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Project Title:	Potentia-Viridi Battery Energy Storage System
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Document Title:	Introduction
Description:	This chapter provides an introduction to the Project and presents Project objectives, location, components, benefits, schedule, ownership details, and history.
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1 Introduction

Levy Alameda, LLC (Applicant), a wholly owned subsidiary of Obra Maestra Renewables, LLC, proposes to construct, operate, and eventually repower or decommission the 400-megawatt (MW) Potentia-Viridi Battery Energy Storage System (Project) on approximately 85 acres in eastern Alameda County. The primary components of the Project include an up to 3,200 megawatt-hour (MWh) battery energy storage system (BESS) facility, an operations and maintenance (O&M) building, a Project substation, a 500-kilovolt (kV) overhead intertie transmission (gen-tie) line, and interconnection facilities within the Pacific Gas and Electric (PG&E) owned and operated Tesla Substation, directly west of the Project. The substation is owned and operated by PG&E.

The Project would be remotely operated and monitored year-round and be available to receive or deliver energy 24 hours a day and 365 days a year. During the operational life of the Project, qualified technicians would routinely inspect the Project facilities and conduct necessary maintenance to ensure reliable and safe operational readiness.

Electrical energy would be transferred from the existing power grid to the Project batteries for storage and from the Project batteries to the power grid when additional electricity is needed. Utilizing similar battery technology used in electric vehicles, the Project would provide additional capacity to the electrical grid to assist with serving load during periods of peak demand by charging when demand is low and discharging when demand is high. This accommodates the integration of additional intermittent renewable such as wind and solar and reduces the need to operate natural gas power plants. The Project would also serve as an additional local capacity resource that would enhance grid reliability.

1.1 Project Objectives

The primary purpose of the Project is to assist the State of California in meeting its goal of reducing statewide annual greenhouse gas emissions from the electric sector to 25 million metric tons by 2035. The Project would help balance electricity generation from renewable sources, such as wind and solar, with electricity demand by storing excess generation from emissions free power sources and delivering it back to the grid when demand exceeds real-time generation supply. The Project displaces the need for additional fossil fuel based generating stations needed to serve peak demand periods when renewable sources may be inadequate or unavailable.

The Project Objectives are:

- Construct and operate an economically viable, and commercially financeable, 400-MW battery energy storage facility in Alameda County with an interconnection at the Tesla Substation.
- Assist California electric utilities in meeting obligations under California's Renewable Portfolio Standard Program and Senate Bills 100 and 1020, which require renewable energy sources and zero-carbon resources to supply 60% of all retail sales of electricity to California end-use customers by December 31, 2030, 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, and 100% of all retail sales of electricity to California end-use customers by December 31, 2045.
- Assist California utilities in meeting obligations under the CPUC's Mid-Term Reliability Procurement Requirements.

- Develop an electricity storage facility in close proximity to a utility grid-connected substation with existing capacity available for interconnection to minimize environmental impacts.
- Relieve grid congestion, and enhance electricity reliability, without requiring the construction of new regional transmission infrastructure or substantial network upgrades.
- Construct and operate a battery energy storage facility in Alameda County, resulting in economic benefits to the County, creating prevailing wage construction jobs, and facilitating local community benefits.

1.2 Project Location

The Project would be located in Alameda County (County), California within a portion of Assessor Parcel Number (APN) 99B-7890-002-04 located at 17257 Patterson Pass Road, southwest of Interstate 580 and Interstate 205 (Figure 2-1, Regional Map, Figure 2-2, Project Vicinity Map, and Figure 2-3, Project Site Aerial). The BESS facility and a portion of the gen-tie route is within the USGS 7.5 min Midway Quadrangle, Township 2S, Range 4E, Section 31 and the remainder of the gen-tie route and PG&E Tesla Substation is within Township 2S, Range 4E, Section 32. Development of the BESS facility would occur on approximately 70 acres of APN 99B-7890-002-04, which currently consists of fallowed annual grasslands suitable for grazing. The gen-tie line would extend southeast from the Project substation, crossing Patterson Pass Rd, and then proceed east to the Point of Interconnection (POI) at the Tesla Substation. The Project's gen-tie line would be sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12. Land uses in the immediate vicinity of the Project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines. The nearest municipality to the Project site is the City of Tracy approximately 2.5 miles to the northeast.

Appendix 1A contains a copy of the Assessor's Parcel Map for the site parcels. A list of the owners of property within 1,000 feet of the Project and 500 feet of the linear facilities is provided in Appendix 1B.

1.3 Project Elements

The Project would include construction, O&M, and eventual decommissioning of a 400 MW BESS with an energy storage capacity up to 3,200 MWhs. Charging from or discharging to the electrical grid would be a 500kV gen-tie connecting the Project substation to the POI within the existing PG&E Tesla Substation.

The Project would include the following components:

- **Battery Energy Storage System (BESS) Enclosures:** Lithium-ion phosphate cells form the core of the battery energy storage system. The cells are the basic functional electrochemical unit containing an assembly of electrodes, electrolyte, separators, container, and terminals. Cells are the source of electrical energy by direct conversion of chemical energy, and they would be installed on racks and enclosed in prefabricated, non-habitable enclosure. The BESS enclosures may also have a heating, ventilation, and air conditioning (HVAC) system for optimal performance and safety. Power for the HVAC system, lighting, and other electrical systems would be provided through separate auxiliary power connection to the on-site Project substation with connection lines installed above and/or below ground.
- **Power Conversion Systems (PCS):** A PCS is a packaged and integrated system consisting of a bi-directional inverter, MV transformers, protection equipment, direct current (DC) and alternating current (AC) circuit breakers, harmonic filters, equipment terminals, and a connection cabling system. A PCS functions to both convert between DC/AC and change the voltage level from the MV collection voltage to the voltage output of the BESS enclosures.

- The PCS would convert electric energy from AC to DC when the energy is transferred from the grid to the battery, and from DC to AC when the energy is transferred from the battery to the grid. Each PCS would also include transformers that convert the AC side output of the inverter between low and medium AC voltage to increase the overall efficiency of the BESS. Inverters within the PCS units would be unattended systems designed to operate in all conditions. The inverters would be monitored and controlled remotely, and there would be on-site disconnects for use in case of an emergency or a situation requiring unscheduled maintenance.
- Medium voltage (MV) Collection System: The MV collection system would include multiple components that connect the PCS units to the Project substation including underground conductor circuits, switchboards, switchgear, and panels at 34.5kV voltage. The conductors for the MV collection system would be installed underground during construction using trenching.
- Project Substation, Control Building, and Telecommunications Facilities: The Project substation would include three main power transformers (MPTs) – two active and a live spare. When the BESS facility is charging, power from the regional electric transmission grid would be stepped down from 500kV to 34.5kV and sent from the Project substation through the MV collection system and PCS units into the battery packs within the BESS enclosures. When the BESS facility is discharging, power from the battery packs within the BESS enclosures would be sent to the PCS units, stepped up to 34.5kV, and transported to the Project substation through the MV collection system before being stepped up to 500kV at the MPTs and delivered back to the regional electric transmission grid. A prefabricated control building would be installed within the Project substation area and contain an energy management system and metering and telecommunication equipment for communication with PG&E/CAISO facilities and to support remote Project operations monitoring. The Project substation area would also include five static masts for lightning protection and a wireless communication tower mounted with an antenna up to 15 feet in diameter for external telecommunications.

  Following construction of the BESS facility, an O&M building would be constructed within the primary laydown yard for the Project's anticipated three full-time operations staff. The O&M building would include parking, outside equipment and laydown areas, basic offices, meeting rooms, washroom facilities and climate-controlled storage for certain equipment and materials. A potable water storage tank would provide water for washroom and sanitary facilities, and sewage/wastewater would be collected in a separate tank. Potable water would be trucked to the water storage tank periodically during O&M, and sewage/wastewater would be pumped from the storage tank, transported offsite via truck, and disposed of at a sanitary dump station, as needed, during operations. The O&M building would be powered via a distribution line from the Project substation.
- Access Roads: The Project's roadway system would include two new facility access roads and driveways, a perimeter road, and internal access roads. One of the new site access roads and driveways would be constructed from an existing private road near the northeastern portion of the site, and the other would be constructed from Patterson Pass Road near the southwestern portion of the site. A Project substation access road would be constructed outside of the perimeter fence, connecting the northeast and southwest driveways, to facilitate substation access by third parties during operations. All new access roads, driveways, internal and perimeter roads would be bladed, compacted, and surfaced with aggregate. All internal roadways and private driveways would be constructed to meet access requirements for construction, O&M, and emergency response requirements.

- **Laydown Yards:** The Project would include up to 4 laydown yards for equipment and material staging and storage during construction. These areas would also be used for worker parking during construction. The primary laydown yard would be located directly adjacent to the Project substation area (see Figure 2-4, Site Plan). The primary laydown yard would be bladed, compacted, and surfaced with aggregate, while additional laydown yards would be cleared of vegetation and surfaced with aggregate or other soil stabilizing materials. Portions of additional laydown yards may also be graded, if necessary. Landscape fabric may also be installed under the surface of all laydown yards to prevent vegetation growth, if required to comply with fire prevention standards. The O&M building and required number of parking spaces for O&M staff, would be constructed within the primary laydown following construction of the BESS facility components.
- **Stormwater Facilities and Outfall:** The proposed BESS facility site currently consists of annual grassland with rolling topography. Regulatory standards require that volumes and flow rates of stormwater discharge after construction not exceed pre-development conditions. Stormwater generated on site would flow to stormwater detention basins located along the periphery of the BESS facility site (Figure 2-4, Site Plan). Stormwater treatment and storage sizing would be designed to hold the anticipated runoff from a 100-year, 24-hour storm event in compliance with applicable regulations. In the event stormwater basins reach capacity, stormwater would be discharged from the detention basins via storm drainpipes and sheet flow at rates no greater than pre-development conditions following natural drainage patterns.
- A stormwater drainage outfall utilizing a new 36-inch corrugated metal pipe or bioswale/ditch would be constructed from one or more of the detention basins located in the southwest portion of the site to the inlet of a new or existing culvert on the north side of Patterson Pass Road. Approximately 10 cubic yards of clean riprap would be placed as an energy dissipator at the outfall to discharge clean stormwater at or below current rates at the elevation of the ordinary high water mark of the existing drainage on the south side of Patterson Pass Road.
- **Site Security and Fencing, including fire detection system:** The BESS facility site would be enclosed with an 8-foot-tall chain link fence topped with 1 foot of three-strand barbed wire or razor wire. The fence would be installed on the outside of the perimeter road. An additional fence with the same specifications would be installed around the Project substation area. The fences would be required to prevent unauthorized access and to comply with human health and safety regulations. Gates would be installed at various access points along the fence lines and equipped with lock boxes to allow for authorized personnel (e.g., transmission service provider, O&M staff, emergency response) to access appropriate portions of the BESS facility site.

  Lighting would only be in areas where it is required for safety, security, or operations. Low-elevation (less than 14 feet) controlled security lighting would be installed at the Project substation and around the BESS yards, in accordance with applicable requirements and regulations. Permanent motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation area and points of ingress/egress. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, compliant with applicable codes and regulations. Security cameras would be placed on site and monitored 24/7.

  Fire protection would include multiple fire detection systems on site and within the individual BESS enclosures. An infrared camera system would be installed throughout the BESS facility to achieve 100% of electrical infrastructure and trigger an alarm in case of an on-site fire. Each BESS enclosure would have a fire rating in conformance with the California Fire Code 2022. In addition, each BESS enclosure would contain an onboard battery management system (BMS) that monitors the appropriate state of individual battery cells and relays information 24-7. In the event of an anomaly, the system is designed to shut down and mitigate the hazard.

The Project's fire protection design would comply with California Fire Code 2022, Section 1207 Electrical Energy Storage Systems, which adopts the National Fire Protection Association's Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). BESS enclosures would be Underwriters Laboratories (UL) listed, tested, and certified to the most rigorous international safety standards. UL independently tests equipment for compliance with the latest fire safety code requirements, and the methods were developed to minimize fire risk and safety concerns about battery storage equipment raised by fire departments and building officials in the United States.

- **500kV Gen-Tie Line including Transmission Structures and Conductors:** The Project would be interconnected to the regional electrical transmission grid via an approximately 2,884-foot-long new single-circuit 500kV gen-tie line within a 200-foot-wide corridor between the Project substation and the PG&E Tesla Substation. The Applicant would construct and own the portion of the gen-tie line between the Project substation and the Point of Change of Ownership (POCO) transmission structure, and PG&E would construct and own the remaining portion of the gen-tie from the POCO to the POI within the Tesla Substation.

  The 500kv gen-tie line would originate at the Project substation within the BESS facility site and extend southeast, crossing Patterson Pass Rd overhead until reaching the POCO structure. After reaching the POCO structure the route would proceed east to an angled dead-end structure outside of the Tesla Substation fence line before extending north to a new substation dead-end structure at the POI bay within the Tesla Substation footprint. The 200-foot-wide transmission corridor would be within the BESS facility lease area on APN 99B-7890-2-4 and within an easement on APN 99B-7890-2-6 until reaching the parcel's eastern boundary about 255 feet east of the POCO structure. Both parcels comprising the BESS facility lease area and transmission corridor easement are private lands owned by the same landowner. After crossing the eastern boundary of APN 99B-7890-2-6, the remaining portion of the gen-tie would be on the same PG&E-owned parcel that includes the 500kV Tesla Substation and POI. The gen-tie would be designed consistent with the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee 2006), where feasible.
- **Fiber Optic Telecommunications Utility Poles and Fiber Optic Lines:** Telecommunications equipment would be installed between the control building at the Project substation and the Tesla Substation to facilitate communication with PG&E/CAISO facilities. PG&E interconnection policies require two redundant fiber optic cables to be installed on diverse paths without a single point of failure (i.e., both fiber optic lines cannot be installed on a single set of structures). Between the control building within the Project substation area and the POCO structure, the Applicant would install the two fiber optic lines above ground on separate utility structures within the transmission corridor. One route would be installed near the northern boundary of the transmission corridor and the other would be installed near the southern boundary of the transmission corridor. The fiber optic utility poles would be accessed via overland travel from the transmission structure pads or the transmission structure access path. At the POCO structure, each of the fiber optic cables would be brought down to an underground pull box. PG&E would install the fiber optic cables underground from the pull boxes to the PG&E control building at the Tesla Substation. A microwave antenna installed on a communications tower within the Project substation area, an optical ground wire installed on the 500kV structures, or placed underground within the transmission structure access path, between the Project substation and POCO may be used in lieu of a second set of utility poles, if feasible.
- **Transmission Structure Access Path:** A transmission structure access path would be located within portions of the transmission corridor outside of the BESS facility and Tesla Substation footprints and generally follow the centerline of the gen-tie. The portion of the transmission structure access path between Patterson Pass Road and the POCO structure would include a dry crossing of Patterson Run and require clean fill material

(e.g., large cobbles, clean, native gravel, prefabricated mats) to be placed beneath the ordinary high water mark elevation for stabilization and erosion and sedimentation control.

- **Interconnection Facilities within Existing PG&E Tesla Substation Footprint (PG&E constructed and owned):** To facilitate interconnection of the BESS facility to the electric transmission grid, PG&E would need to install a substation bay dead-end transmission structure and expand the POI's 500kV breaker-and-a-half bay with a new circuit breaker.

Figures 3.13-3A through 3.13-3C, Existing Site Conditions, in Section 4.13, Visual Resources, shows the appearance of the site prior to construction and Figures 3.13-4A through 3.13-4C, Visual Simulations, includes renderings of the site and all Project components after construction.

1.4 Project Benefits

Per the Socioeconomic Analysis prepared for the Project (Appendix 3.10A), the Project would provide the following economic benefits:

> Spending over the entire construction period is estimated to result in a total of $8.2 million in taxes to local and state governments over the direct, indirect, and induced impacts taken together. The County and local area government share of these taxes is estimated at $2.75 million, including approximately $349,000 in sales tax.
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> - Annual spending is estimated to result in a total of $4.33 million in taxes to local and state governments over the direct, indirect, and induced impacts taken together. The County and local area government share of these taxes is estimated at $2.31 million, including $334,000 in sales tax.

The Project's community benefits plan is included as Appendix 1C. The Project's labor certification information is included as Appendix 1D.

1.5 Project Schedule

The Project is anticipated to be built over an approximately 18-month period from the onset of site preparation activities through energization. Following energization, testing and commissioning would take place over 6 months. Initial mobilization and site preparation is anticipated to begin no later than Q1 2026 and testing and commissioning is anticipated to conclude no later than Q2 2028. It is anticipated that construction crews would work 8 to 10 hours per day, with work occurring Monday through Friday. Overtime, night work, and weekend work would be used only as necessary to meet the Project schedule or complete time-sensitive or safety critical work. All work schedules would comply with applicable California labor laws, County regulations, and the Project Labor Agreement.

1.6 Project Ownership

Levy Alameda, LLC, a wholly owned subsidiary of Obra Maestra Renewables, LLC, is the applicant and will be the owner and operator of the BESS component of the Project including the power inverters and transformers, Project substation, and the gen-tie line to the POCO. PG&E will be owner and operator of the gen-tie from the POCO to the

interconnection at the PG&E Tesla Substation. Levy Alameda, LLC will lease the approximately 85-acre property on which the Project sits from the current landowner.

1.7 Project History

No permit applications, land use approvals or entitlements have been requested for the Project. Upon consultation with the Alameda County Planning Department prior to filing land use applications for the Project, it was recommended by the County that the Applicant pursue the AB 205 Opt-In Route through the CEC as BESS facilities are not explicitly allowed on an Agriculture Zone per the County's Municipal Code. The County indicated it would take a number of years to update the land use and zoning ordinance to allow for BESS facilities and suggested the AB 205 route to expediate the environmental and permitting process.

1.8 Structure of this EIR

The EIR for the Project is organized as follows:

- **Chapter 1: Introduction**. This chapter provides a discussion of the Project components and background, describes the Project benefits, summarizes the anticipated environmental review process and schedule, and summarizes the contents of the EIR.
- **Chapter 2: Project Description**. This chapter provides a detailed description of the Project and its various components; identifies the Project's location; Project purpose and objectives; specifies the General Plan and zoning designations; and provides details regarding the Project's construction, operations, and decommissioning; and explains the intended uses of the EIR and authorizing actions.
- **Chapter 3: Environmental Analysis**. This chapter includes a description of the environmental setting, regulatory setting, cumulative setting, and impact analysis for each environmental factor (resource area). The resource areas addressed in Sections 3.1 through 3.17 include all resource areas identified in the most recently adopted version of the CEC Appendix B checklist and all additional relevant resource areas and impact questions that are defined in the CEC Guidelines EIR checklist. Each section addresses the baseline conditions, applicable regulations, impact questions, analysis methodology, environmental impacts, and mitigation measures, CEC Recommended Environmental Measures, and/or Project BMPs to reduce or avoid significant effects. A determination is provided in each section to summarize the level of impact (i.e., No Impact, Less-Than-Significant Impact, Less-Than-Significant Impact with Mitigation Incorporated, and Significant and Unavoidable Impact) to each resource area, according to CEQA and other applicable significance criteria. The following resource areas are included in Chapter 3:
  - Section 3.1: Air Quality
  - Section 3.2: Biological Resources
  - Section 3.3: Cultural Resources
  - Section 3.4: Geological Hazards and Resources
  - Section 3.5: Hazardous Materials Handling
  - Section 3.6: Land Use
  - Section 3.7: Noise
  - Section 3.8: Paleontological
  - Section 3.9: Public Health

  - Section 3.10: Socioeconomics
  - Section 3.11: Soils
  - Section 3.12: Traffic and Transportation
  - Section 3.13: Visual Resources
  - Section 3.14: Waste Management
  - Section 3.15: Water Resources
  - Section 3.16: Worker Health and Safety
  - Section 3.17: Wildfire

- **Chapter 4: Alternatives.** This chapter identifies alternatives to the Project in accordance with CEQA Guidelines Section 15126.6, including a thorough description of the No Project Alternative and all alternatives considered and rejected by the CEC.
- **Adaptive Management Plans:** These Plans were prepared specifically for use during Project Construction and Operations and are included as the following appendices:
  - Appendix 1E: Dust Control Plan
  - Appendix 1F: Hazardous Materials Business Plan
  - Appendix 1G: Worker Environmental Awareness Plan
  - Appendix 1H: Nesting Bird Management Plan
  - Appendix 1I: Waste Management Plan
  - Appendix 1J: Emergency Response Plan
  - Appendix 1K: Spill Prevention Control and Countermeasures Plan
  - Appendix 1L: Temporary Impact Revegetation and Restoration Plan
  - Appendix 1M: Construction Traffic Management Plan
  - Appendix 1N: Preliminary Erosion and Sediment Control Plan
  - Appendix 1O: Health and Safety Plan