretion of the County including, but not limited to, the following. The County may exempt a BESS applicant from the following mitigation measures if a determination is made that the proposed battery chemistry does not have a risk of thermal runaway.

1. Annual contribution for fire response equipment as deemed necessary by the Solano County Office of Emergency Services to respond to a BESS emergency event. System manufacturer shall provide a list of recommended equipment for addressing a thermal runaway incident.
2. Annual contribution for training of all Solano County emergency response agencies and mutual aid partners for BESS emergency response, as determined by the County.
3. Contribution to radio interoperability to assist in efficient and effective BESS emergency response, as determined by the County.
4. Contribution to support a consolidated fire and medical public safety answering point for efficient and effective BESS emergency response, as determined by the County.
5. Confirmation that point of sale for all BESS project equipment is located in unincorporated Solano County.

G. Cybersecurity

BESS facilities must comply with Solano County Office of Emergency Services “*Emergency Response Plan Guidance*” document. Although not all decisions regarding cybersecurity can be expected to be made prior to land use permits being issued, project applicants shall to agree to comply with all requirements in “*Emergency Response Plan Guidance*” document.

H. Safety Standards and Certifications

1. Safety Requirements

a. The following must be included in a BESS application submittal:

- i. A preliminary emergency response plan that includes site access, equipment locations and potential hazards for responders in addition to any other requirements. This document can be edited, after land use permits are approved, with written approval from emergency response agencies with

- jurisdiction over the project. A final emergency response plan, with written approval from the emergency response agency with jurisdiction over the project, must be submitted prior to issuance of any building permits.
- ii. A report documenting coordination to-date with emergency response organizations in developing the required emergency response plan in compliance with Solano County Office of Emergency Services *"Emergency Response Plan Guidance"* and all applicable state laws
 - iii. A plan for offering site-specific training to the fire service and emergency personnel prior to commencing operation.
 - iv. A hazard mitigation analyses if required by NFPA 855.
 - v. A comprehensive technology comparison analysis, if applicable under Section 28.83(E).
 - vi. A financial assurance plan, including a battery cell manufacturer responsibility agreement and liability insurance policy for thermal runaway events and other hazardous incidents.
 - vii. A description of cybersecurity risks and mitigation measures associated with BESS modules, the Battery Management System, and active and passive fire and explosion detection systems.
 - viii. Submitted plans and documents must be under the signature and seal of CA Licensed design professional.
 - ix. HMA, Fire Risk Analysis, fire suppression and deflagration protection analysis submittals shall be from a CA Licensed Fire Protection Engineer approved by the emergency response agency with jurisdiction over the project site per California Fire Code (CFC) Section [A]104.7.2 as it may be amended. Submittals will require signature and seal.
 - x. Fire protection system submittals such as fire suppression and water supply shall include a C-16 - Fire Protection Contractor of record.
 - xi. Fire alarm systems, fire detection, gas detection shall include a C-10 - Electrical Contractor of record.
 - xii. Final approvals of any BESS or safety related equipment that has routine maintenance requirements according to the code or manufacturer's instructions will not receive approval until a maintenance plan has been submitted to the emergency response agency with jurisdiction over the project site. Maintenance must comply with NFPA 68, NFPA 69, and NFPA 72.F
 - xiii. Once an application is accepted for review, any updated submittals during the period of review, installation and final inspections must either be signed and sealed by the design professional of record, or a cover letter signed and sealed by the design professional of record shall accompany the submittal, attesting that the updated information conforms to the overall design and code requirements.
 - xiv. Documentation of a dedicated fire water supply is required. This requirement can be waived if the Director of the Department of Resource Management in conjunction with the fire agency having jurisdiction over the project that a water supply is not required. The request to omit a water supply shall be in accordance with NFPA 855 and must be validated by the approved Hazard Mitigation Analysis. Where municipal water supply is not available, and a water supply is determined necessary, the provided water supply quantity shall be determined by the Hazard Mitigation Analysis. Rural water supply installations shall comply with NFPA 22.

- xv. Applicant must provide funding to the air quality district with jurisdiction over the project site to establish 10 or more permanent air monitors, at distances and elevations determined by the air quality district with jurisdiction over the project site to detect harmful constituents, hazardous to human life or wildlife, emitted as a result of thermal runaway as determined by the air quality district with jurisdiction over the project site. The number of sensors deployed will be determined by the air quality district with jurisdiction over the project site. If a thermal runaway incident occurs or air monitors detect hazardous constituents, a County staff contact as determined by the County will be notified. After an incident, related to BESS thermal runaway or otherwise, County staff will have access to the raw, unfiltered data from the air monitors.
 - xvi. BESS operator will submit a comprehensive annual report to County staff as designated by the County consisting of but not limited to; the number of threats made to the site, the number of trips of the site security system, the number of hazardous incidents at the site, the number of fire and law responses to the site, soil testing on-site and the surrounding properties for hazardous chemicals existing in the battery system, air monitor results. This list can be supplemented and modified by County staff at any time.
 - xvii. Front-of-the meter BESS modules will not be permitted indoors.
- b.** Applicants must make a commitment in writing that the proposed BESS facility will comply with the latest published version of the NFPA 855, *Standard for Installation of Stationary Energy Storage Systems*, and UL 9540, *Energy Storage System Requirements*, at the date of the submission of the application in addition to any specific requirements set forth herein:
- i. All technical studies, Hazard Mitigation Analysis and planning documents required by SB 38, NFPA 855 and the County must include both a probable scenario of limited thermal runaway and possible scenarios of simultaneous thermal runaway in all site modules at once, and shall address hazards as outlined in the “*Emergency Response Plan Guidance*” to the site and mitigation measures deployed.
 - ii. Applicants must submit technical studies prepared by a third-party fire protection engineer selected by the County detailing the proposed fire safety features of the design, operation, and use of the BESS. Changes in installation configuration from the initial UL 9540A cell, module, and unit level test and the separate large scale fire testing, including internal architecture of modules and units will not be accepted unless it is demonstrated that the configuration provides equivalent results. Fire safety features must include mechanisms for maintaining the temperature and humidity ratings of the listing.
 - iii. Technical studies prepared by a third-party fire protection engineer, which the County has the discretion to select, must account for setback requirements and best practices from residential buildings and sensitive receptors. Technical study must include estimated impacts to property values and insurability of properties potentially impacted by a plume caused by thermal runaway.
 - iv. Technical studies prepared by third party subject matter experts, which the County has the discretion to select, must include plume modeling and toxic gas dispersion analysis, specifically addressing impacts on missions and flight paths of Travis Air Force Base and other Solano County airports.

- v. Technical studies prepared by third party subject matter experts selected by the County analyzing the chemical composition of BESS fire emissions and associated human, wildlife and environmental hazards, specifically at which distances emission impacts will be hazardous.
- vi. Technical studies prepared must analyze runoff of water and fire suppression liquid associated impacts to groundwater, wildlife, waterways, and the environment. If determined to be required by County staff, site plans must include a system for capturing runoff water, whose size requirements will be determined based on technical studies in consultation with County and fire agency with jurisdiction over the project site, for water or fire suppressant liquid that may be used by first responders during thermal runaway incidents, and a geo-lined impermeable layer under all BESS modules. The retention basin must be emptied the same day if filled by rain or flood water. If thermal runaway occurs, five samples of fire suppressant liquid or water utilized must be taken by third party subject matter expert selected by the County and mitigation measures will be taken to reduce the adverse impact by third party subject matter experts selected by the County, with the costs being paid for by the site owner.
- vii. BESS facilities must have active and passive fire and explosion detection systems in place, including gas detectors that meet UL 9540A, NFPA 72, and NFPA 69 standards. These systems must be able to detect explosive gases, trigger alarms, and initiate ventilation systems to mitigate risks from thermal runaway.
- viii. Battery Management System (BMS) must be approved and meet manufacturer's specifications. The BMS must transmit signals to an approved location if hazardous conditions are detected and be monitored twenty four hours a day seven days a week. BMS documentation must identify security risks and potential threats, along with the mitigation measures implemented to reduce each identified risk.
- ix. A combustible gas concentration reduction system compliant with NFPA 855, NFPA 69, UL 9540, and CFC that has undergone UL 9540A testing will have the ability to be automatically activated.

I. Decommissioning.

1. A BESS applicant shall provide a decommissioning plan that complies with the following requirements with their building permit application submittal. The decommissioning plan shall include any agreements reached between the applicant and other landowners of property on which the BESS is sited that ensures the return of all such properties to a useful condition, including removal of above-surface facilities and infrastructure that have no ongoing purpose. Land that was used for agricultural production within the ten years prior to BESS construction must be restored to a condition conducive for agricultural production.
2. The decommissioning plan shall also include the following:
 1. An overview of the decommissioning process developed specifically for the BESS that is to be decommissioned.
 2. Roles and responsibilities for all those involved in the decommissioning of the BESS and their removal from the site.
 3. Plans and specifications necessary to understand the BESS and all associated operational controls and safety systems, as built, operated, and maintained.

4. A detailed description of each activity to be conducted during the decommissioning process and who will perform that activity and at what point in time.
 5. Procedures to be used in documenting the BESS and all associated operational controls and safety systems that have been decommissioned.
 6. Guidelines and format for a decommissioning checklist and relevant operational testing forms and necessary decommissioning logs and progress reports.
 7. A description of how any changes to the surrounding areas and other systems adjacent to the BESS, including, but not limited to, structural elements, building penetrations, means of egress, and required fire detection and suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed.
3. The decommissioning plan shall include insurance for bankruptcy in the form of a bridge policy. The decommissioning plan shall include, but is not limited to, financial assurance in the form of a bond, a parent company guarantee, or an irrevocable letter of credit, but excluding cash. The amount of the financial assurance shall not be less than the estimated cost of decommissioning the energy facility, after deducting salvage or recycling value, as calculated by a third party with expertise in decommissioning, which the County has the discretion to select and paid for by the applicant. The entire financial assurance must be posted by the start of full commercial operation of the BESS facility.
 4. **Ownership Changes:** If the owner of a BESS facility changes, or the owner of the property changes, project approvals shall remain in effect, provided that the successor owner or operator assumes in writing all the obligations of the project, site plan approval, and decommissioning plan. A new owner or operator of the BESS facility shall notify the Department of Resource Management of such change in ownership or operator within 30 days of the ownership change. A new owner or operator must provide such notification to the Department of Resource Management in writing. The project and all approvals for the BESS facilities will be void if a new owner or operator fails to provide written notification to the Department of Resource Management in the required timeframe and fines may be issued to new owner. Reinstatement of a voided project or approvals will be subject to the same review and approval processes as new BESS applications under this chapter.
 5. **Manufacturer Responsibility:** A BESS application must include an agreement stating the facility owner's responsibility to recover and recycle battery cells upon decommissioning.

J. Permitting

1. **Technical Review Fund:** Applicants will provide two payments established by the County; one payment prior to conducting a pre-application meeting and a second payment with initial application for County to retain the services of third-party experts to review and process the application, with unused fees reimbursed upon completion of permitting process or withdrawal of a pending application. Additional fees may be required by the County as established in the County's adopted fee schedule.
2. **Required Pre-Application Meeting:** Prior to the submittal of an application, the applicant must request a pre-application meeting to allow discussion and review by County staff, public agencies and third-party subject matter experts.

- 3. Use Permit Approval:** Applications for BESS permits shall be approved in accordance with Section 28.106 of this Chapter, except that the application shall be scheduled for public hearing before the Planning Commission for its recommendation and then the Board of Supervisors for final action.
- 4. Site Plan:** The requirements listed in the following section are not required for the issuance of a land use permit. Prior to issuance of a building permit, BESS applicants shall submit documentation that contains at minimum:
 - a. An electrical diagram detailing the BESS layout, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and over current devices.
 - b. A preliminary equipment specification sheet that documents the proposed BESS components, inverters and associated electrical equipment that are to be installed. A final equipment specification sheet shall be submitted prior to the issuance of the building permit.
 - c. Name, address, and contact information of proposed or potential system installer, the owner and operator of the BESS facility, and liability insurance provider.
 - d. A commissioning report meeting the requirements of NFPA 855 shall be submitted prior to final inspection.
 - e. Large-scale fire testing reports, per UL9540A, of the batteries used in the Energy Storage Systems shall be provided for cell, module and unit levels.
 - f. Documentation that separate fire protection permits will be obtained for each battery enclosure.
 - g. Documentation that separate fire alarm permits will be obtained based on the proposed design for monitoring all the fire suppression systems.
 - h. Prior to construction, soil testing conducted must include measuring for baseline content for heavy metals present in thermal runaway plume and off gassing. Prior to construction, air quality testing must measure baseline content for heavy metals present in thermal runaway plume and off gassing.
 - i. Documentation of soil corrosivity at project site is required. If soil is determined to be highly corrosive by a third-party expert, mitigation measures may be required to combat degradation, annual inspection and report on grounding system condition and maintenance of the grounding system are required.
 - j. Fault line analysis shall be included and shall include: risks associated with seismic activity, mitigation measures employed, and history of seismic activity at the project area.
 - k. All batteries integrated within the BESS shall be listed under UL 1973. The BESS equipment and configuration shall be listed and tested in accordance with UL 9540A large scale fire testing, either from the manufacturer or by field evaluation.
 - l. Communications and Battery Management Systems shall be listed and compliant with UL 1741, UL 9540, IEEE 2686, and IEEE 2688 standards.
- 5. Review of Augmentation Plans:**
 - a. BESS applications may include a plan for periodic augmentation to maintain the capacity of the system or nominally increase the capacity of the system for approval as part of the initial site plan application. Any augmentation greater than 10% of initial nameplate capacity will require a Use Permit amendment subject to Planning Commission approval. Augmentation greater than 20% will require a new Use Permit

application. Any utilization of reused battery modules shall require the submission of an augmentation plan and is subject to approval by the Director of Resource Management with concurrence of Office of Emergency Services.

- b. The owner of an operating BESS facility shall provide notice to the Department of Resource Management at least 90 days prior to the commencement of augmentation activities at the site of the BESS facility. The owner shall also provide an updated site plan that identifies any changes resulting from augmentation of the battery energy storage system.

SECTION XV

This Ordinance is exempt from the California Environmental Quality Act (Public Resources Code §21000, et seq.) (CEQA) pursuant to CEQA Guidelines (Cal. Code Regs., tit. 14, §15000 et seq.) Sections 15061(b)(3) [it can be seen with certainty that there is no possibility the activity in question may have a significant effect on the environment], 15307 [Class 7 categorical exemption for regulatory activity to assure the protection of natural resources], and 15308 [Class 8 categorical exemption for regulatory activity to assure the protection of the environment].

Under current Solano County Zoning Regulations, front-of-the-meter BESS facilities are allowed in all zoning districts in unincorporated Solano County as “Utility facility or infrastructure, outside of R.O.W.” This general land use category has no BESS-specific development standards to protect human health, safety, and welfare, as well as the County’s natural resources and the environment, which may be impacted by the siting of front-of-the-meter BESS. This Ordinance will not change existing conditions, other than to limit the placement of front-of-the-meter BESS facilities to those zoning districts that present the most conducive environment for safe placement consistent with the County’s General Plan. This Ordinance will not allow BESS facilities to be located in any new zoning districts where they were not previously allowed. This Ordinance also incorporates BESS-specific standards to ensure the protection of public health, public safety, natural resources, and the environment from the unique and complex risks these facilities pose.

SECTION XVI

Solano County Interim Ordinance No. 2024-1852-U, as extended by Ordinance No. 2024-1852-U-E and amended by Amendment No. 1 on August 26, 2025, is repealed in its entirety and shall be of no further force or effect. The Solano County Board of Supervisors has determined that, based on best available information, the regulations and standards set forth in Sections I through XIV of this Ordinance adequately alleviate the conditions which led to the adoption of Interim Ordinance No. 2024-1852-U under Government Code Section 65858.

SECTION XVII

This Ordinance will be effective thirty (30) days after its adoption.

SECTION XVIII

If any provision of this Ordinance or the application thereof to any persons or circumstances is held invalid, such invalidity shall not affect other provisions or applications of this ordinance which can be given effect without the invalid provision or application, and to this end the

provisions of this ordinance are hereby declared to be severable.

SECTION XIX

A summary of this ordinance will be published within 15 days of its adoption in the Fairfield Daily Republic, as newspaper of general circulation in Solano County.

Passed and adopted by the Solano County Board of Supervisors at its regular meeting on November 4, 2025 by the following vote:

AYES: SUPERVISORS _____

NOES: SUPERVISORS _____

EXCUSED: SUPERVISORS _____

MITCH H. MASHBURN, Chair
Solano County Board of Supervisors

ATTEST:
IAN M. GOLDBERG, Clerk
Solano County Board of Supervisors

By: _____
Alicia Draves, Chief Deputy Clerk

Introduced:

Adopted:

Effective:

Operative: