BOARD OF SUPERVISORS
AGENDA LETTER

Agenda Number:

Clerk of the Board of Supervisors
105 E. Anapamu Street, Suite 407
Santa Barbara, CA 93101
(805) 568-2240

Submitted on:
(COB Stamp)

Department Name:	Community Services
Department No.:	057
Agenda Date:	March 11, 2025
Placement:	Departmental Agenda
Estimated Time:	45 Minutes
Continued Item:	No
If Yes, date from:	N/A
Vote Required:	Majority

TO: Board of Supervisors

FROM: Department Director: Jesús Armas, Community Services Director (805)568-2467

SUBJECT: Informational Report Regarding Battery Energy Storage Systems, and Moss Landing Fire

County Counsel Concurrence

As to form: Yes

Auditor-Controller Concurrence

As to form: N/A

Risk Management Concurrence:

As to form: N/A

Recommended Actions:

That the Board of Supervisors:

a) Receive and File this report.

b) Provide direction to staff as appropriate.

c) Find that the proposed action is an organizational or administrative activity that will not result in direct or indirect physical changes in the environment and is therefore not a project under CEQA Guidelines 14 CCR 15378(b)(5).

Summary Text:

The recent fire of a battery energy storage system (BESS) located in Moss Landing has prompted questions regarding the safety of such facilities. This item is presented for informational purposes and to provide an opportunity for the Board to provide direction to staff as appropriate.

Background:

The Moss Landing fire erupted in a re-purposed building constructed in the 1950's by PG&E when the natural-gas fueled power plant was initially constructed. Today, this BESS is owned and operated by Vistra Energy. (PG&E also owns a BESS nearby.) According to Vistra's website, the company is a Fortune 500 retail electricity and power generation company based in Irving, Texas, with a "diverse portfolio that includes natural gas, nuclear, coal, solar, and battery energy storage facilities."

In terms of size, the BESS is a 300 megawatts/1,200 megawatt-hours, lithium-ion battery storage facility. The battery system followed an older installation pattern, lacking modern compartmentalization and fire suppression measures common in more recent systems. Moss Landing's design placed large numbers of high-energy battery racks in a single enclosed space. As a result, flames were able to spread rapidly, impairing the ability of fire personnel and other first responders to suppress or extinguish the fire.

Press accounts indicate the fire resulted in the evacuation of approximately 1,200 residents, the closure of Highway 1 and public facilities, due to thick smoke and potential release of toxic material. The cause of the fire remains under investigation. The extent of the release of toxic material is in dispute, and remains under investigation.

The Moss Landing BESS became operational in December 2020. It is unlikely the manner in which the BESS was designed would be approved today, as its design is not in keeping with current standards. Newer battery storage facilities rely on modular, containerized systems with increased spacing between the containers, in order to isolate and contain fires within individual units. Generally, they are installed in open areas and not within a structure.

Moreover, the composition of the battery itself is undergoing a change. It has been reported the Moss Landing facility contained nickel manganese cobalt (NMC) batteries, which are known to be more reactive than the lithium iron phosphate (LFP) batteries used in the vast majority of BESS installed today.

Older battery storage systems, like the one in Moss Landing, are more prone to overheating, exacerbated by fact they were often installed inside, close to one another, with limited spacing between the batteries. Today's battery storage systems tend to have greater spacing between each batter, utilize suppression systems which can contain and isolate a fire, thereby reducing the risk of a major event.

State Regulatory Information

In 2022, the Governor signed AB 205, enabling certain size battery storage systems capable of storing 200 megawatt-hours (MWh) or more to forego local land use approval process and instead opt-in to a state review and approval process under the auspices of the California Energy Commission (Attachment A is the CEC's Opt-In Fact Sheet.) The Opt-In program requires the California Energy Commission to complete an Environmental Impact Report under CEQA.

Following the fire, Assemblymember Dawn Addis, D-Morro Bay, introduced AB 303. Key elements of this legislation include restoring local permitting authority, and establishing setbacks of 3,200 feet from sensitive receptors, including schools, hospitals and agricultural land.

On March 13, the state Public Utilities Commission will hold a hearing to consider changes to its procedures regarding oversight of energy storage systems. Among other changes, the PUC will consider adopting revised regulations which will 1) establish standards for the maintenance and operation of energy storage systems, 2) require operators to prepare and adopt emergency response and emergency action plans for each Energy Storage System and 3) require operators to coordinate with local authorities in developing their own emergency plans.

County Planning and Development Information

Within the County's jurisdiction, there are three BESS projects that have been permitted by the County, two of which are currently constructed and operative (ORNI, SEPV) and one which is currently under construction (Painter). Each of the projects are comprised of power (battery) packs, transformers, switchgear and other related equipment. The ORNI 34 LLC project is a standalone 10 MW BESS project which is currently operational and located immediately east of the Carpinteria SCE substation on Foothill Road. The Painter BESS project is currently under construction and will be a standalone 10 MW BESS project located immediately north of the Carpinteria SCE substation on Foothill Road. The SEPV Cuyama project is an

operative 3 MW BESS installation associated with a 3 MW utility-scale solar project located immediately adjacent to the larger Cuyama Solar Array in the Cuyama valley.

Planning and Development is also currently permitting two additional BESS facility requests including a 50 MW proposal associated with the Strauss Wind Energy project and a 7.5 MW proposal associated with a new private solar development at the Imerys mine site near Lompoc.

BESS projects are permitted with a Conditional Use Permit under the jurisdiction of the Planning Commission which requires a public hearing and noticing to surrounding properties. For each project, staff works with a consultant to perform a hazards analysis to study the unique features of each project and how any identified hazards can be minimized through mitigation measures. These measures commonly include physical separation of the battery packs to limit the extent of potential incidents, and fire detection and suppression equipment. These projects are subject to CEQA and with the exception of the Painter project, have undergone additional study in a Mitigated Negative Declaration.

County Fire Information

As reported in the Santa Barbara Independent, a 60-megwatt BESS is located in Goleta. Santa Barbara County Fire was involved in the planning and development of the project through Goleta City's permitting process. A fire hazard analysis report and a Fire Protection Plan was required for the project, as well as, numerous days of training for the Santa Barbara County Fire Stations closest to the facility and would respond in the event of a fire to the BESS facility.

Key differences exist between the Moss Landing BESS and the Goleta BESS, along with BESS projects currently in development within the County. The Moss Landing BESS pre-dated International and National codes and standards, whereas Goleta was subject to numerous codes and standards intended to ensure system safety. Moss Landing commenced construction before California began enforcing the 2018 International Fire Code (IFC), which was the first to address large battery energy storage projects. The Goleta BESS project, on the other hand, was subject to safety codes and test standards including the most recent 2021 IFC, as well as 2023 edition of NFPA 855 and 2021 edition of UL 9540. These more recent standards require additional testing and utilize proven measures that significantly reduce the risk of catastrophic outcomes.

With regard to battery technology, Moss Landing utilized an older chemistry, Nickel-Manganese-Cobalt (NMC), more prone to fire than the chemistry used at Goleta. NMC batteries have a significantly lower threshold for temperature where a thermal runway might occur. The Goleta BESS, and newer BESS projects, utilize Lithium-Iron-Phosphate (LFP) chemistry. Tesla and the Megapack product installed at the Goleta BESS have been UL tested and certified, with temperature thresholds much higher and more stable chemistry. As a result of the testing and certification, Lithium-Iron-Phosphate (LFP) are arguably safer than NMC and much less prone to thermal runaway. Additionally, any resulting fire involving LPF batteries are designed to produce significantly less smoke than NMC batteries, therefore releasing fewer byproducts of combustion into the environment.

The Moss Landing fire was visibly dramatic due to the fact it was an indoor system, vulnerable to major incidents, whereas Goleta BESS is an outdoor system designed for a thermal runway incident to be individually contained in thermal cabinets. Thermal cabinets and the enclosed batteries are field tested and designed to ensure fire incidents do not propagate from container-to-container; that is why outdoor systems are the industry standard today. Although thermal runway events can

never be completely ruled out; testing, requirements and certifications required of current systems significantly mitigate large scale fires at newer facilities such as Goleta BESS.

Caballero Battery Energy Storage System

On a related note, the Caballero Battery Energy Storage System located in Nipomo is scheduled to be operational this year. Approved by the San Luis Obispo County Planning Commission in 2023, the facility is located on approximately 6 acres of a 20-acre parcel on Joshua St., about 1,000 feet west of Highway 101.

The staff report presented to the Commission, describes the project as 100-megawatt/400-megawatt hours facility, which will include "container units to house battery banks and store electricity to dispatch into the local PG&E grid." Unlike the situation at Moss Landing, these battery units will be stored outside.

Project conditions of approval require compliance with the California Fire Code, and National Fire Protection Association (NFPA) and Underwriter Laboratories (UL) standards, as well as preparation of an Emergency Response Plan to be followed in managing major emergencies.

In light of Caballero's proximity to Santa Barbara County, the Office of Emergency Management was asked to provide information for inclusion in this Board Letter. The OEM reports it is collaborating with the San Luis Obispo County Office of Emergency Services to develop a joint standard operating procedure (SOP) in the unlikely event of a fire at the Caballero BESS facility. Fires at this facility may release hazardous materials and as a result, any fire at this facility will be treated as a hazardous materials incident. Due to the nature of this type of incident and the facility's location, the response would likely be multi-jurisdictional with the potential to require mutual aid from Santa Barbara County response agencies. Additionally, depending on the circumstances of the fire and wind conditions, there is a small potential for protective actions within Santa Barbara County. This SOP does not provide on-scene tactical guidance but rather reaffirms how each county's standard emergency coordination practices would be utilized to coordinate such an event. The goal of the joint planning process is to continue to build our cross-county partnership, pre-identify roles and responsibilities, and support each agency's readiness for such an event.

Questions

Representatives from Central Coast Community Energy (3CE), and staff from Fire, Planning and Development, and Office of Emergency Management will be available to respond to questions.

Special Instructions:

N/A

Attachments:

Attachment A - California Energy Commission Opt-In Fact Sheet

Authored by:

Jesús Armas, Director, Community Services Department
Errin Briggs, Deputy Director, Energy Minerals and Compliance
Fred Tan, Fire Marshal
Kelly Hubbard, Director, Office of Emergency Management