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4 Alternatives

4.1 Introduction

This section discusses alternatives to the proposed 400-megawatt (MW) up to 3,200-megawatt-hour (MWh) Potentia-Viridi Battery Energy Storage System (the Project or proposed Project) in Alameda County. These include the No Project-No Development Alternative (herein referred to as the No Development-No Project Alternative) and the Reduced Project Alternative. This discussion focuses on alternatives that could feasibly accomplish most of the basic objectives of the Project and could avoid or substantially lessen one or more of the potential impacts.

The California Environmental Quality Act (CEQA) requires consideration of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives" (Title 14, California Code of Regulations [CCR] 15126.6[a]).

Thus, the focus of an alternatives analysis should be on alternatives that "could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" (Title 14, CCR 15126.6[c]). The CEQA Guidelines further provide that "among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

The Energy Facilities Siting Regulations (Title 20, CCR, Appendix B) guidelines titled Information Requirements for an Application require the following:

> A discussion of the range of reasonable alternatives to the project, or to the location of the project, including the no project alternative, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives. In accordance with Public Resources Code section 25540.6(b), a discussion of the applicant's site selection criteria, any alternative sites considered for the project, and the reasons why the applicant chose the proposed site.

The data adequacy regulations also require the following:

> A description of how the site and related facilities were selected, and the consideration given to engineering constraints, site geology, environmental impacts, water, waste and fuel constraints, electric transmission constraints, and any other factors considered by the applicant.

A range of reasonable alternatives have been identified and evaluated in this section, including one "no project" alternative scenario (i.e., the No Development-No Project Alternative), and the Reduced Project Alternative. This section also describes the site selection criteria used in determining the proposed location of the Project.

4.2 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.

4.3 Project Site

The Project would be located in Alameda 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). Development of the BESS facility would occur on about 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. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the Project site and 560 feet south of the proposed gen-tie line; it is owned by the same landowner leasing the lands for the Project.

The Project location was selected due to it being large enough to support development of the Project, its close proximity to existing electrical infrastructure and the Tesla Substation, thereby minimizing length of the proposed gen-tie line to the POI, and because it is located immediately adjacent to existing roadways for construction and O&M access.

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 via a 500kV gen-tie connecting the Project substation to the POI within the existing PG&E Tesla Substation. The BESS Facility would include the following components:

- Battery Energy Storage System (BESS) Enclosures
- Power Conversion Systems (PCS)
- Medium voltage (MV) Collection System
- Project Substation, Control Building, and Telecommunications Facilities
- Access Roads
- Laydown Yards
- Stormwater Facilities and Outfall
- Site Security and Fencing, including fire detection system
- Operations and Maintenance Building

The Project would be located on a site that is designated as Large Parcel Acreage (LPA) in the Alameda County East County Plan Area. The zone classification is Agriculture-Combining B District (A-BE). The area to the south, north, east, and west, the zones and land use designations are predominantly agriculture with undeveloped land and foothills and scattered residences and agricultural appurtenances.

4.4 Rationale for Alternatives Selection

The following discussion covers a reasonable range of feasible alternatives that would avoid or substantially lessen one or more significant effects of the Project while attaining most of the Project objectives. In accordance with the CEQA Guidelines, many factors may be taken into account when addressing the feasibility of alternatives, such as environmental impacts, site suitability as it pertains to various land use designations or zoning, economic viability, availability of infrastructure, regulatory limitations, and jurisdictional boundaries (CEQA Guidelines, 15126.6(f)(1)).

In determining an appropriate range of Project alternatives to be evaluated, a broad range of alternatives were reviewed. Based on initial review and consideration, it was determined that some of these preliminary alternatives did not accomplish most of the objectives, as listed above, or would result in greater impacts than the Project. Thus, these alternatives were rejected and were not fully analyzed. The alternatives that were considered and rejected are discussed in Section 4.5 below.

One alternative would meet most of the Project objectives, is potentially feasible, and would avoid or substantially lessen some impacts as compared to the Project. This alternative is the Reduced Project Alternative. Additionally, a No Project Alternative is required to be included in the range of alternatives.

The two alternatives, as listed below, are fully analyzed. For each of these alternatives, the analysis includes a description of the alternative and a comparison of the environmental effects relative to the Project. These Project alternatives are addressed in Sections 4.6 and 4.7 in this section as follows:

- **Alternative 1:** No Development-No Project Alternative
- **Alternative 2:** Reduced Project Alternative

The alternatives studied constitute a reasonable range because they contain enough variation to facilitate informed decision making that leads to a reasoned choice. Also, the discussion of each alternative is sufficient to allow meaningful evaluation, analysis, and comparison with the Project. Therefore, the significant effects of each alternative are discussed in less detail than those of the Project, but in enough detail to provide the CEC with perspective and a reasoned choice among alternatives to the Project.

The Project would not result in any significant and unavoidable adverse impacts for which feasible mitigation measures could not reduce the impacts to below significance. Implementation of feasible mitigation measures would reduce potentially significant impacts to the following issue areas to less than significant: Air Quality, Biological Resources, Cultural Resources, Hazardous Materials Handling, Paleontological Resources, Soils, Traffic and Transportation, Visual Resources, and Wildfire.

Potential impacts to the following issue areas were determined not to be significant after further evaluation and would not require mitigation: Geological Hazards and Resources, Land Use, Noise, Public Health, Socioeconomics, Waste Management, Water Resources, and Worker Health and Safety.

Sections 4.6 and 4.7 compare the impacts of the No Development-No Project Alternative and the Reduced Project Alternative to the impacts of the Project. A qualitative summary of these alternatives that compares their potential impacts is provided in Table 4-1, Summary of Alternatives to the Project.

4.5 Alternatives Considered but Rejected

The purpose of an alternatives analysis is to develop alternatives to the Project that substantially lessen at least one of the potentially significant environmental effects identified as a result of the Project, while still feasibly meeting most of the Project objectives. Several alternatives were considered but subsequently rejected from further analysis because they did not accomplish most of the Project objectives or would result in greater impacts than the Project. As discussed in more detail below, the alternatives considered and rejected include the following.

4.5.1 Alternative Locations

The Project proponent went through an extensive site planning process to identify and avoid constraints, which included analysis of numerous potential sites for the Project. This site planning process was intended to create a project that optimizes reliable, dispatchable energy generation, while being sensitive to environmental constraints, and ultimately resulted in the proposed Project. Several alternative site locations were considered but subsequently rejected from further analysis because they would result in greater impacts than the Project, primarily due to the construction of a much longer gen-tie line from the Project site to the Tesla Substation.

Description

Alternative site locations were evaluated to determine if a 400 MW, 3,200 MWh, battery energy storage system with supporting improvements could be placed in another location. To be a viable alternative, it was assumed that the alternative location would consist of areas of land of adequate size for construction of above ground facilities of at least 70 acres in close proximity to the existing Tesla Substation.

Feasibility

Areas around the Tesla Substation have attracted renewable energy development applications that are being proposed for vacant land or land with a history of agricultural uses. The availability of alternative sites is constrained by the renewable energy market itself and the economics of being sited near the Tesla Substation. While other sites with similar size, configuration, and use history may exist in the Project area, alternative project sites in the area are likely to have similar project and cumulative impacts even after mitigation. In addition, alternative sites for the Project are not considered to be "potentially feasible," as there are no suitable sites within the control of the Project proponent that would reduce Project impacts. The potential amount of available, similar sites is further reduced because unlike the Project, alternative sites may not include sites with close proximity to transmission infrastructure. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the Project.

4.5.2 Alternative Technologies

The Project proponent went through an analysis to identify alternative technologies to the battery energy storage technology proposed for the Project (battery energy storage technology in non-habitable enclosures). Several alternative technologies were considered but were subsequently rejected from further analysis because they did not accomplish most of the Project objectives or would result in greater impacts than the Project. A discussion of the alternative technologies considered and rejected is provided below:

Fossil Fuel Power Plant (Coal, Natural Gas.)

Fossil fuel plants burn fuel sources such as coal or natural gas to turn heat into mechanical energy by turning turbines and transporting the generated energy into the electrical grid. The fuel must be transported to the power plant through infrastructure such as subterranean gas lines, or trucked in. This thermal process releases significant amounts of GHGs into the atmosphere, which is inconsistent with the Project objectives. Due to these issues, this alternative was rejected in favor of the battery storage technology.

Nuclear Power Plant

Another type of thermal power plant is a nuclear power plant. These projects create a heat source using a nuclear reactor that generates steam, in turn causing a generator to produce electricity. While this is a source of carbon free energy, there are numerous issues including risks associated with the production, storage, and potential release of radioactive waste from a human health perspective. The potential risks and impacts of this type of development are significant, and therefore, a nuclear generator is rejected as a viable alternative to the Project.

Wind/Solar

Development of a wind or solar farm on the 70-acre Project site was considered. However, these types of projects would substantially increase aesthetic impacts due to the increased height of the wind turbines or substantial grading that would be required for installation of the solar panels. In addition, development of a wind farm would potentially result in greater impacts to avian species when compared to the Project. It is assumed that the 70-acre Project site would be insufficient in size to develop adequately sized facilities that would meet the Project objectives. As such, this alternative was rejected in favor of the proposed Project.

4.6 Analysis of the No Project Alternative

4.6.1 No Project Alternative Description and Setting

The No Project Alternative is required so that the CEC can compare the impacts of approving the Project with the impacts of not approving the Project. The No Project Alternative must discuss the existing conditions as well as what would be reasonably expected to occur in the foreseeable future if the Project was not approved, based on current plans and consistent with available infrastructure and community services. The existing Alameda County East County Plan Area land use designation for the Project development footprint is Agriculture-Combining B District (A-BE). The Project site is currently undeveloped, and the regional land use has remained largely unchanged since the 1980s based on aerial imagery (Google Earth Pro 2023). Thus, it is reasonable to assume that if the Project was not approved that the site would remain undeveloped and the site would remain in its existing condition.

4.6.2 Comparison of the Effects of the No Project Alternative to the Potentia-Viridi Project

Air Quality

Under the No Project Alternative, no additional air quality emissions would occur, and the Project's impacts related to construction and operational emissions of criteria pollutants would be avoided. While the Project would provide energy storage that offsets emissions from other sources and would have emissions during construction and operations that are below a level of significance with the incorporation of mitigation, the No Project Alternative would entirely avoid these potential air quality emission impacts of the Project.

Biological Resources

The existing site conditions would remain under the No Development-No Project Alternative, including existing biological resources. Therefore, no impacts to biological resources would occur under this alternative. When compared to the Project, the No Development-No Project Alternative would avoid all impacts to biological resources. This includes avoidance of potential impacts to sensitive vegetation communities and wetlands. This also includes avoidance of potential impacts to special-status wildlife species like California tiger salamander and California red-legged frog. This also includes avoidance of impacts to nesting birds and raptors. The Project would mitigate any potential impacts to biological resources to below a level of significance with mitigation measures and best management practices (BMPs). While these impacts would be reduced to below a level of significance by mitigation under the Project, the No Development-No Project Alternative would completely avoid impacts to biological resources since no change to the resources would occur. In summary, if no development

were to occur under the No Project-No Development Alternative, then all biological resource impacts identified for the Project would be avoided.

Cultural Resources

Under the No Development-No Project Alternative, no changes to the existing conditions would occur. When compared to the Project, the No Development-No Project Alternative would avoid all impacts to cultural resources. This includes avoidance related to any unanticipated archaeological resources within the potential impact area, and potential impacts to unanticipated discovery of human remains during construction or decommissioning. The Project would mitigate these impacts to below a level of significance by requiring mitigation measures such as archeological monitoring during grading activities. While these impacts would ultimately be reduced to below a level of significance by proposed mitigation under the Project, the No Development-No Project Alternative would completely avoid impacts to cultural resources since no change to the resources would occur.

Geological Hazards and Resources

The No Development-No Project Alternative would not involve any construction or structures. Thus, the No Development-No Project Alternative would avoid the Project's less-than-significant impacts related to issues such as ground shaking, ground failure, landslides, or unstable soil during construction, operation, and decommissioning. While the Project's potential geological hazards and resources impacts would be less than significant, the No Development-No Project would entirely avoid these impacts considering no facilities would be constructed, operated, or decommissioned on the Project site. Thus, all geologic impacts identified for the Project would be avoided under the No Development-No Project Alternative.

Hazardous Materials Handling

The No Development-No Project Alternative would not involve the construction, operation or decommissioning of any facilities. The No Development-No Project Alternative would avoid the Project's less-than-significant impacts related to the transport, use and disposal of hazardous materials during construction, operation, and decommissioning of facilities. While the Project would ultimately reduce any potential hazardous materials impacts below a level of significance with the implementation of mitigation measures such as a soil management plan, the No Development-No Project Alternative would entirely avoid all impacts related to hazardous materials handling considering no facilities would be constructed, operated, or decommissioned on the Project site. Thus, all hazardous materials impacts identified for the Project would be avoided under the No Development-No Project Alternative.

Land Use

The Project is anticipated to have less-than-significant impacts related to land use and planning because it will not divide an established community, will comply and/or be consistent with all applicable land use and planning documents, would not conflict with a habitat conservation plan; however, the No Development-No Project Alternative would not involve the construction, operation or decommissioning of any facilities on the Project site and existing conditions would remain. Thus, this alternative would avoid any land use and planning impacts associated with the Project.

In addition, the Project site is zoned Agricultural with a combining district B-E. The BESS use is not explicitly included as an allowed use because it is a modern technology that was not contemplated in many municipal codes statewide. However, per Section 17.06.040, Conditional uses, Board of zoning adjustments, of the Alameda County Zoning Code, public utility buildings or uses are allowed with approval of a Conditional Use Permit. While the BESS facility is not a public utility building, it will tie directly into PG&E's Tesla Substation, which is considered a public utility use. In addition, wind power and non-renewable oil and gas uses are addressed within the Agricultural zone under conditional uses. While this Project is not explicitly restricted by Alameda County's General Plan and Municipal Code, development of a BESS facility falls in line with the conditional use for privately owned wind generators and public utility buildings and uses. The property is currently under an active Williamson Act contract for grazing, and development of the Project would occur on more than 10% of the Williamson Act contracted property. However, per Uniform Rule 2, Section E.1, BESS facilities have not been deemed to be inconsistent with the Williamson Act. Thus, no agricultural or forestry impacts would occur under the Project or the No Development-No Project Alternative.

Noise

No noise would be generated by the No Development-No Project Alterative, as the site would remain in its existing condition, and no construction or operations would occur. As a result, the No Development-No Project Alternative would avoid all impacts related to noise associated with the Project. This includes avoidance of the construction-related noise, operational noise, and decommissioning-related noise. While these noise impacts would be less than significant by the Project, all potential noise impacts would be avoided under the No Development-No Project Alternative.

Paleontological Resources

No impacts to paleontological resources would occur under the No Development-No Project Alternative. While the Project would ultimately reduce any paleontological resource impacts to below a level of significance with the implementation of mitigation measures such as the development and implementation of a paleontological monitoring and mitigation plan and a preparation of a final paleontological resources report, the No Development-No Project Alternative would completely avoid all paleontological resource impacts identified for the Project.

Public Health

Under the No Development-No Project Alternative, no public health impacts would occur, and the Project's less-than-significant impacts related to Project construction health risks would be avoided. While the Project would have less-than-significant individual cancer risk or chronic hazards for residents and workers during construction, the No Development-No Project Alternative would entirely avoid the public health impacts of the Project.

Socioeconomics

Under the No Development-No Project Alternative, none of the battery energy storage facilities proposed under the Project would be constructed, operated, or decommissioned. As discussed in Section 3.10, Socioeconomics, the facilities proposed under the Project would not induce population growth in the area, displace or require new housing, necessitate additional school services, or make adverse demands on local water, sanitary sewer, electricity, or natural gas during construction or operation. While the proposed Project's construction and operation may produce temporary impacts on police, fire, and EMS services, these impacts would be considered less than

significant. While any potential Project impacts would be avoided completely under the No Development-No Project Alternative; this alternative would also not generate the positive indirect and induced economic impacts that the proposed Project's construction and operation would produce from new tax revenues. Therefore, the substantial beneficial impacts related to economic and employment growth would not occur under the No Development-No Project Alternative.

Soils

Under the No Development-No Project Alternative, none of the battery energy storage facilities proposed under the Project would be constructed, operated, or decommissioned, and no potential impacts associated with soil erosion during construction or other significant soil properties would occur. While these impacts would be reduced to below a level of significance with implementation of a mitigation measure requiring adherence to the California Building Code and, if needed, the implementation of building pads would be constructed to accommodate expansive soils, the No Development-No Project Alternative would entirely avoid these impacts considering no improvements would occur in these areas. Thus, all soil impacts identified for the Project would be avoided under the No Development-No Project Alternative.

Traffic and Transportation

Under the No Development-No Project Alternative, none of the battery energy storage facilities proposed under the Project would be constructed, operated, or decommissioned and no additional daily vehicle trips would be generated that would cause the amount of vehicle miles traveled (VMT) to increase beyond existing conditions. No potential impacts associated with truck turns would occur. While this impact would be reduced to below a level of significance with implementation of a mitigation measure requiring a construction traffic management plan, the No Development-No Project Alternative would entirely avoid this impact considering no new road improvements would occur on the site. Thus, any potential impacts associated with traffic and transportation would be avoided completely under the No Development-No Project Alternative.

Visual Resources

Under the No Development-No Project Alternative, the visual conditions of the Project site would be retained in their current state. As discussed in Section 3.13, Visual Resources, the proposed Project would not eliminate or obstruct a public view of a scenic vista or a scenic resource. Under the No Development-No Project Alternative, any potentially significant impacts related to existing visual character during operations and new light sources would not occur. While these impacts would be reduced to below a level of significance with implementation of mitigation measures such as a surface treatment plan. The No Development-No Project Alternative would avoid the Project's visual character and nighttime lighting impacts altogether.

Waste Management

The No Development-No Project Alternative would result in no changes to the existing conditions. Therefore, all potential impacts associated with nonhazardous waste and hazardous waste disposal during construction, operations, and decommissioning would occur, under this Alternative. While these impacts would be considered less than significant, the No Development-No Project Alternative would entirely avoid these impacts considering no new nonhazardous or hazardous waste would be produced on the site. Thus, any potential impacts associated with waste management would be avoided completely under the No Development-No Project Alternative.

Water Resources

The No Development-No Project Alternative would not involve the construction, operation or decommissioning of any facilities. Thus, the No Development-No Project Alternative would avoid the Project's potential significant water resources impacts associated with water quality, flooding potential, water supply, and stormwater runoff and drainage during construction, operation, and decommissioning of the Project. While the Project's water resources impacts would be reduced to below a level of significance with the compliance with existing laws and regulations such as the preparation and implementation of a stormwater pollution prevention plan and stormwater management plan that specify construction and operational best management practices, the No Development-No Project Alternative would entirely avoid these potential impacts considering no facilities would be constructed, operated or decommissioned on the Project site. Thus, all water resources impacts identified for the Project would be avoided under the No Development-No Project Alternative.

Worker Health and Safety

Existing conditions would remain under the No Development-No Project Alternative. Thus, this alternative would not have worker health or safety impacts associated with any construction, operational or decommissioning activities on the site. The No Development-No Project Alternative would avoid the Project's potentially significant health and safety impacts related to construction-related risks and operational-related risks. While these impacts would be reduced to below a level of significance with the implementation of construction health and safety programs and plans such as injury and illness prevention programs, fire protection and prevention programs, personal protection programs, first aid programs, emergency action programs, and construction safety programs during the construction and decommissioning phase and operations health and safety programs such as injury and illness prevention programs, first aid programs, fire protection and prevention programs, emergency action programs, personal protection programs, and operational safety programs during the operational phase, the No Development-No Project Alternative would entirely avoid these impacts.

Wildfire

Existing conditions would remain under the No Development-No Project Alternative, thus this alternative would not have any construction or operational activities that would increase wildfire risks. The proposed Project site and the surrounding area are located on SRA land that is currently designated as a High FHSZ, as detailed in Section 3.17, Wildfire. The No Development-No Project Alternative would avoid the Project's potential wildfire impacts related to operational-related wildfire hazard risk and construction-related wildfire risk and the installation or maintenance of associated infrastructure that may exacerbate fire risk during construction and operation. While these impacts would be reduced to below a level of significance with the implementation of mitigation measures, the No Development-No Project Alternative would entirely avoid these impacts.

4.6.3 Summary of the No Project Alternative

No Development-No Project Alternative

Under the No Development-No Project Alternative, the Project would not be implemented, and the site would remain in its current condition. Under this alternative, none of the direct or indirect environmental impacts associated with construction and operation of the Project would occur.

If the Project were not constructed, the basic Project objectives would not be met, and the grid reliability, and environmental and policy benefits from the Project, would not be realized. The Project would provide a significant contribution to the State's ambitious renewable energy and storage needs and the No Development-No Project Alternative would deprive the State and the area of this significant contribution. The No Development-No Project Alternative would also not be consistent with California's environmental policy goals of encouraging development and deployment of energy storage resources, such as the Project, as articulated in CPUC Decision 21-06-035.

The No Development-No Project Alternative could result in inadequate system reliability (more blackouts), greater fuel consumption, greenhouse gas emissions, air pollution, climate change and other environmental impacts in the state because efficient energy storage such as the Project would not be available. The No Development-No Project Alternative would also deprive the area of a significant construction employment opportunity with associated purchases of local goods and services, as well as jobs associated with the operation and maintenance of the facility, and ongoing property tax revenue, and other community benefits. Therefore, because no development would not satisfactorily meet the Project objectives specified above, both No Project Alternatives were rejected in favor of the Project.

4.7 Analysis of the Reduced Project Alternative

4.7.1 Reduced Project Alternative Description and Setting

The Reduced Project Alternative evaluates the potential environmental impacts associated with developing a 400 MW/1,600 MWh BESS facility within the same area as the Project site. Development of this alternative would include the construction, operations and maintenance, and decommissioning of a battery energy storage system (BESS) facility, including a Project substation, operations and maintenance building, and 500-kV overhead generation intertie transmission (gen-tie) line. This Alternative would also interconnect into the Tesla Substation and require improvements to the PG&E Tesla Substation, similar to those of the proposed Project. Under this Alternative, the BESS facility 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.

Under the Reduced Project Alternative, the battery energy storage system's development footprint would be a total of 40 acres, which is a reduction of approximately 30 acres or approximately 43% compared to the Project. The reduction battery size from an 8-hour battery to a 4-hour battery would also reduce the MW capacity of storage provided by the Project by half from 3,200 MWh to 1,600 MWh. All other Project components would be the same as the Project. The length of construction would be reduced under this Alternative to 17 months, thus reducing the number of required construction workers. However, the phases of construction would remain the same as the Project. Grading activities would be reduced due to the smaller Project footprint.

4.7.2 Comparison of the Effects of the Reduced Project Alternative to the Potentia-Viridi Project

Air Quality

The Reduced Project Alternative would reduce the length of construction activities and grading requirements when compared to the proposed Project. This would reduce air quality emissions during construction. The reduction of the development footprint by about 30 acres would reduce diesel emissions from construction equipment and

would result in a reduction of construction related emissions from NOx relative to the Project. While the reduction in the development footprint would reduce overall emissions, the criteria pollutant emission thresholds are based on a daily emission rate. The duration of construction would be slightly reduced under this Reduced Project Alternative relative to the Proposed Project (17 months vs. 18 months), but the per day activities are expected to be similar to the Project. Thus, it is expected that the Reduced Project Alternative's impacts related to daily criteria pollutant emissions would be similar to the Project. The Reduced Project Alterative could implement mitigation measures to reduce potential air quality impacts to less than significant, similar to the Project.

Biological Resources

The Reduced Project Alternative would include a reduction in impact area of approximately 30 acres when compared to the Project. Therefore, total mitigation requirements under the Reduced Project Alternative would be reduced under this alternative. Mitigation similar to that of the proposed Project would still be required under this Alternative to reduce direct and indirect impacts to sensitive vegetation, special status plant and wildlife species, and impacts to wildlife corridors and wetlands. As such, the Reduced Project Alternative would reduce biological resource impacts relative to the Project due to the reduction in the development footprint. Impacts from the Reduced Project Alternative would be similar, but less than those of the proposed Project.

Cultural Resources

Under the Reduced Project Alternative, the impact area would be reduced by approximately 30 acres. The Reduced Project Alternative would reduce potential impacts to undiscovered cultural resources, tribal cultural resources and undiscovered human remains considering the development area of the BESS facility would be reduced and less grading would be required. However, similar to the proposed Project, mitigation would be required to ensure cumulative impacts from implementation of the Alternative would remain less than significant. Thus, the Reduced Project Alternative's impacts to undiscovered cultural resources, tribal cultural resources and undiscovered human remains would be similar, but less than the Project.

Geological Hazards and Resources

The proposed Project would have less-than-significant impacts related to issues such as ground shaking, ground failure, landslides, or unstable soil during construction, operation, and decommissioning and these impacts would remain the same under the Reduced Project Alternative. Impacts from the Reduced Project Alternative would be further reduced through complying with the final site-specific geotechnical report recommendations that demonstrate compliance with the California Building Code requirements. There are no mineral resources on the Project site so implementation of this Alternative would not impact known mineral resources similar to the proposed Project. As such, impacts related to geological hazards and resources would be the same as those of the proposed Project.

Hazardous Material Handling

While potential hazardous materials impacts would be slightly reduced because the development footprint would be reduced by approximately 30 acres and the construction period would be reduced from 18 to 17 months, the Reduced Project Alternative would have impacts similar to that of the proposed Project due to a similar development type. Potential impacts related to operational-related and construction-related hazardous materials use, accidental release of hazards and fire hazards would still occur under this alternative. The Reduced Project Alternative would also be required to implement the BMPs, training, worker health and safety plans as the proposed Project. Also,

similar to the Project, the development under this alternative would be required to abide by the laws and regulations governing hazardous materials handling. Thus, hazards and hazardous materials impacts due to implementation of the Reduced Project Alternative would be less than significant but similar to the proposed Project.

Land Use

Like the Project, the Reduced Project Alternative is anticipated to have less-than-significant impacts related to land use and planning because it will not divide an established community and will comply and/or be consistent with all applicable land use and planning documents. Overall, land use impacts would be the same under the Reduced Project Alternative as the proposed Project because the type of development would be the same, just at a reduced size.

In addition, based on a Phase I Environmental Site Assessment completed for the Project (Appendix 3.5A), the Project site was used for agricultural purposes (i.e., row and/or field crops) from approximately 1940 to 1958. The Project site and surrounding lands are identified on the Farmland Mapping and Monitoring Program as grazing lands, with the exception of the Tesla Substation, which is identified as Urban and Built-Up Land. No lands designated as Prime Farmland, Unique Farmland, or Farmland of Local Importance are on, or within the immediate vicinity of the Project site. Like the proposed Project, the Reduced Project Alternative would be under the same Non-Prime Farmland Williamson Act contract and would not require the cancellation of the Williamson Act contract under Government Code Section 51238. Thus, land use impacts would be the same under the Reduced Project Alternative when compared to the proposed Project.

Noise

The Reduced Project Alternative would reduce the development footprint. The construction period would also be slightly shorter under the Reduced Project Alternative when compared to the Project (17 vs. 18 months). Thus, the construction noise impacts under the Reduced Project Alternative would be slightly less than that of the Project. Operational impacts related to noise and vibration would be similar to those of the proposed Project and would be less than significant.

Paleontological

Under the Reduced Project Alternative, the impact area would be reduced by approximately 30 acres. The Reduced Project Alternative would reduce potential impacts to undiscovered sensitive paleontological resources considering the development area of the BESS facility would be reduced and less grading would be required. However, similar to the proposed Project, mitigation would be required to ensure impacts from implementation of the Alternative would remain less than significant. Thus, the Reduced Project Alternative's impacts to undiscovered sensitive for paleontological resources remains would be similar, but less than the Project.

Public Health

The Reduced Project Alternative would reduce the total construction time from 18 to 17 months and would require less grading than the proposed Project. This would reduce air quality emissions and other public health hazards during construction of the Alternative when compared to the proposed Project. The duration of construction would be slightly reduced under this Reduced Project Alternative relative to the proposed Project (17 months vs. 18 months), but the phases of construction would remain the same as the Project. Day-to-day construction activities are also expected to be the same as the Project. It is expected that the Reduced Project Alternative's impacts

related to operational impacts would be similar to the Project and would also not result in significant incremental health risks. Therefore, the Reduced Project Alternative's impacts would be similar, but less than for construction, when compared to the Project and would also not result in significant incremental health risks.

Socioeconomics

No occupied housing currently exists on the Project site that would be displaced by the Reduced Project Alternative. This Alternative includes the development of a 4-hour BESS facility that would be constructed by workers within the local area, similar to the proposed Project. Thus, no population increase would be anticipated in the Project area. The Reduced Project Alternative would result in the same impacts related to population and housing of the Project. However, due to the reduction in construction timeline and equipment needed to construct this Alternative, there would also be a reduction in economic benefits to the City, County and State in tax revenues and a reduction in local employment revenues. The Reduced Project Alternative would generate a similar demand for public services and utilities as the Project as it would construct similar battery energy storage facilities. As such, implementation of the Reduced Project Alternative would provide similar, but less economic benefit when compared to the proposed Project.

Soils

While the Reduced Project Alternative would result in a reduced footprint when compared to the proposed Project, impacts related to soils would remain less than significant for this Alternative. Any potential impacts would be reduced through development of a Project-specific SWPPP and adherence to the California Building Code and impacts would be less than significant. As such, impacts related to soils would be the same as those of the proposed Project.

Traffic and Transportation

Traffic and transportation impacts related to construction of the Reduced Project Alternatives are anticipated to be slightly less than those compared to the proposed Project due to a reduction in construction duration, required equipment, and construction workers. Similar to the proposed Project, mitigation will be incorporated to reduce construction related impacts to a less-than-significant level. The operation of this Alternative would be the same as that of the proposed Project would generate a nominal number of peak hour trips. Similar to the proposed Project, the Alternative would not increase hazards related to design features or result in inadequate emergency access. As such, impacts under the Reduced Project Alternative would be the similar, but less for construction, when compared to the proposed Project.

Visual Resources

Under the Reduced Project Alternative, the BESS development footprint would be decreased by approximately 30 acres and would reduce the scale and acreage of the battery energy storage system facility. Thus, the impacts to visual character and quality would be less than the proposed Project. Nonetheless, similar to the proposed Project, the Reduced Project Alternative would likely have the same Project components incorporated into the design. Thus, the Reduced Project Alternative development may result in a slight reduction to impacts relative to the proposed Project, as it would provide a smaller visual buffer and would retain more area as unencumbered land on the Project site. In addition, the Reduced Project Alternative would result in additional nighttime lighting in the area similar to the proposed Project. These impacts would be reduced to below a level of significance with

implementation of mitigation measures such as a surface treatment plan for the Reduced Project Alternative. As such, impacts under the Reduced Project Alternative would be similar, but less than those of the proposed Project.

Waste Management

The Reduced Project Alternative would generate fewer demands for nonhazardous and hazardous materials waste than the proposed Project during construction due to the reduced timing and equipment needs of this Alternative. With the development of a slightly smaller BESS facility, this alternative would result in a decrease in waste management services required for construction. Operations under this Alternative would remain the same as those of the proposed Project. As such, the Reduced Project Alternative would be similar, but less for construction, when compared to the proposed Project.

Water Resources

Similar to the Project, impacts associated with the implementation of the Reduced Project Alternative related to water quality, flooding potential, water supply, and stormwater runoff and drainage during construction, operation and decommissioning would be less than significant. Water resources impacts under this Alternative would be reduced to below a level of significance with the compliance with existing laws and regulations such as the preparation and implementation of a stormwater pollution prevention plan and stormwater management plan that specify construction and operational best management practices.

In addition, the Reduced Project Alternative would generate fewer demands for utilities and service systems including water, wastewater, and stormwater during construction due to the reduced duration. With the development of a slightly smaller BESS facility, this alternative would result in a decrease in water demand because less dust suppression would be required during construction. Overall, the Reduced Project Alternative would have water resource impacts that are similar, but less during construction, when compared to the Project.

Worker Health and Safety

Similar to the proposed Project, the Reduced Project Alternative would have less-than-significant impacts with the implementation of worker health and safety plans and programs. Potentially significant health and safety impacts related to construction-related risks and operational-related risks would still occur under this alternative. The Reduced Project Alternative would be required to implement construction health and safety programs and plans such as injury and illness prevention programs, fire protection and prevention programs, personal protection programs, first aid programs, emergency action programs, and construction safety programs during the construction and decommissioning phase and operations health and safety programs such as injury and illness prevention programs, first aid programs, fire protection and prevention programs, emergency action programs, personal protection programs, and operational safety programs during the operational phase, similar to the Project. Thus, worker health and safety impacts due to the Reduced Project Alternative would be the same as those of the proposed Project.

Wildfire

The Reduced Project Alternative would have potentially significant wildfire impacts similar to that of the Proposed Project. Potential impacts related to operational-related wildfire hazard risk and construction-related wildfire risk and the installation or maintenance of associated infrastructure that may exacerbate fire risk during construction and operation would still occur under this Alternative. The Reduced Project Alternative would be required to

implement similar mitigation measures as the proposed Project. Thus, wildfire impacts due to the Reduced Project Alternative would be similar to the proposed Project.

4.7.3 Summary of the Reduced Project Alternative Analysis

The Reduced Project Alternative would reduce the development footprint from approximately 70 acres to 40 acres. The reduction of the development footprint would slightly reduce impacts primarily to the following environmental resources areas: air quality, biological resources, public health, traffic, visual resources, waste management, and water resources. Many of these impacts would be reduced to slightly less than the proposed Project due to a reduction in construction timeline and grading activities.

This Alternative would generally meet all Project objectives, although not to the degree that the proposed Project would. The footprint and environmental impact for a 4-hour and 8-hour battery storage project are about the same, with the main difference being a slight increase in lithium ions on site. Environmental impacts measured on a MWh basis is lower for the 8-hour project when compared to the Reduced Project Alternative. More non-emitting sources are able to be added to the system due to reduced congestion. In addition, since the proposed Project does not have any significant and unavoidable impacts, the minimal reduction in impacts resulting from this Alternative would not be worth the reduction in benefits implementation of the proposed Project would have.

4.8 Summary of Alternatives

A summary of impacts of the alternatives compared to the Project by resource topic is included in Table 4-1 below.

Table 4-1. Summary of Alternatives to the Project

Issue Area	Proposed Project	No Development-No Project	Reduced Project
Conflict with or obstruct implementation of the applicable air quality plan	LTS	▼	=
Cumulative considerable net increase in criteria pollutants for which the project region is in non-attainment	LTSM	▼	▼
Expose sensitive receptors to substantial pollutant concentrations	LTSM	▼	▼
Result in other emissions (odors)	LTS	▼	=
Biological Resources			
Construction Impacts to Sensitive Vegetation	LTSM	▼	▼
Construction Impacts to Special-Status Plant Species	LTSM	▼	=
Construction Impacts to Special-Status Wildlife Species	LTSM	▼	▼
Construction Impacts to Wildlife Corridors	LTS	▼	▼
Construction Impacts to Wetlands and WOTUS	LTSM	▼	▼
Operation Impacts Noise and Light	LTSM	▼	▼
Operation Impacts Collision and Electrocution Hazard to Wildlife	LTS	▼	▼
Operation on Special Status Species Plants	NI	▼	=

Table 4-1. Summary of Alternatives to the Project

Issue Area	Proposed Project	No Development-No Project	Reduced Project
Operation impacts to sensitive and special-status wildlife species noise	LTS	▼	▼
Operation impacts to sensitive and special-status wildlife species lighting and habitat	LTS	▼	▼
Operation to Wetlands and WOTUS	LTS	▼	▼
Cumulative	LTS	▼	▼
Cultural Resources			
Substantial adverse change in the significance of a historical resource pursuant to §15063.4	NI	▼	=
Substantial adverse change in the significance of an archaeological resource to §15063.4 or disturb human remains	LTS	▼	=
Substantial adverse change in the significance of a tribal cultural resource	LTS	▼	
Cumulative	LTSM	▼	=
Geologic Hazards and Resources			
Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map	NI	▼	=
Strong seismic ground shaking	LTS	▼	=
Seismic-related ground failure, including liquefaction	LTS	▼	=
Landslides	LTS	▼	=
Located on a geologic unit or soil that is unstable or that would become unstable	LTS	▼	=
Loss of availability of a known mineral resource that would be of value to the region	NI	▼	=
Loss of availability of a locally important mineral resource recovery site	NI	▼	=
Cumulative	LTS	▼	=
Hazardous Materials and Resources			
Significant hazard to the public or environment through routine transport or use of hazardous materials	LTS	▼	=
Hazardous Materials Use Construction	LTS	▼	▼
Hazardous Materials Use Operation	LTS	▼	=
Accidental Release Hazards	LTS	▼	=
Fire and Explosion Hazards	LTS	▼	=
Hazardous Materials in Soils	LTSM	▼	=
Schools and Sensitive Receptors	NI	▼	=
Cortese List	LTS	▼	=
Effects on Emergency Response Plans	LTS	▼	=
Cumulative	LTS	▼	=

Table 4-1. Summary of Alternatives to the Project

Issue Area	Proposed Project	No Development-No Project	Reduced Project
Land Use			
Divide an Established Community	NI	▼	=
Conflict with an Applicable Land Use Plan	LTS	▼	=
Convert Farmland to Non-agricultural uses	NI	▼	=
Conflict with existing zoning for agricultural use, or a Williamson Act Contract	LTS	▼	=
Changes in the existing environment that could result in conversion of Farmland, to non-agricultural use	LTS	▼	=
Cumulative	LTS	▼	=
Noise			
Noise Construction Impacts - temporary increase in ambient noise levels or groundborne vibrations	LTS	▼	▼
Noise Operation Impacts - operation increase in ambient noise levels or groundborne vibrations	LTS	▼	=
Excessive noise levels within the vicinity of a private airstrip or an airport land use plan	NI	▼	=
Cumulative	LTS	▼	=
Paleontological Resources			
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	LTSM	▼	=
Cumulative	LTS	▼	=
Public Health			
Cancer Risk	LTS	▼	=
Non-Cancer Risk	LTS	▼	=
Construction and Commissioning Phase Effects	LTS	▼	▼
Operational Phase Effects	LTS	▼	=
Characterization of Risks from Toxic Air Pollutants	LTS	▼	=
Cumulative	LTS	▼	=
Socioeconomics			
Construction - Induce substantial growth of concentration of population	LTS	▼	=
Construction - Displace a large number of people or impact existing housing	LTS	▼	=
Construction - Result in substantial adverse impacts on local economy and employment	LTS	▼	=
Construction - Result in substantial adverse fiscal impacts to the community	NI		▲
Construction - Result in substantial adverse on educational facilities	NI		=
Construction - Result in Substantial adverse impacts on provision of utility services	LTS	▼	=

Table 4-1. Summary of Alternatives to the Project

Issue Area	Proposed Project	No Development-No Project	Reduced Project
Construction – Result in substantial adverse impacts on the provision of public services	LTS	▼	=
Operation - Induce substantial growth concentration of population	LTS	▼	=
Operation - Displace a large number of people or impact existing housing	LTS	▼	=
Operation - Result in Substantial Adverse Impacts on the Local Economy and Employment	LTS	▼	=
Operation – Result in adverse fiscal impacts on the community	NI		=
Operation - Result in Substantial Adverse Impacts on Educational Facilities	LTS	▼	=
Operation - Result in Substantial Adverse Impacts on Provision of Utility Service	LTS	▼	=
Result in Substantial Adverse Impacts on the Provision of Public Services	LTS	▼	=
Environmental Justice	LTS	▼	=
Cumulative	LTS	▼	=
Soils			
Substantial soil erosion or the loss of topsoil	LTS	▼	=
Be located on expansive soil	LTS	▼	=
Conversion of farmland to non-agricultural use	NI	▼	=
Substantial adverse effect on state or federally protected wetlands	LTS	▼	=
Cumulative	LTS	▼	=
Traffic and Transportation			
Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities	LTSM	▼	▼
Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	LTS	▼	=
Substantially increase hazards due to a geometric design feature or incompatible uses	LTS	▼	=
Inadequate emergency access	LTS	▼	=
Significantly increased hazards associated with Project-related hazardous materials	LTS	▼	=
Cumulative	LTSM	▼	=
Visual Resources			
Substantial adverse effect on a scenic vista	LTS	▼	=
substantially damage scenic resources within a state scenic highway	LTS	▼	=
Substantially degrade the existing visual character or quality of public views of the site and its surroundings	LTSM	▼	▼

Table 4-1. Summary of Alternatives to the Project

Issue Area	Proposed Project	No Development-No Project	Reduced Project
Create a new source of substantial light or glare	LTS	▼	=
Cumulative Effects	LTSM	▼	=
Waste Management			
Cortese List	NI	▼	=
Nonhazardous Waste Disposal during construction	LTS	▼	▼
Hazardous Waste Disposal during construction	LTS	▼	▼
Nonhazardous Waste Disposal during operation	LTS	▼	=
Hazardous Waste during operations	LTS	▼	=
Cumulative	LTS	▼	=
Water Resources			
Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality	LTS	▼	=
Substantially decrease groundwater supplies or interfere substantially with groundwater recharge	LTS	▼	▼
Alter the existing drainage pattern of the site or area	LTS	▼	=
Release of pollutants due to project inundation	NI	▼	=
Obstruct implementation of a water quality control plan or sustainable groundwater management plan	LTS	▼	=
Cumulative	LTS	▼	=
Worker Health and Safety			
Construction Phase	LTS	▼	=
Operational Phase	LTS	▼	=
Wildfire			
Impair Emergency Response Plan or emergency evacuation Plans	LTS	▼	=
Exacerbate Wildfire Risks	LTSM	▼	=
Require installation or maintenance of associated infrastructure that may exacerbate fire risk	LTSM	▼	=
Expose people and structures to significant risks	LTS	▼	=
Cumulative	LTS	▼	=

Notes:
▲ Alternative is likely to result in greater impacts to issue when compared to Proposed Project.
= Alternative is likely to result in similar impacts to issue when compared to Proposed Project.
▼ Alternative is likely to result in reduced impacts to issue when compared to Proposed Project.
LS = less than significant without mitigation; LTSM = less than significant with mitigation measures; SU = potentially significant and unavoidable impact.

A summary of the alternatives compared to the Project-by-Project Objective is provided in Table 4-2 below.

Table 4-2. Alternatives Summary Relative to Project Objectives

	Project Objective	Proposed Project	No Project	Reduced Project Alternative
1	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.	Yes	No	Partially
2	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.	Yes	No	Partially
3	Assist California utilities in meeting obligations under the CPUC's Mid-Term Reliability Procurement Requirements.	Yes	No	Partially
4	Develop an electricity storage facility in close proximity to a utility grid-connected substation with existing capacity available for interconnection to minimize environmental impacts.	Yes	No	Yes
5	Relieve grid congestion, and enhance electricity reliability, without requiring the construction of new regional transmission infrastructure or substantial network upgrades.	Yes	No	Partially
6	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.	Yes	No	Partially

4.9 References

California Energy Commission. July 2021. California Code of Regulations, Title 20. Public Utilities and Energy, Division 2. State Energy Resources Conservation and Development Commission. Available: https://www.energy.ca.gov/sites/default/files/2021-07/Title%2020%20Updated%20July%2023%2C%202021.pdf.

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