Date of Hearing: July 12, 2023

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Eduardo Garcia, Chair
SB 38 (Laird) – As Amended July 3, 2023

SENATE VOTE: 40-0

SUBJECT: Battery energy storage facilities: emergency response and evacuation plans

SUMMARY: : This bill requires each battery energy storage facility located in the state to have an emergency response plan and an evacuation plan that covers the premise of the battery energy storage facility. Specifically, **this bill:**

1) Requires the owner or operator of the facility, in developing the plan, to coordinate with local emergency management agencies, unified program agencies, and local first response agencies. And mandates the California Public Utilities Commission (CPUC) to require the owner or operator of the facility to submit the plan to the CPUC.

EXISTING LAW:

1) Requires the California Energy Commission (CEC) to undertake various actions to support the state's clean energy and pollution reduction goals, including implementing the Long-Duration Energy Storage Program by providing financial incentives for projects to deploy innovative energy storage systems to the electrical grid for purposes of providing critical capacity and grid services. (Public Resources Code § 25640 et seq.)

2) Grants the CPUC with regulatory authority over public utilities, including electrical corporations. (Public Utilities Code § 701)

3) Requires the CPUC to determine appropriate targets 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. Also, 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)

4) 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)

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 California Occupational Safety and Health Standards (Cal/OSHA) Board within the Department of Industrial Relations (DIR) to establish by an affirmative vote of

at least four members (from a total of seven), to adopt, amend or repeal occupational safety and health standards and orders. Requires Cal/OSHA to adopt standards that are as effective as the federal standards, as specified. Also establishes that Cal/OSHA is the only agency in the state authorized to adopt occupational safety and health standards. (Labor Code § 142.3)

7) Requires every employer to furnish employment and a place of employment that is safe and healthful for the employees, including requiring an injury prevention plan. (Labor Code § 6401 et seq.)

FISCAL EFFECT: According to the Senate Committee on Appropriations, this bill will result in approximately $13.6 million from ratepayer funds. Of that amount, CPUC anticipates costs of $3.4 million each year for three years in order to develop, in collaboration with other state, local, and regional agencies, the requirements of emergency response and evacuation plans, possibly as part of a rulemaking process. One-time costs include $3.5 million to update the CPUC's Energy Safety Reliability Branch database to receive and manage annual filings of emergency response and evacuation plans. The CPUC also estimates ongoing costs of $3.2 million annually from ratepayer funds for evaluation and oversight of plans, enforcement of safety standards, and provision of input for subsequent amendments or updates to these plans, among other things.

BACKGROUND:

Benefits of Energy Storage. As California strives to meet its energy and climate goals, energy storage has become a crucial component in helping the state meet these goals while supporting the electric grid in balancing between supply (generation) and demand (consumer use). Energy storage provides several benefits for energy producers and consumers alike:

- Helps meet energy demand: When supply is high and demand is low, storage can store excess energy for later use. When demand is high and supply is low, storage can discharge stored energy to the electric grid for use, avoiding shortages or outages.[1]
- Strengthens the electric grid: Due to its ability to discharge energy quickly when needed, energy storage can rapidly respond to changes on the electricity grid. As such, energy storage can help add flexibility and resilience to the electric grid.[2]
- Supports the integration of renewable energy: While some renewable energy technologies—such as wind and solar—experience intermittent periods of "down-time" during which energy cannot be produced, electricity demand must still be met. Storage helps plug these gaps by providing energy during these periods of variable output and therefore stabilizing the electricity supply.[3]

Energy Storage in California. AB 2514 (Skinner, Chapter 469, Statutes of 2010) required the CPUC to open a proceeding to establish procurement targets for each investor-owned utility (IOU). It also required the governing board of each publicly owned utility (POU) to adopt energy storage system procurement targets and report their progress to the CEC. In 2013, the CPUC issued a decision in response to AB 2514 establishing the state's first energy storage

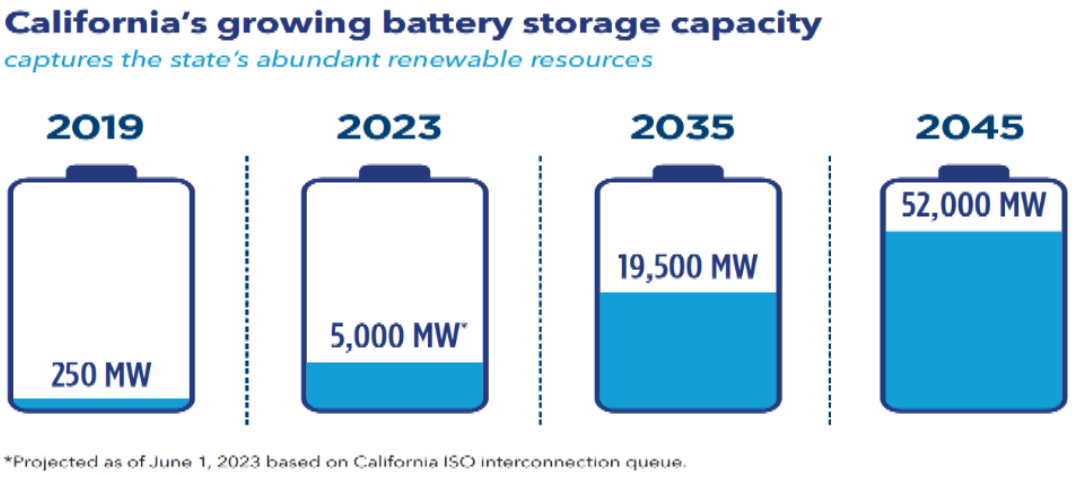
---

[1] Union of Concerned Scientists; "Energy Storage: How it Works and Its Role in an Equitable Clean Energy Future;" https://www.ucsusa.org/resources/how-energy-storage-works
[2] Union of Concerned Scientists; "Energy Storage in California"; https://ucs-documents.s3.amazonaws.com/clean-energy/energy-storage-in-california-explainer.pdf
[3] Ibid

procurement target of 1,325 megawatts (MW) by 2020.[4] This legislation was the first of its kind in the United States.

California is increasingly relying on new and emerging energy storage technologies. In particular, lithium-ion stationary energy storage development in the state 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. As shown in Figure 1, battery storage capacity has increased by nearly 20 times over the last 5 years — from 250 megawatts (MW) in 2019 to 5,000 MW by 2023. Today's fleet of storage resources can capture enough electricity to power up to 5 million California homes. By 2045, capacity is projected to increase another 10 times to 52,000 MW, with lithium-ion batteries as the main type of storage.[5]Although lithium-ion batteries are the most recognized form of energy storage, today's portfolio of storage technologies is diverse and expanding due to research and development efforts happening in California and around the world.

Figure 1: California's Growing Battery Storage Capacity[6]



Safety Incidents at the Moss Landing Harbor. In the last two years, there have been three distinct safety incidents at separately owned battery energy storage facilities located at the Moss Landing Harbor location in Monterey County which occupies one of the largest[7] battery energy storage systems in the world.

- Vistra's Moss Landing's energy storage facility consists of two separate buildings, the first housing a 300 MW - Phase I system and the second, housing a 100 MW - Phase II system. On September 4, 2021, there was a safety incident at the Moss Landing Phase I facility that prompted an immediate shutoff. An investigation found that smoke from a

[4]D. 13-10-040
[5]CEC; "New Data Shows Growth in California's Clean Electricity Portfolio and Battery Storage Capacity"; https://www.energy.ca.gov/news/2023-05/new-data-shows-growth-californias-clean-electricity-portfolio-and-battery#:~:text=According%20to%20the%20California%20Independent,to%205%20million%20California%20homes
[6] Ibid
[7] Monterey Weekly, "Even after two shutdowns, Vistra's Moss Landing battery plant expects to nearly double"; https://www.montereycountyweekly.com/news/local_news/even-after-two-shutdowns-vistra-s-moss-landing-battery-plant-expects-to-nearly-double/article_4fb66e0c-9a5b-11ec-a940-97fe3a9f84cb.html

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.[8]

- The same facility, though in a separate building, experienced a second safety incident on February 13, 2022, at its Phase II 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 assessing the Phase II incident and incorporating any learnings from the incident.[9] 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) which is a Tesla installation at Moss Landing, but owned by Pacific Gas & Electric (PG&E).[10] The battery fire which involved a single Tesla megapack[11] at the storage facility led to a shelter-in-place advisory for the neighboring community, including 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 to allow it to burn itself out.

CPUC's Authority. CPUC General Order 167-B establishes standards for the maintenance and operation of electric generating facilities and power plants so as to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated.[12] The CPUC's Safety and Enforcement Division (SED) [13]conducts in-person audits at CPUC-jurisdictional electric generation facilities (e.g. natural gas, combined cycle, solar, wind and geothermal power plants) throughout the state. A team of auditors within SED regularly conduct comprehensive audits of power plants through performance data analysis, record review, field inspection, and appearing at CPUC safety proceedings. During these audits, SED reviews the generator's records and manuals, and inspects the facility to ensure that the generator's operation and maintenance of the facility is in accordance with GO 167-B. In addition to scheduled audits, SED also conducts incident investigations at generation facilities and outage investigations. SED has the authority to issue citations with penalties against utility operators who violate public utility safety codes and requirements. Recently, SB 1383 (Hueso, Chapter 725, Statutes of 2022) expanded the CPUC's current safety operation and maintenance standards of electric generation facilities to include oversight of energy storage systems owned by an electrical corporation or located in the state.

---

[8] Vistra Corp; "Vistra Announces Investigation Findings and Corrective Actions Related to Fall 2021 Incident at Moss Landing Energy Storage Facility"; https://investor.vistracorp.com/news?item=217
[9] ETN News; "Vistra restarts Phase I and Phase II of Moss Landing Energy Storage Facility"; https://etn.news/energy-storage/vistra-restarts-phase-i-and-phase-ii-of-moss-landing-energy-storage-facility
[10] CNBC, "Tesla Megapack Battery Caught Fire at PG&E Substation in California"; https://www.cnbc.com/2022/09/20/tesla-megapack-battery-caught-fire-at-pge-substation-in-california.html
[11]Tesla's Megapacks are giant batteries that can be used to stabilize power grids and prevent outages — a single unit can power an average of 3,600 homes for one hour, according to the company. The batteries are designed for utilities and large-scale commercial projects.
[12] CPUC, "General Order No.167" https://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/108114.htm
[13] CPUC, "Safety and Enforcement Division"; https://www.cpuc.ca.gov/about-cpuc/divisions/safety-and-enforcement-division

Existing Law and Related Regulations. Current statutory requirements and related regulations[14] require employers to provide a safe environment for workers. This includes emergency action plans and evacuation procedures regarding fires and other emergency events. As such, employers who operate battery energy storage facilities are subject to the current statutory requirements, though there are no specific requirements for these facilities as there may be with high risk facilities, such as refineries.

COMMENTS:

1) *Author's Statement.* According to the author, "Last September, California saw record temperatures putting immense strain on our state's electrical grid. We were able to avoid blackouts in part due to our investments of 3,500 megawatts of clean energy battery storage. Increasing the state's battery storage is essential to reaching our clean energy goals, but we also have to ensure that these facilities have safety systems in place to ensure the safety of workers and surrounding communities."

2) *Local Concerns.* According to the author, local residents and other community stakeholders have expressed concerns about the safety and potential risks of battery energy storage facilities. A town hall meeting to discuss these concerns has been in the works but has been delayed due to the recent and repeated winter storms affecting the region. While the transition to energy storage continues to surge rapidly, these recent safety and fire incidents are becoming increasingly common and destructive – and safety measures for residents around storage facilities will have to be put in place. This bill requires each battery energy storage facility located in the state to have an emergency response plan and an evacuation plan that covers the premise of the battery energy storage facility. While the oversight process of this bill is unclear, the provisions of the bill may be helpful in addressing some of the safety concerns and potential risks of battery energy storage facilities that have recently become prevalent in Monterey County.

3) Prior Legislation

   AB 2667 (Friedman) would have established a program at the CEC to provide incentives for commercially available distributed energy resources, specifically, behind-the-meter energy storage systems or self-generation systems paired with energy storage systems. The bill would have established the Integrated Distributed Energy Resources Fund as a special fund in the State Treasury, the moneys which would be available to CEC, upon appropriation by the Legislature, for purposes of the bill. The bill would have required CEC to administer the fund in consultation with the CPUC and CARB to provide incentives for eligible resources to support statewide customer adoption of clean distributed energy resources. Status: *Failed passage on the Senate Floor in 2021.*

   SB 700 (Wiener) authorized the continuation of the Self-Generation Incentive Program and made $830 million of funding available for behind the meter storage technologies through 2025. Status: Chapter 839, Statutes of 2018.

[14] California Code of Regulations Department of Industrial Relations Subchapter 7 General Industry Safety Orders, including § 3220

SB 801 (Stern) required Southern California Edison to deploy 20 MW of energy storage in response to reliability needs. Additionally mandated the Los Angeles Department of Water and Power to identify 100 MW worth of energy storage procurement opportunities to address reliability concerns associated with the Aliso Canyon Natural Gas Storage Facility. Status: Chapter 814, Statutes of 2017.

AB 2868 (Gatto) accelerated the deployment of storage among California's three investor-owned utilities (IOUs) by an additional 500 MW by 2024, with no more than 25% of that capacity being behind the meter storage. Status: Chapter 681, Statutes of 2016.

AB 33: (Quirk) directed the CPUC and the CEC to evaluate the feasibility of long-duration bulk energy storage in supporting renewable energy integration. Status: Chapter 680, Statutes of 2016.

AB 2514 (Skinner) requires the CPUC to open a proceeding to establish procurement targets for each IOU and requires the governing board of each POU to adopt energy storage system procurement targets and report their progress to the CEC. Status: Chapter 469, Statutes of 2010.

REGISTERED SUPPORT / OPPOSITION:

Support

County of Monterey
Health Officers Association of California

Opposition

None on file

Analysis Prepared by: Lina V. Malova / U. & E. / (916) 319-2083