SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Josh Becker, Chair
2025 - 2026 Regular

Bill No:	SB 283	**Hearing Date:**	4/21/2025
Author:	Laird		
Version:	4/9/2025 Amended		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Nidia Bautista		

SUBJECT: Energy storage systems

DIGEST: This bill establishes the Clean Energy Safety Act of 2025 and requires various provisions to address fire safety standards for energy storage systems.

ANALYSIS:

Existing law:

1) Establishes the State Energy Resources Conservation and Development Commission (also known as the California Energy Commission (CEC)) with has 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) Establishes and vests the California Public Utilities Commission (CPUC) with regulatory authority over public utilities, including electrical corporations. (Article 12 of the California Constitution)

3) Establishes the California Building Standards Commission (CBSC) within the Government Operations Agency, the California Building Standards Law, and sets forth its powers and duties, including approval and adoption of building standards and codification of those standards into the California Building Standards Code. (Health and Safety Code §18901 *et seq.*)

4) Requires the State Fire Marshal, 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) Requires the CPUC, as part of the Public Utilities Act, to implement and enforce standards for the maintenance and operation of facilities for the generation and storage of electricity owned by an electrical corporation or located in the state to ensure their reliable operation. (Public Utilities Code §761.3)

6) Authorizes the CPUC, after a hearing, to require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner so as to promote and safeguard the health and safety of its employees, passengers, customers, and the public. (Public Utilities Code §768)

7) Authorizes a person proposing an eligible facility, including an energy storage system that is capable of storing 200 megawatt-hours or more of energy, to file with the CEC an application for certification for the site and related facility, commonly referred to as the "AB 205 Opt-in Certification." Provides that the certification issued by the CEC 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.*)

8) 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)

9) 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)

This bill:

1) Requires the CEC and the Office of the State Fire Marshal 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, 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 in accordance with the AB 205 Opt-in Permitting relating to certification of facilities by the CEC, and an application submitted to a local jurisdiction for an energy storage management 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, Standard for the Installation of Stationary Energy Storage Systems, 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, as provided.

3) Prohibits the approval of those applications unless the 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 of the State Fire Marshal, and that the applicant bear the cost of 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 with over 600 kilowatt-hours of storage capacity only if it is located in a noncombustible, dedicated-use building or is a remote outdoor installation, as provided.

6) Imposes a state-mandated local program by imposing additional duties on local officers.

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.

9) 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.

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 was 250 MW of utility-scale lithium-ion battery systems operating and participating in the state's wholesale power markets, which has 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 assess the Phase II incident and incorporate any learnings. Both Vistra-owned facilities have since been brought back on-line.

- 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 suppression system failed to distinguish the fire. Local authorities initiated evacuations of residents in the local community.

SB 1383 (Hueso, Chapter 725, Statutes of 2022). Given California's growing reliance on lithium-ion battery storage systems and recent safety issues at one of the state's largest lithium-ion battery storage facilities, SB 1383 expanded the CPUC Generating Asset Owner (GAO) operation and maintenance standards, contained in General Order (GO) 167-B to oversight of energy storage systems, not just electric generation facilities, including systems owned by third-parties. The CPUC's Safety and Enforcement Division (SED) implements GO 167-B by conducting in-person audits at CPUC-jurisdictional electric generation and storage facilities (e.g. natural gas, combined cycle, solar, wind and geothermal) throughout the state. As part of the SED's responsibility to ensure compliance with GO 167-B, 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. SB 1383 expanded the CPUC's authority to audit and inspect energy storage facilities in order to help ensure safety and reliability, potentially reducing future safety incidents and related unexpected loss of energy capacity on the electric system. As part of the safety oversight, facilities are required to comply with existing laws and statutes, including those related to ensuring protection of life and limb.

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 response to SB 1383 and SB 38, last month, the CPUC adopted changes to GO 167-C to: (1) to establish standards for the maintenance and operation of energy storage systems; (2) apply requirements for emergency response and emergency action plans to energy storage systems owners; (3) require generating asset owners to coordinate with local authorities in developing their emergency plans; (4) establish logbook standards for energy storage systems and renewable generating assets, and revise logbook standards for each generating asset; (5) modify maintenance and operation standards for generating assets; (6) add provisions to enhance safety and effectiveness of energy storage systems operation and maintenance; among other provisions.
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, which is granted the authority to oversee processes related to the building standards codes by the California Building Standards Law. 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 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. This opt-in permitting process offers developers an optional pathway to submit project applications, facilitating faster deployment of renewable technologies. Under AB 205, the CEC is the lead California Environmental Quality Act (CEQA) agency for environmental review and permitting for any facility that elects to opt into the CEC's jurisdiction. The Opt-In program requires the CEC to: complete in 270 days an environmental impact report under 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, though none have been approved by the agency.

Comments

Need for this bill? The author notes:

> The fire at the Moss Landing battery storage 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. It is essential that we apply these lessons to prevent future disasters so that California can continue to build a cleaner, more resilient future.

Bill requires adherence to NPFA 855 standards. SB 283 requires battery storage facilities to adhere to the NPFA 855 standards, which are widely recognized by the industry as the strongest standards for safety and hazard mitigation of battery storage facilities, and requires the CBSC to review NFPA 855 for adoption in the next version of the building standards. This bill requires a developer to consult with local fire authorities prior to the siting of any facility, and requires a facility to be inspected by fire authorities prior to any project going online, at the cost of the developer.

Concerns regarding the reference to energy storage management system and other definitions. The California Solar and Storage Association (CALSSA), in opposition to this bill, along with many of the comment letters from those with a "support, if amended" position, express concerns about the reference to energy storage management system in Section 5 of this bill. They note that the energy storage management system is not the battery energy storage system but a tool used to monitor or control the facility. They also raise concerns that the definition referenced is limited to those systems by which an electrical corporation can manage the charging and discharging of the distributed energy storage system in a manner that provides benefits to ratepayers.

They urge the author to refine the definition of a battery energy storage system. Additionally, CALSSA and California Community Choice Association (CalCCA) recommend that residential customer-sited storage be excluded from the new requirements. They contend that "without this clarification, any residential customer installing a battery at their residence would be required to submit designs to the local fire officials, meet and confer with local fire officials for fire

suppression and input on the content of emergency response plans, and seek a fire official sign off before operating the battery."

Projects under construction. Lastly, CALSSA and CalCCA urge the author to establish a clear date for the applicability of the new requirements as there are projects that will be under construction if and when this bill becomes effective. To address this uncertainty, CalCCA recommends that the new requirements apply only to project applications submitted on or after January 1, 2026.

Dual Referral. Should this bill be approved by this committee, it will be re-referred to the Senate Local Goverment Committee.

Prior/Related Legislation

AB 303 (Addis) of the current legislative session, prohibits permitting of battery energy storage facilities of specified sizes at within specified distances to sensitive areas and removes battery storage facilities within the CEC AB 205 opt-in permitting provisions.

AB 1285 (Committee on Emergency Management) of the current legislative session, 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. The bill is pending in the Assembly Appropriations Committee.

AB 434 (DeMaio) of the current legislative session, prohibits, until January 1, 2028, a public agency from authorizing the construction of a battery energy storage facility and requires the State Fire Marshal to adopt guidelines and minimum standards for the construction of a battery energy storage facility to prevent fires and protect nearby communities from any fire hazard posed by the facility, as specified. The bill is pending in the Assembly Committee on Utilities and Energy.

AB 588 (Patel) of the current legislative session, requires the State Fire Marshal to convene a lithium battery working group to identify those safety issues associated with lithium batteries and associated charging infrastructure, as specified. The bill is pending in the Assembly Committee on Emergency Management.

SB 1152 (Limón, Chapter 781, Statutes of 2024) required the California State Fire Marshal, 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.

SB 38 (Laird, Chapter 377, Statutes of 2023) required 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 that covers the premises of the battery energy storage facility.

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

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

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

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: Yes

SUPPORT:

California Professional Firefighters (Co-Sponsor)
California State Association of Electrical Workers (Co-Sponsor)
Coalition of California Utility Employees (Co-Sponsor)
American Clean Power- California, if amended
California Community Choice Association, if amended
California Energy Storage Alliance, if amended
County of Orange
Fluence, if amended
International Union of Painters and Allied Trades, District Council 16
International Union of Painters and Allied Trades, District Council 36
Pacific Gas and Electric Company
Rural County Representatives of California
San Diego Gas and Electric Company
Sierra Club California

OPPOSITION:

California Solar & Storage Association, unless amended

ARGUMENTS IN SUPPORT: The California State Association of Electrical Workers and the Coalition of California Utility Employees, two of this bill's co-sponsors state: "By setting clear, consistent safety standards for energy storage

systems, SB 283 will help protect workers, first responders, and communities while facilitating the responsible expansion of energy storage infrastructure."

The Rural County Representatives of California states:

> SB 283 commendably requires the state to update design standards for BESS systems. We hope these changes will serve as a foundational planning tool upon which local governments can rely and build, to ensure that BESS facility risks on neighboring communities and properties will be mitigated. We note that NFPA 855 serves as a regulatory floor that can be supplemented by local jurisdictions to meet unique local needs and circumstances. For example, NFPA 855 has fairly low setback distances that are far below the distances many California local governments have determined to be necessary to protect community safety.

ARGUMENTS IN OPPOSITION: The California Solar and Storage Association (CALSSA) states:

> While CALSSA supports the intent of SB 283 to enhance safety for ESS, Section 5 of the bill would impose additional and duplicative requirements on systems that are already governed by existing California Building Standards Codes and local permitting processes. These overlapping regulations would complicate, rather than streamline, ESS deployment, especially in the behind-the-meter market segment, without meaningful additional safety precautions.

-- END --