

Date of Hearing: June 25, 2025

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Cottie Petrie-Norris, Chair

SB 283 (Laird) – As Amended May 1, 2025

SENATE VOTE: 38-0

SUBJECT: Energy storage systems

SUMMARY: This bill establishes the Clean Energy Safety Act of 2025 and requires energy storage systems authorized by the California Energy Commission (CEC) or a local jurisdiction to comply with new fire safety standards and inspection requirements.

Specifically, **this bill:**

- 1) Requires the California Building Standards Commission (CBSC) and the Office of the State Fire Marshall (OSFM) to review and consider the most recently published edition of the National Fire Protection Association (NFPA) 855, Standard for the Installation of Stationary Energy Storage Systems (NFPA 855),¹ for incorporation into the next update of the California Building Standards Code adopted after July 1, 2026.
- 2) Requires an application submitted to the CEC for certification of energy storage facilities under AB 205 (Committee on Budget, Chapter 61, Statutes of 2022) Opt-in Permitting, and an application submitted to a local jurisdiction for an energy storage system, to include the applicant's certification that the facility has been designed in accordance with the most recently published edition of the NFPA 855, and, at least 30 days before submitting an application, the applicant met and conferred with the local fire department responsible for fire suppression in the area where the facility or system is proposed.
- 3) Prohibits the approval of those applications unless the CEC or local jurisdiction requires, as a condition of approval, that the system be constructed, installed, commissioned, operated, maintained, and decommissioned in accordance with the most recently published edition of the NFPA 855, that after installation is complete, but before commencing operations, the system be inspected by the local fire department responsible for fire suppression or by a representative or designee OSFM, and that the applicant pay for the inspection.
- 4) Authorizes a manufacturer or energy storage system owner to voluntarily design the energy storage system in accordance with a more recent edition of NFPA 855 before its operative date, if compliance with all applicable listing and testing requirements is demonstrated.
- 5) Authorizes a state or local entity to approve the construction of an energy storage management system only if it is located in a noncombustible dedicated-use building or is a remote outdoor installation, with terms defined in the California Building Standards Code.
- 6) Imposes a state-mandated local program by imposing additional duties on local officers.

¹ <https://www.nfpa.org/product/nfpa-855-standard/p0855code>

- 7) Includes findings that changes proposed by this bill address a matter of statewide concern rather than a municipal affair and, therefore, apply to all cities, including charter cities.
- 8) Provides that with regard to certain mandates no reimbursement is required by this act because a local agency has the authority to levy fees, charges, or assessments. Provides that, with regard to any other mandates, if the Commission on State Mandates determines that this bill contains costs so mandated by the state, reimbursement for those costs shall be made pursuant to the statutory provisions.

EXISTING LAW:

- 1) Establishes the CEC with exclusive authority to license thermal plants 50 megawatts (MW) or larger, exempt certain small thermal power plants from its jurisdiction, and certify eligible renewable energy generation and energy storage (Opt-in Certification) and Department of Water Resources energy facilities. (Public Resources Code § 25200 *et seq.* and 25500 *et seq.*)
- 2) Authorizes a person proposing an energy storage system with storage capacity of 200 megawatt-hours or more of energy to file with the CEC an application for certification -- commonly referred to as the “AB 205 Opt-in Certification” -- and provides that CEC certification is in lieu of any permit, certificate, or similar document required by a state, local, or regional agency for the use of the site and related facility. (Public Resources Code § 25545 *et seq.*)
- 3) Establishes the CBSC within the Government Operations Agency with duties that include adopting building standards codified in the California Building Standards Code every three years. (Health and Safety Code § 18901 *et seq.*)
- 4) Requires the OSFM, before the next triennial edition of the California Building Standards Code adopted after January 1, 2025, to propose to the CBSC updates to the fire standards relating to requirements for lithium-based battery systems. (Health and Safety Code § 13110.3)
- 5) Establishes the California Public Utilities Commission (CPUC) with regulatory authority over public utilities, including electrical corporations and requires the CPUC, as part of the Public Utilities Act, to implement and enforce standards for the maintenance and operation of facilities for generation and storage of electricity owned by an electrical corporation or located in the state to ensure their reliable operation. (Article 12 of the California Constitution and Public Utilities Code § 761.3)
- 6) Requires the CPUC to direct the state’s three largest electrical corporations to file applications for programs and investments to accelerate widespread deployment of distributed energy storage systems for specified purposes and authorizes the CPUC to approve, or modify and approve, programs and investments of an electrical corporation in distributed energy storage systems with appropriate energy storage management systems. (Public Utilities Code § 2838.2)

- 7) Requires the CPUC to determine appropriate targets, if any, for each load-serving entity to procure viable and cost-effective energy storage systems to be achieved by December 31, 2015, and December 31, 2020. Requires the governing board of each local publicly owned electric utility to initiate a process to determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems to be achieved by December 31, 2016, and December 31, 2020. (Public Resources Code § 2836)
- 8) Requires each battery energy storage facility located in the state to have an emergency response plan and emergency action plan that covers the premises of that facility. (Public Utilities Code § 761.3(g))

FISCAL EFFECT: According to the Senate Appropriations Committee, the fiscal effects of this bill are unknown, but potentially in excess of \$50,000 annually (General Fund) in state-mandated local program reimbursements, plus unknown but likely minor costs for the OSFM.

CONSUMER COST IMPACTS: Unknown.

BACKGROUND:

Growth in battery energy storage – California is increasingly relying on new and emerging energy storage technologies to support electric service reliability and help achieve the state’s ambitions greenhouse gas (GHG) reduction goals. Energy storage technology offers opportunities for balancing increasing volumes of intermittent renewable energy (such as solar and wind energy), allowing for the storage of energy during times when production is high but demand is lower, and discharging during times when production from renewable resources is more limited or not available. In particular, lithium-ion stationary energy storage development in California is accelerating rapidly. The technology is fast-tracked in utility procurements due to its ability to support the state’s clean energy and reliability goals cost-effectively. According to the CEC, in 2019, there were 250 MW of utility-scale lithium-ion battery systems operating and participating in the state’s wholesale power markets. Lithium-ion battery systems in the state has now grown to nearly 12,000 MW. In 2024, California made historic progress in clean energy deployment. The state brought more than 7,000 MW online – the largest amount in a single year in California’s history. This includes over 4,000 MW of new battery storage. According to the CPUC, the installed battery storage capacity is now over 20% of the state’s peak demand, and the state’s projected need for battery storage capacity is estimated at 52,000 MW by 2045.

Lithium-ion batteries – Lithium-ion batteries are comprised of an anode, cathode, separator, electrolyte, and two current collectors (positive and negative). The anode and the cathode store the lithium. The electrolyte carries positively charged lithium ions from the anode to the cathode and vice versa through the separator. The movement of the lithium ions creates free electrons in the anode, which creates a charge at the positive current collector. The electrical current then flows from the current collector through a device being powered to the negative current collector. The separator blocks the flow of electrons inside the battery. Compared to other high-quality rechargeable battery technologies (nickel-cadmium, nickel-metal-hydride, or lead-acid), lithium batteries have a number of advantages. Lithium-ion batteries are comparatively low maintenance, have high energy densities, and do not require scheduled cycling to maintain their battery life.

Thermal runaway – One of the primary risks related to lithium-ion batteries is thermal runaway, which is a phenomenon in which the lithium-ion cell enters an uncontrollable, self-heating state. Thermal runaway can result in extremely high temperatures, violent cell venting, explosion, smoke, and fire. Internal failures and external conditions can result in a thermal runaway. For example, defects in the cell that compromise the separator’s integrity can cause an internal short circuit condition that can result in thermal runaway. This is especially likely in cells of poor quality. External conditions can also cause thermal runaway including extreme high and low temperatures or overcharging. Lithium-ion battery fire and explosion are triggered by the thermal runaway reactions inside the cell. Lithium-ion batteries stored near or next to another battery or batteries can set off a chain reaction, making an already tough fire to fight even worse. When they reach thermal runaway, lithium-ion battery fires can burn for hours or even days as lithium-ion fires are prone to re-ignition due to the self-oxidizing nature of lithium salts in the battery.

Safety incidents at battery energy storage facilities – There have been four distinct and recent safety incidents at two separately owned battery energy storage facilities located at the Moss Landing Harbor location in Monterey County, which occupies one of the largest battery energy storage systems.

- On September 4, 2021, there was a safety incident at the Moss Landing Phase I (300 MW) lithium-ion battery energy system owned by Vistra Corporation that prompted an immediate shutoff of the facility. According to Vistra Corporation, an investigation found that smoke from a failed bearing in an air-handling unit in the building triggered a heat suppression system to improperly spray water on battery racks, causing damage and overheating.
- The same facility, though in a separate building, experienced a second incident on February 13, 2022, at its Phase II (100 MW) building. Following the incident, Vistra stated in a news release that there was early evidence that water hoses leaked and that some batteries short circuited, creating smoke in the building. Vistra subsequently decided to pause restart activities while they assessed the Phase II incident and incorporated any learnings. Both Vistra-owned facilities have since been brought back online.
- On September 20, 2022, a separate incident occurred at a neighboring battery energy storage facility (182 MW) at Moss Landing, but owned by Pacific Gas & Electric (PG&E). The battery fire at the storage facility led to a shelter-in-place advisory for the neighboring community, including to a local recreational vehicle camp. According to news reports, the fire smoldered for five hours as emergency responders are advised to not extinguish a battery fire, but allow it to burn itself out.
- More recently, on January 16, 2025, a fire erupted in the Phase I facility (300 MW) operated by Vistra Corporation. The battery systems are made of lithium nickel manganese cobalt oxides and ignited in the concrete hall. The fire burned for hours, and local authorities initiated evacuations of residents in the local community and road closures. This facility remains offline.

SB 1383 (Hueso, Chapter 725, Statutes of 2022) – Given California’s growing reliance on lithium-ion battery storage systems and the safety issues at Vistra storage facilities in 2021 and

2022, the Legislature adopted SB 1383 to expand CPUC oversight of electric generation facilities to include energy storage systems, by requiring the CPUC to amend the Generating Asset Owner (GAO) operation and maintenance standards contained in General Order (GO) 167. These standards apply not just to utility-owned facilities, but also facilities owned by third-parties. The CPUC's Safety and Enforcement Division (SED) implements GO 167 by conducting in-person audits at CPUC-jurisdictional electric generation (e.g., natural gas, combined cycle, solar, wind and geothermal) and storage facilities throughout the state. As part of the SED's responsibility to ensure compliance with GO 167, a team of auditors from the Electric Safety and Reliability Branch (ESRB) within SED regularly conduct comprehensive audits of power plants through performance data analysis, record review, field inspection, and plant staff interviews. In March 2025, the CPUC updated GO 167 (establishing GO 167-C) to implement SB 1383 and SB 38 (noted below) to establish standards for the maintenance and operation of energy storage systems, among other updates.²

SB 38 (Laird, Chapter 377, Chapter 2023) – SB 38 further expanded on the requirements of SB 1383 to explicitly require each battery energy storage facility located in the state, and subject to the CPUC safety requirements, to have an emergency response plan and emergency action plan that covers the premises of the battery energy storage facility. In the CPUC's recently adopted changes to GO 167-C, the CPUC: (1) established standards for the maintenance and operation of energy storage systems; (2) applied requirements for emergency response and emergency action plans to energy storage systems owners; (3) required generating asset owners to coordinate with local authorities in developing their emergency plans; (4) established logbook standards for energy storage systems and renewable generating assets, and revise logbook standards for each generating asset; (5) modified maintenance and operation standards for generating assets; (6) added provisions to enhance safety and effectiveness of energy storage systems operation and maintenance; among other provisions. The CPUC report that these updates do not conflict with the provisions of this bill.

Building Standards Code 2024 Triennial Code Adoption Cycle – The California Building Standards Code is the building code for California, and Title 24 of the California Code of Regulations. It is maintained by the CBSC, as directed by statute. New editions of the California Building Standards Code are published every three years in a triennial cycle with supplemental information published during other years. Changes made to each edition are based on proposals made by state agencies. Proposals are presented to the CBSC and must provide thorough justification for proposed changes. Proposals go through multiple phases during the adoption.

Chapter 12 (commencing with Section 1201.1) of Part 9 of Title 24 of the California Code of Regulations is the section of the California Fire Code related to energy systems. Chapter 12 was added to address standby and emergency power, portable generators, photovoltaic systems, fuel cell energy systems, and energy storage systems. The fire code includes more stringent requirements for lithium-based chemistries (fire containment and suppression, explosion protection, etc.) because they present a higher fire risk than lead-acid and nickel-cadmium.

NFPA 855, Standard for the Installation of Stationary Energy Storage Systems. NFPA is a private, non-profit standards development organization focused on safety advancement. They

² Resolution ESRB-13, March 13, 2025; <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-and-enforcement-division/esrb/generation/resolution-esrb-13.pdf>

develop standards that state and local officials can use as guidance to develop codes. NFPA 855 aims to ensure the safety and proper installation of energy storage systems, including batteries. It provides guidelines and requirements for design, construction, installation, and operation of energy storage systems, focusing on preventing fires and explosions, especially those using lithium-ion batteries. This standard also addresses the specific needs of different technologies used in energy storage.

AB 205 (Committee on Budget, Chapter 61, Statutes of 2022) – Among its many provisions, AB 205 established the CEC’s opt-in certification for siting of solar, wind and energy storage facilities that meet certain criteria. This expansion allows the CEC to oversee the permitting of clean and renewable energy facilities, including solar photovoltaic, onshore wind, and energy storage systems, and facilities that produce or assemble clean energy technologies or their components. Traditionally, the permitting of these facilities occurs by a local government agency. AB 205 allows the developer the option to choose between the local government and the CEC in filing their permit application for an eligible facility.. The Opt-In program requires the CEC to: complete in 270 days an environmental impact report under California Environmental Quality Act (CEQA); certify compliance with requirements for community benefits agreement, project labor agreements, and economic benefits; and ensure consistency with all laws, ordinances, regulations, and standards under the Warren-Alquist Act. The CEC has at least eight active project applications, with the Darden Clean Energy Project approved in June 2025; the first facility to be certified through this process.³

COMMENTS:

- 1) *Author’s Statement.* According to the author: “The fire at the Moss Landing battery storage facility was a tragedy for the local community and region when it prompted evacuations and raised serious concerns within the community about toxic smoke, heavy metals, and ash. As California expands battery storage to meet its clean energy goals, we must prioritize safety at every step and ensure that new battery storage facilities do not move ahead without being safe for first responders and the people who live and work around them. Fortunately, advancements in battery storage technology since the approval of the Moss Landing facility have provided critical insights into safer battery compositions and configurations. Senate Bill 283 provides a crucial tool and safeguard to ensure battery storage facilities are built and maintained with the highest level of safety and oversight by our local fire officials. SB 283 requires adoption of the [NFPA] 855 standards, which are widely recognized as the strongest standards for safety and hazard mitigation of battery storage facilities, and requires fire authority inspection and consultation at various stages before a facility goes online. The bill also prohibits the development of battery storage facilities in combustible buildings that were not constructed for the dedicated use of housing battery storage. SB 283 ensures that future battery storage facilities adhere to the highest fire safety standards, protecting first responders, local communities, and the integrity of our renewable energy transition.”
- 2) *Correcting the Definition of Energy Storage System.* This bill provides that its provisions related to local approvals apply to an “energy storage management system” as defined in Public Utilities Code Section 2838.2. The key distinction in this definition is for

³ <https://www.energy.ca.gov/news/2025-06/cec-approves-worlds-largest-solar-battery-storage-project-fresno-county-under>

equipment or tools that *manage* the storage facility, not the *actual facility* itself. Applying fire standards and other requirements on the managing tools rather than the actual facilities seems impractical and counter to the outcomes sought by this measure. This definition also includes residential customer-sited storage batteries. *In response to these concerns, the author proposes, and the committee recommends, amending the bill to strike “management” and set a threshold so the bill applies to large scale energy storage systems, as follows:*

8500. For purposes of this chapter, both of the following definitions apply:

(a) “Energy storage ~~management~~ system” means a stationary electrical energy storage system as defined by Chapter 12 of the California Fire Code and that is capable of storing 10 megawatt-hours or more of energy. ~~Has the same meaning as defined in Section 2838.2.~~

- 3) *Requiring Compliance with NFPA 855.* The author seeks to require that energy storage systems in California, if authorized under either the CEC or a local jurisdiction process, comply with NFPA 855. The NFPA is a private organization that sets standards for business. It is not a government agency, nor has enforcement authority.⁴ No current California law or regulation requires compliance with NFPA 855 for energy storage systems, although nothing precludes compliance. This bill seeks to bring the force of law through statute and regulation in the California Building Standards Code to require energy storage systems in California to comply with NFPA 855. At the same time, this bill recognizes that both the NFPA 855 standard and the California Building Standards Code are periodically updated. However, these provisions in the bill are not internally consistent and include overly complex references to timing and code versions. *To provide more clarity for regulators and potential applicants planning new energy storage systems, the committee recommends amending this bill to do the following:*
 - *Adopt conforming definitions of NFPA 855 with consistent references to require compliance with the most current version of NFPA 855.*
 - *Require the CBSC to adopt a provision at least as protective as the NFPA 855, not merely consider adopting it.*
- 4) *Authorizing More Protective Local Requirements.* For applications filed with either CEC or a local jurisdiction, the bill states that, if there is a conflict between NFPA 855 and the California Building Standards Code or any other state regulation, the more protective provision shall apply. Local government stakeholders state that the bill similarly should not preclude more protective local regulation. *Thus, the committee recommends amending the bill to add a new provision stating that this bill does not prevent a city or county from adopting and enforcing laws consistent with or more protective than this bill.*
- 5) *Fire Official Consultation and Inspection.* This bill requires energy storage system applicants, under both the CEC and local jurisdiction process, to certify that they have met and conferred with the local fire department before filing an application. No documentation of the substance or outcome of that consultation is required. This bill also requires either a local fire official or a representative or designee of the State Fire

⁴ See, e.g., <https://www.creativesafetysupply.com/qa/nfpa/who-enforces-nfpa-standards>

Marshall to inspect energy storage systems after construction and before operations commence. The inspector may be a different person and have no awareness of the initial fire official consultation. *To ensure accountability and coordination, and increase the likelihood that the fire safety benefits intended by these provisions are achieved, the committee recommends amending this bill to do the following:*

- *Require the application to include documentation of the consultation, including the date it occurred, names and titles of participants, a summary of fire safety matters discussed, and how the application incorporates measures to address those matters.*
- *Require that the fire official conducting the post-construction inspection have a copy of documentation of the initial consultation.*

6) *Clarifying What Applies to Pending Applications.* This bill, if enacted, will take effect January 1, 2026. As of that date, an energy storage system applicant seeking authorization from CEC or a local jurisdiction will be required to certify compliance with NFPA 855 and fire official consultation requirements, and CEC and local jurisdictions will be prohibited from authorizing an energy storage system unless the proposed system complies with NFPA 855 and consultation requirements. There is some ambiguity regarding applications already submitted but still pending approval on January 1, 2026. *Thus, the committee recommends amending the bill to specify that the approval provisions apply to any energy storage system application submitted to CEC or a local jurisdiction on or after January 1, 2026.*

7) *Different Styles of Energy Storage Systems.* As shown in the photographs in the Appendix, energy storage systems can be inside buildings, or outside, and/or in containers. This bill incorporates definitions from the California Building Standards Code related to different types of energy storage systems, including “dedicated-use building,” “non-combustible building,” and “remote outdoor installation.” The bill provides that a state or local entity may only approve the construction of an energy storage management system with over 600 kilowatt hours of storage capacity if it is located in a noncombustible, dedicated-use building or is a remote outdoor installation. Energy storage system stakeholders raise concerns that these provisions do not fully reflect system design and applicable provisions of the California Building Standards Code and NFPA 855. Clarity is needed to both ensure fire safety and avoid unnecessary confusion or delay that will impede growth of energy storage needed to meet state energy and climate goals. *The author proposes, and the committee recommends, amending the bill to strike the reference to 600 kilowatts hours, strike the reference to “remote” in outdoor installation, and add a definition of “outdoor installation, with the following revised prohibition in Section 8503: “A state or local entity may only approve the construction of an energy storage system if it is located in a noncombustible, dedicated-use building or it is an outdoor installation.”*

8) *Technical amendments.* This bill has mostly similar separate provisions that govern CEC approval and local jurisdiction approval of an energy storage system, with various inconsistencies in drafting. *The committee recommends several technical, conforming, and cleanup amendments.*

9) *Related Legislation.*

AB 303 (Addis) prohibits permitting of battery energy storage facilities of specified sizes at within specified distances to sensitive areas and removes battery storage facilities from the CEC AB 205 opt-in permitting provisions. Status: pending in this committee.

AB 1285 (Committee on Emergency Management) requires the State Fire Marshal, in consultation with the Office of Emergency Services, to develop fire prevention, response, and recovery measures for utility grade lithium-ion battery storage facilities. Status: pending in Senate Rules Committee.

AB 434 (DeMaio) prohibits, until January 1, 2028, a public agency from authorizing the construction of a battery energy storage facility and requires the OFSM to adopt fire safety guidelines and minimum standards for construction of a battery energy storage facility. Status: pending in this committee.

AB 588 (Patel) requires the OFSM to convene a lithium battery working group to identify those safety issues associated with lithium batteries and associated charging infrastructure. Status: held in the Assembly Appropriations Committee.

10) *Prior Legislation.*

SB 1152 (Limón) requires the OFSM, before the next triennial edition of the California Building Standards Code, to propose to the CSBC updates to the fire standards relating to requirements for lithium-based battery systems. Status: Chapter 781, Statutes of 2024.

SB 38 (Laird) requires each battery energy storage facility located in the state, and subject to specified safety requirements, to have an emergency response plan and emergency action plan for the facility. Status: Chapter 377, Statutes of 2023.

AB 205 (Committee on Budget) expands the CEC's siting jurisdiction to include solar, wind and energy storage facilities that meet certain criteria in lieu of local permitting. Status: Chapter 61, Statutes of 2022.

SB 1383 (Hueso) expands the CPUC's safety oversight of electric generating facilities to encompass energy storage facilities. Status: Chapter 725, Statutes of 2022.

AB 2514 (Skinner) requires the CPUC to determine appropriate targets for load serving entities to procure energy storage systems. Status: Chapter 469, Statutes of 2010.

11) *Double Referral.* This bill is double referred. Upon passage in this committee, it will be referred to the Assembly Committee on Local Government for its review.

REGISTERED SUPPORT / OPPOSITION:

Support

California Professional Firefighters
California State Association of Counties (CSAC)
California State Association of Electrical Workers

Coalition of California Utility Employees
County of Monterey
County of Santa Cruz
Democrats of Rossmore
League of California Cities
Monterey; County of
Orange County Fire Authority
Pacific Gas and Electric Company
Rural County Representatives of California (RCRC)
San Diego Gas and Electric Company
San Diego Regional Chamber of Commerce
San Luis Obispo County Board of Supervisors
Santa Cruz County Board of Supervisors
Southern California Edison
Tri County Chamber Alliance

Support If Amended

California Community Choice Association
Fluence Energy, INC.

Opposition

None on file.

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APPENDIX

OUTDOOR BATTERY ENERGY STORAGE FACILITIES



Battery storage facility, East Hampton, Long Island, NY

CONTAINERIZED BATTERY ENERGY STORAGE FACILITIES



INDOOR BATTERY ENERGY STORAGE FACILITIES



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