California FOREVER

County of Solano
675 Texas Street
Fairfield, CA 94533
Attn: Board of Supervisors
Bill Emlen, County Administrator
James Bezek, Director of Resource Management
BESS Technical Working Group: Priscilla Yeaney, Michael O'Connor, Robyn Rains, Scott Murtishaw, Sarah Dunn, Andrew Dye

October 16, 2024

Siting of Battery Energy Storage Systems (BESS) in Southeastern Solano County

Dear Board of Supervisors, Mr. Emlen, Mr. Bezek, Ms. Yeaney, Chief O'Connor, Ms. Rains, Mr. Murtishaw, Ms. Dunn, and Mr. Dye,

We are writing to respectfully ask that when the BESS Moratorium is replaced with a permanent ordinance, these systems are permitted to be sited in unincorporated southeastern Solano County — roughly defined as those areas south of Creed Road, east of the Suisun Marsh, and west of Rio Vista — as long as the location complies with a set of health and safety criteria, including minimum distance from any existing or new neighborhoods.

We believe that southeastern Solano County is the ideal place to locate BESS because it is far away from sensitive land uses like residential communities and sites with vulnerable populations like schools and hospitals, would not displace prime agricultural land or ecological resources, and already contains major electrical infrastructure including multiple high voltage transmission lines, multiple electrical substations, one of the largest wind farms in the United States, and three peaker plants. For example, the Lambie Industrial Park — which is currently zoned industrial, is far from existing residential communities and other sensitive uses, and has a large amount of level acreage outside of mapped flood areas — would be an ideal location for BESS storage. Any new neighborhoods or other projects can be sited at a distance from selected BESS sites as well.

Supporting BESS in Southeastern Solano County would help achieve both the goals you discussed at a recent board meeting for dramatically increasing tax revenues in unincorporated Solano County, and the state's decarbonization and grid resilience goals.

With regards to tax revenues, BESS installations generally cost hundreds of millions, and result in corresponding amounts of assessed value. This means that BESS can generate millions of dollars per year in additional property taxes.

With regards to clean energy, BESS are critical for advancing the State's decarbonization goals under SB 100 and improving the reliability and efficiency of the electric grid across the region. In southeastern Solano, BESS could be complementary to the vast Montezuma Hills Wind Resource Area generation resources, as well as the proposed 2 gigawatts of clean solar power on our other landholdings. The development of utility BESS in this area would generate hundreds of millions of dollars in private investment, millions of dollars in tax revenue, and hundreds of jobs over the course of its life, greatly benefitting the entire county. We look forward to working with the Board of Supervisors and Solano County staff to make it a reality. We would welcome a discussion with the members of the planning staff working on the permanent ordinance on this matter.

In support of this request, we are providing the following:

(1) Background
(2) Potential siting
(3) Recommendations for implementation

Background

BESS have seen significant safety improvements over the years through various advancements in technology, design, and practices. The failure rate of BESS has dropped significantly, with one estimate suggesting a 97% reduction between 2018 and 2023[1]. Here are some examples of how BESS safety has improved:

- Improved battery chemistry[2]
- Enhanced design of cells, containment and ventilation systems that provide multi-stage protection against thermal runaway[2,3]
- More rigorous testing and certification protocols[1]
- Improved codes and standards, such as specialized codes like NFPA 855 and relevant sections of the International Fire Code (IFC)[4]
- Advanced monitoring and management systems[4]
- Enhanced emergency response planning with greater frequency of implementation

This letter addresses utility BESS which are directly connected to an electric utility's distribution or transmission infrastructure only, as opposed to smaller scale BESS, such as those installed "behind-the-meter" in homes and commercial parcels.

[1] https://blog.ucsusa.org/guest-commentary/5-things-to-know-about-battery-storage-safety-2/
[2] https://cleanpower.org/resources/claims-vs-facts-energy-storage-leading-on-safety/
[3] https://www.nvfc.org/event/webinar-large-battery-storage-systems-and-safety/
[4] https://www.travelers.com/resources/business-industries/energy/battery-storage-system-advancements

Recognizing the recent safety improvements, the Board of Supervisors has generally been supportive of utility BESS. For example, the ordinance language was changed from "prohibition" to "temporary prohibition," so as not to inadvertently signal that the Board would be forever prohibiting BESS. The primary concern has been location of installation. The Board has expressed a strong desire to make sure that utility BESS are located appropriately away from sensitive uses.

The following are excerpts from various public meetings, where County residents, staff, and elected officials have specifically identified Lambie Industrial Park as the optimal site for BESS.

January 23, 2024 Board of Supervisors Meeting

Board Chair Mashburn: "*I would like to point out that there are innumerable areas within this county - right now - that are viable. One of them was already designated as a use and a land use by our County at the Lambie Industrial Park, where there is a peaker plant, so you have access to the grid. There is available land. It's a prime location… I'd also point out that we have a wind resource area with innumerable windmills and companies that access the grid with regularity in order to pump that electricity back in, and in locations with almost no impact on the community… So when you're looking, it seems that we already have some very prime areas in the county that we might be able to suggest.*"

September 17, 2024 Land Use Committee Meeting

In its report out from a July 18, 2024 public workshop on BESS hosted by the Solano Country Planning Division: "*Some residents suggested locating BESS projects in the Lambie Industrial Park, where existing natural gas peaker plants offer grid interconnection without the same concerns as those near the Vaca Dixon substation.*"

Potential siting of BESS

We propose that BESS be permitted in southeastern Solano County, roughly defined as south of Creed Road, east of the Suisun Marsh, and west of Rio Vista. We have carefully considered the siting of utility BESS relative to existing residents and proposed land uses in the East Solano Plan. We propose the following siting criteria for BESS for both existing and proposed land uses:

1. No utility BESS installations shall be placed within 2,000 feet of existing residential buildings and sensitive uses such as schools, hospitals, and day care facilities.

2. No parcels containing utility BESS shall share a property line with or be adjacent across a right-of-way to a commercial or residential property, unless the BESS facility itself is setback at least 1,000 feet from the property line(s) in question.

These standards apply concurrently. Thus, if a BESS facility is sited on a parcel adjoining a sensitive use such as a hospital, the BESS facility must not only be 2,000 feet away from the hospital itself, but also 1,000 feet away from the shared property line with the hospital. This conservative and concurrent setback distance ensures that nearby sensitive uses maintain full and safe use of their property.

Recommendations for implementation

In addition to siting criteria for BESS, we have evaluated the best practices for how developers, owners, and operators should be required to construct, operate, and decommission BESS facilities so as to ensure public health and public safety.

All utility BESS systems would comply with SB 38, which requires owners and operators to prepare emergency response and emergency action plans in coordination with local emergency management agencies, unified program agencies, and local first response agencies. This ensures there are appropriate safety measures to minimize any impacts to public health from fires or other hazardous situations occurring at the BESS facility.

In regards to design and development standards, we recognize that most counties and municipalities do not have building code governing utility BESS. In addition to compliance with State building code, including the California Fire Code, we believe additional local standards are needed. The City of Menifee — home of the Nova Power Bank, one of the nation's biggest BESS facilities, which is nearing completion[5] — worked with safety experts to develop a BESS ordinance that governs BESS development and decommissioning. This establishes requirements to ensure that sites are restored to a clean condition at the end-of-life. The Development Standards and Decommissioning requirements from the Menifee ordinance are provided in Appendix A. We support adoption of the relevant parts of that ordinance.

As new technologies advance in cost and space efficiency – such as iron flow and sodium batteries – we would continue to explore alternatives with potential energy development partners.

In Closing

[5] https://insider.govtech.com/california/menifee-battery-storage-plant-will-be-one-of-nations-largest

We believe that BESS represents a strong opportunity for Solano County to promote investment, create jobs, and generate tax revenues. This can be done without negative impacts or risk to the community if appropriately sited, designed, and managed.

Southeastern Solano County is a prime location for siting of BESS that would not displace prime agricultural land or ecological resources. We have engaged with a multitude of energy developers who wish to move forward with BESS projects. We are eager to advance the effort with those developers, however the first hurdle is for the Board to adopt a permanent BESS ordinance which permits BESS in southeastern Solano, and especially in Lambie Industrial Park. We believe the County would benefit greatly from doing this through a direct process rather than through the State-led "opt-in" process — as other developers in the county have filed to do — in which California Energy Commission would permit BESS under AB 205.

We recognize that permitting BESS would merely be the start of an extensive regulatory process that must be completed before any construction can begin. An ordinance confirming the permissibility of BESS would open the door for us and our energy partners to invest in the planning required to assist the County in preparation of all necessary project-level environmental review and permitting, including opportunities for further public comment and engagement. We anticipate that this further review and permitting would also include the more detailed specifics of phasing, supporting infrastructure, accountability and oversight, and additional mandatory mitigations and conditions of development.

We believe in creating opportunities for all of Solano County, and we're excited to work with you to bring this BESS opportunity to our county.

Jan Sramek
Founder & CEO

B.H. Bronson Johnson
Head of Infrastructure & Sustainability

Appendix A - From the City of Menifee BESS Ordinance: Purpose, Classification of Energy Storage Facilities, Applicability, Development Standards, Decommissioning requirements, and Performance Measures and Standard Conditions of Approval

9.297.010 Purpose

Energy Storage Facility regulations are adopted with the intent of advancing and protecting the public health, safety, and welfare of the City of Menifee by establishing regulations for the installation and use of energy storage systems. The regulation herein are intended to protect the health, welfare, safety, 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.

9.297.020 Classification of Energy Storage Facilities

The following words and phrases shall, for the purposes of this chapter, have the meanings respectively ascribed to them by this section, as follows:

1. Battery: A single cell, stack, core building block, or a group of cells connected together electrically in series, in parallel, or a combination of both, which can charge, discharge, and store energy electrochemically. For the purposes of this chapter, batteries utilized in consumer products are excluded from these requirements.

2. Battery Management System: An electronic system that prevents storage batteries from operating outside their safe operating parameters and disconnects electrical power to the energy storage system or places it in a safe condition if potentially hazardous temperatures or other conditions are detected. The system generates an alarm and trouble signal for abnormal conditions

3. Battery Energy Storage System: A system consisting of electrochemical, kinetic, thermal, or other form of energy-storage technology storage batteries, battery chargers, controls, power conditioning systems and associated electrical equipment, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a stand-alone 12-volt car battery or an electric motor vehicle.

4. Cell: The basic electrochemical unit, characterized by an anode and a cathode, used to receive, store, and deliver electrical energy.

5. Commissioning: 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.

6. Decommissioning Plan: A plan to retire the physical facilities of the Project, including decontamination, dismantlement, rehabilitation, landscaping and monitoring. The plan contains detailed information on the proposed decommissioning and covers the schedule, type and sequence of decommissioning activities; waste management, storage and disposal of the waste from decommissioning; the timeframe for decommissioning and site rehabilitation.

7. Energy Storage System: A system which stores energy and releases it in the same form as was input.

9.297.030 Applicability

The requirements of this ordinance shall apply to all utility-scale Battery energy storage facilities permitted, installed, or modified after the effective date of this ordinance, excluding general maintenance and repair. Utility-scale Battery Energy Storage Systems constructed or installed prior to the effective date of this ordinance shall not be required to meet the requirements of this chapter. Modifications to, retrofits or replacements of an existing Battery energy storage facility that increases the total energy storage system designed discharge duration or power rating shall be subject to this chapter. The continuation of legally established existing utility-scale Battery Energy Storage Systems shall be subject to the regulations and guidelines of Chapter 9.15 Nonconforming Uses and Structures of the City of Menifee Municipal Code.

9.297.040 Development Standards

1. Energy storage facilities must meet all applicable standards of the adopted Building and Safety Codes and of the adopted Fire Codes.
2. Energy storage facilities shall comply with the site design requirements set forth below in addition to all other applicable chapters of the City of Menifee Municipal Code:
    a. Where visible from public view, the site shall be fully enclosed by a minimum six-foot, non-scalable solid wall. Where not visible from public view, the site shall be enclosed by a minimum six-foot, non-scalable solid wall or tubular steel or wrought iron fencing. Said wall or fencing shall be located outside of the required yard of the applicable zone. Walls shall consist of either decorative concrete masonry block or decorative concrete tilt-up walls. Decorative masonry block means neutral colored slump stone block, split-face block, or precision block with a stucco, plaster, or cultured stone finish. Decorative concrete tilt-up wall means concrete with a combination of paint and raised patterns, reveals, and/or trim lines.

        When sound and visual attenuation requires a wall exceeding 6 feet above the grade of the adjacent roadway, earth mounds shall be used, such that no more than 6 feet of the wall is visible from the roadway. The mounds shall not exceed

a three-to-one (3:1) ratio slope. The mounds may support the wall or be placed against the wall on the street side.

Maximum wall heights shall comply with Section 9.185.040(g) (“Maximum Heights”) of this Title.

b. No landscaping is required on the interior side of the screen walls described in subparagraph (a), above, regardless of the percentage of open space landscaped required.

The minimum required open space, as required by this Title, shall be limited to the perimeter landscaping surrounding the perimeter screening wall or fencing described in subparagraph (a), above. Said perimeter landscaping shall be no less than the applicable required yard setbacks.

c. Solid walls surrounding facilities which are below grade of an adjacent street or property shall incorporate a berm/slope along the entire length of the wall to ensure facilities are not visible from public view.

d. Anti-graffiti coating or equivalent measure to prevent graffiti shall be provided for all solid screen walls.

e. Except as set forth in subparagraph (f), no equipment or appurtenances not in an enclosed structure shall exceed the screen wall height described in subparagraph (a), above, unless it can be demonstrated through a line-of-sight analysis to the satisfaction of the approval body that the wall height will sufficiently screen said equipment and/or appurtenances. Enclosures for batteries and other systems shall not exceed fifteen feet in height.

f. Accessory structures such as utility poles or utility connection equipment, substation switchyard and similar equipment, necessary for the operation of the facility may exceed the height standards of the applicable zone subject to Planning Commission approval.

g. Within the Business Park (BP) zone, all equipment or appurtenances shall be located within an enclosed building. However, accessory structures such as utility poles or utility connection equipment substation switchyard, and similar equipment, necessary for the operation of the facility is not required to be located within the enclosed building.

h. On-site parking shall be provided as specified below:

i. For sites occupied daily by employees or contractors, one parking space per employee or contractor shall be provided.
ii. For unoccupied sites, one on-site parking space shall be provided.
iii. AII parking, fire access roadway, and drive aisles shall be paved with asphalt or concrete.
iv. All parking lots shall comply with Section 9.215, Parking and Loading Standards.
v. All facilities shall have an approved signage plan including safety signage to be posted at the site.

i. All improvements and site specifications shall be subject to approval of a Hazard Mitigation Analysis. Said reports shall be reviewed by the City of Menifee Fire Department and Building and Safety Departments. These reports must be approved concurrent with any entitlements. The purpose of this analysis is to evaluate the potential for adverse effects to people or the environment related to hazards and hazardous materials. The California Environmental Quality Act (CEQA) requires the analysis of potential adverse effects of a project on the environmental. Consistent with Appendix G of the CEQA Guidelines, a proposed project would cause adverse impacts related to hazards and hazardous materials if they would create a significant hazard to the public or the environmental [sic] through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

9.297.050 Decommissioning

1. Decommissioning Plan. Prior to issuance of any permits related to decommissioning activities, the applicant shall submit a Decommissioning Plan containing a narrative description of the activities to be accomplished for removing the energy storage system from service, and from the facility in which it is located. The Decommissioning Plan shall also include:
    a. A narrative description of the activities to be accomplished, including who will perform that activity and at what point in time, for complete physical removal of all Battery energy storage system components, structures, equipment, security barriers, and transmission lines from the site;

    b. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations;

    c. The anticipated life of the Battery energy storage system;

d. The manner in which the Battery energy storage system will be decommissioned, and the Site restored, including a description of how any changes to the surrounding areas and other systems adjacent to the Battery energy storage system, such as, but not limited to, structural elements, building penetrations, means of egress, and required fire detection suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed; and

e. A listing of any contingencies for removing an intact operational energy storage system from service, and for removing an energy storage system from service that has been damaged by a fire or other event.

2. Ownership Changes. If the owner of the Battery energy storage facility changes or the owner of the property changes, the 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 Battery energy storage facility shall notify the Community Development Department 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 Community Development Department in writing. The project and all approvals for the Battery energy storage facilities would be void if a new owner or operator fails to provide written notification to the Community Development Department in the required timeframe. Reinstatement of a voided project or approvals will be subject to the same review and approval processes for new applications under this chapter.

9.297.060 Performance Measures and Standard Conditions of Approval

The following measures shall be included as performance measures and standard conditions of approval for all energy storage facilities.

a. Facilities shall not store any products, goods, materials, or containers outside of any building on-site.

b. Facilities shall comply with Chapter 9.210 Noise Control Regulations of the City of Menifee Municipal Code.

c. Operators shall address any nuisance, safety issues or violations of conditions of approval within forty-eight hours of being notified by the city that an issue exists.

d. Prior to the issuance of a Certificate of Occupancy or Business License, any operator of an energy storage facility shall sign a statement acknowledging acceptance of all operational conditions of approval associated with the approved entitlements for the facility.