3.7 Greenhouse Gas Emissions

This section includes an overview of existing greenhouse gas emissions (GHG) within the VEGA 6 project area and Ramon Substation expansion area, and identifies applicable laws and regulations related to global climate change. The impact assessment provides an evaluation of potential adverse effects with regards to GHG emissions based on criteria derived from the CEQA Guidelines in conjunction with actions proposed in Chapter 2, Project Description.

Information contained in this section for the VEGA 6 project is summarized from the *Air Quality and Greenhouse Gas Assessment for the VEGA SES 6 Solar and Battery Storage Project* prepared by ECORP Consulting, Inc. This report is included in Appendix C1 of this EIR. GHG emissions for the proposed Ramon Substation expansion were estimated using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. The CalEEMod worksheets generated for the proposed Ramon Substation expansion are contained in Appendix C2 of this EIR.

3.7.1 Existing Conditions

Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change.

Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. Table 3.7-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contribution to the greenhouse effect.

Table 3.7-1. Greenhouse Gas Descriptions

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO2 emissions. The atmospheric lifetime of CO2 is variable because it is so readily exchanged in the atmosphere.
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH4 to the atmosphere. Natural sources of CH4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH4 is about 12 years.
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N2O is approximately 120 years.

Source: Appendix C1 of this EIR

Greenhouse Gas Emissions Inventory

In 2021, CARB released the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO_2e including from imported electricity. The current inventory covers the years 2000 to 2019 and is summarized in Table 3.7-2. Data sources used to calculate this GHG inventory include California and Federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 2000 emissions level is the sum total of sources from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include agriculture, commercial and residential, electric power, industrial, transportation, recycling and waste, and high GWP gases.

As shown in Table 3.7-2, combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for approximately 39.7 percent of total GHG emissions in the State (CARB 2021).

Table 3.7-2. California Greenhouse Gas Emissions Inventory 2000 to 2019

Sector	Total 2000 Emissions ($MMTCO_2e$)	Total 2019 Emissions ($MMTCO_2e$))
Agriculture	30.97	31.8
Commercial and Residential	43.95	43.8
Electric Power	104.75	58.8
Industrial	96.18	88.2
Transportation	178.40	166.1

Sector	Total 2000 Emissions ($MMTCO_2e$)	Total 2019 Emissions ($MMTCO_2e$))
Recycling and Waste	7.67	8.9
High GWP Gases	6.28	20.6

Source: CARB 2021
Notes: GWP = global warming potential; $MMTCO_2e$ = million metric tons of CO_2 equivalent

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California.

The California Natural Resources Agency's Fourth Climate Change Assessment (Fourth Assessment) produced updated climate projections that provide state-of-the-art understanding of different possible climate futures for California. The science is highly certain that California (and the world) will continue to warm and experience greater impacts from climate change in the future. While the IPCC and the National Climate Assessment have released descriptions of scientific consensus on climate change for the world and the U.S., respectively, the Fourth Assessment summarizes the current understanding of climate impacts and adaptation options in California (California Natural Resources Agency 2018). Projected changes in California include:

- **Temperatures:** If GHG emissions continue at current rates then California will experience average daily high temperatures that are warmer than the historical average by:
  - 2.7 Fahrenheit (°F) from 2006 to 2039
  - 5.8°F from 2040 to 2069
  - 8.8°F from 2070 to 2100
- **Wildfire:** One Fourth Assessment model suggests large wildfires (greater than 25,000 acres) could become 50 percent more frequent by the end of century if emissions are not reduced. The model produces more years with extremely high areas burned, even compared to the historically destructive wildfires of 2017 and 2018. By the end of the century, California could experience wildfires that burn up to a maximum of 178 percent more acres per year than current averages.
- **Sea-Level Rise:** If emissions continue at current rates, the Fourth Assessment model results indicate that total sea-level rise by 2100 is expected to be 54 inches, almost twice the rise that would occur if GHG emissions are lowered to reduce risk.
- **Snowpack:** By 2050, the average water supply from snowpack is projected to decline to 2/3 from historical levels. If emissions reductions do not occur, water from snowpack could fall to less than 1/3 of historical levels by 2100.
- **Agriculture:** Agricultural production could face climate-related water shortages of up to 16 percent in certain regions. Regardless of whether California receives more or less annual precipitation in the future, the state will be dryer because hotter conditions will increase the loss of soil moisture (California Natural Resources Agency 2018).

3.7.2 Regulatory Setting

This section identifies and summarizes federal, state, and local laws, policies, and regulations that are applicable to the project.

Federal

At the federal level, there is currently no overarching law related to climate change or the reduction of GHGs. The U.S. EPA is developing regulations under the CAA to be adopted in the near future, pursuant to the U.S. EPA's authority under the CAA. Foremost amongst recent developments have been the settlement agreements between the U.S. EPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in Massachusetts v. EPA; and U.S. EPA's "Endangerment Finding," "Cause or Contribute Finding," and "Mandatory Reporting Rule." On September 20, 2013, the U.S. EPA issued a proposal to limit carbon pollution from new power plants. The U.S. EPA is proposing to set separate standards for natural gas-fired turbines and coal-fired units.

Although periodically debated in Congress, no federal legislation concerning GHG limitations has yet been adopted. In Coalition for Responsible Regulation, Inc., et al. v. EPA, the United States Court of Appeals upheld the U.S. EPA's authority to regulate GHG emissions under CAA. Furthermore, under the authority of the CAA, the EPA is beginning to regulate GHG emissions starting with large stationary sources. In 2010, the U.S. EPA set GHG thresholds to define when permits under the New Source Review Prevention of Significant Deterioration standard and Title V Operating Permit programs are required for new and existing industrial facilities. In 2012, U.S. EPA proposed a carbon pollution standard for new power plants.

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. EPA jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium-and heavy-duty trucks have been jointly developed by U.S. EPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (U.S. EPA 2011). In 2012, the U.S. EPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (U.S. EPA 2016).

State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by previous Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality

problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Executive Order S-01-07

This order, signed by Governor Schwarzenegger, sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. CARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Assembly Bill 31 – California Global Warming Solutions Act

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlines measures to meet the 2020 GHG reduction goals. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by the end of 2020.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by Executive Order (EO) B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill 100 of 2018

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the Renewable Portfolio Standard (RPS) goals established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned utilities and publicly owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. California must procure 100 percent of its energy from carbon free energy sources by the end of 2045.

Renewable Portfolio Standard

The RPS promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the "initial RPS"), the goals have been accelerated and increased by EOs S-14-08, S-21-09, SB 350, and SB 100.

The RPS is included in CARB's Scoping Plan list of GHG reduction measures to reduce energy sector emissions. It is designed to accelerate the transformation of the electricity sector through such means as investment in the energy transmission infrastructure and systems to allow integration of large quantities of intermittent wind and solar generation. Increased use of renewables would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector.

Senate Bill 350

The RPS program was further accelerated in 2015 with SB 350 which mandated a 50 percent RPS by 2030. SB 350 includes interim annual RPS targets with three-year compliance periods and requires 65 percent of RPS procurement to be derived from long-term contracts of 10 or more years.

Climate Change Scoping Plan

The Scoping Plan released by CARB in 2008 outlined the state's strategy to achieve the AB 32 goals. This Scoping Plan, developed by CARB in coordination with the Climate Action Team, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It was adopted by CARB at its meeting in December 2008. According to the Scoping Plan, the 2020 target of 427 million $MTCO_2e$ requires the reduction of 169 million $MTCO_2e$, or approximately 28.3 percent, from the state's projected 2020 BAU emissions level of 596 million $MTCO_2e$.

However, in August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 million $MTCO_2e$, only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020. The 2011 Scoping Plan expands the list of nine Early Action Measures into a list of 39 Recommended Actions.

In May 2014, CARB developed; in collaboration with the Climate Action Team, the First Update to California's Climate Change Scoping Plan (Update), which shows that California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32. In accordance with the United Nations Framework Convention on Climate Change, CARB is beginning to transition to the use of the AR4's 100-year GWPs in its climate change programs. CARB has recalculated the 1990 GHG emissions level with the AR4 GWPs to be 431 million $MTCO_2e$; therefore, the 2020 GHG emissions limit established in response to AB 32 is now slightly higher than the 427 million MTCO2e in the initial Scoping Plan.

CARB adopted the latest update to the Climate Change Scoping Plan in December 2017. The 2017 Scoping Plan is guided by the EO B-30-15 GHG reduction target of 40 percent below 1990 levels by 2030. The 2017 Scoping Plan builds upon the framework established by the initial Scoping Plan and the First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation,

continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and-Trade Program, which constrains and reduces emissions at covered sources (CARB 2017).

The majority of the Scoping Plan's GHG reduction strategies are directed at the two sectors with the largest GHG emissions contributions: transportation and electricity generation. The GHG reduction strategies for these sectors involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities. The reduction strategies employed by CARB are designed to reduce emissions from existing sources as well as future sources.

Senate Bill 97

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs Office of Planning and Research (OPR) to develop draft CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" by July 1, 2009, and directs the Resources Agency to certify and adopt the CEQA Guidelines by January 1, 2010.

On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines in the CCR. The amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other GHG reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. In addition, consideration of several qualitative factors may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. The Guidelines do not set or dictate specific thresholds of significance.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix G of the CEQA Guidelines.
- The Guidelines are clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- The Guidelines promote the advantages of analyzing GHG impacts on an institutional, programmatic level, and, therefore, approve tiering of environmental analyses and highlights some benefits of such an approach.
- EIRs must specifically consider a project's energy use and energy efficiency potential, pursuant to Appendix F of the CEQA Guidelines.

Senate Bill 375 – Regional Emissions Targets

SB 375 requires that regions within the state which have a metropolitan planning organization (MPO) must adopt a sustainable communities' strategy as part of their RTPs. The strategy must be designed to achieve certain goals for the reduction of GHG emissions. The bill finds that “it will be necessary to achieve significant additional GHG reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 provides that new CEQA provisions be enacted to encourage developers to submit applications and local governments to make land use decisions that will help the state achieve its goals under AB 32," and that “current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning should be able to assess the effects of policy choices, such as residential development patterns, expanded transit service and accessibility, the walkability of communities, and the use of economic incentives and disincentives.”

Regional

Southern California Association of Governments – 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

The SCAG is the designated MPO for Los Angeles, Ventura, Orange, San Bernardino, Riverside, and Imperial Counties. CEQA requires that regional agencies like SCAG review projects and plans throughout its jurisdiction. SCAG, as the region’s “Clearinghouse,” collects information on projects of varying size and scope to provide a central point to monitor regional activity. SCAG has the responsibility of reviewing dozens of projects, plans, and programs every month. Projects and plans that are regionally significant must demonstrate to SCAG their consistency with a range of adopted regional plans and policies.

In September 2020, SCAG adopted the 2020-2045 RTP/SCS. The RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the NAAQS as set forth by the federal CAA (see Section 3.3, Air Quality, of this EIR). The following SCAG goal is applicable to the project:

- Reduce greenhouse gas emissions and improve air quality

As a solar generation facility, the proposed project would improve air quality by reducing the use of fossil fuels in energy production.

Local

County of Imperial

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the CEQA Guidelines to provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts. Formal CEQA thresholds for lead agencies must always be established through a public hearing process. Imperial County has not established formal quantitative or qualitative thresholds through a public rulemaking process, but CEQA permits the lead agency to establish a project-specific threshold of significance if backed by substantial evidence, until such time as a formal threshold is approved.

County of Riverside Climate Action Plan

The County of Riverside adopted the 2019 Climate Action Plan (CAP) Update on December 17, 2019. The 2019 CAP Update considers the previous GHG reduction targets identified in the 2015 CAP and refines the County's efforts to meet GHG reduction strategies in 2035 and 2050 and proposes new targets that are consistent with updates in State climate change regulations in order to meet the requirements of SB 32.

The 2019 CAP Update establishes a framework under which future projects would be designed for the purposes of reducing GHG emissions. Although the 2019 CAP Update is designed as a standalone GHG policy document, it would be utilized to provide a more comprehensive and detailed framework for land-based policy decisions to reduce GHG emissions from existing and future development. Any future projects proposed pursuant to the 2019 CAP Update would be developed in accordance with General Plan Policies for energy conservation while maximizing efficient use of resources, maintaining a high quality of life, enhancing job opportunities, promoting sustainability, and facilitating access to transportation facilities.

The 2019 CAP Update includes an update to the County's GHG inventory for the year 2017 and sets a target to reduce communitywide GHG emissions by 16.3 percent by 2030. GHG reduction measures prescribed in the 2019 CAP Update build upon those adopted under the County's 2015 CAP to ensure that the County meets the reduction targets established pursuant to SB 32.

The CAP Update provides a flexible way of demonstrating GHG reductions consistent with the CAP through the use of screening tables. The screening tables included in the CAP Update provide a menu of options for energy efficiency, renewable energy, water conservation measures, and additional measures that provide predictable GHG reductions. Each option within the screening tables includes point values based upon the GHG reduction that each measure can achieve relative to a development project. Projects that achieve at least 100 points from the screening tables are determined to have provided a fair-share contribution of GHG reductions and, therefore, are considered consistent with the County of Riverside CAP Update (County of Riverside 2019).

3.7.3 Impacts Analysis

This section presents the methodology used for the evaluation, provides the significance criteria used for considering project impacts related to GHGs, provides an impact evaluation, and identifies feasible mitigation measures to avoid or minimize potential impacts, if necessary.

Thresholds of Significance

Based on CEQA Guidelines Appendix G, project impacts related to GHG emissions are considered significant if any of the following occur:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting

from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Quantify greenhouse gas emissions resulting from a project; and/or
2. Rely on a qualitative analysis or performance based standards.

A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

VEGA 6

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT SIGNIFICANCE THRESHOLD

The ICAPCD has not adopted a GHG significance threshold. As previously described, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any GHG emissions significance thresholds, project GHG emissions are compared to the Mojave Desert Air Quality Management District's (MDAQMD) numeric threshold of 100,000 metric tons of CO_2e annually. While MDAQMD's significance threshold is not binding on the ICAPCD or County of Imperial, they are instructive for comparison purposes. The MDAQMD's significance threshold is appropriate because it was formulated based on similar geography and climate patterns as found in Imperial County. Therefore, the 100,000-metric ton of CO_2e threshold is appropriate for this analysis.

Ramon Substation Expansion

COUNTY OF RIVERSIDE CLIMATE ACTION PLAN

The County of Riverside 2019 CAP Update aims to reduce GHG emissions from development projects under County jurisdiction. The CAP Update builds on state and regional policies aimed at reducing GHG emissions consistent with the SB 32 2030 GHG reduction target and statewide post-2030 reduction goals. The CAP Update identifies a two-step approach in evaluating GHG emissions. First,

a screening threshold of 3,000 $MTCO_2e$/year is used to determine if additional analysis is required. Projects that do not exceed the 3,000 $MTCO_2e$/year screening threshold are considered to have a less than significant impact. Projects that exceed the 3,000 $MTCO_2e$/year screening threshold will be required to either:

1. Demonstrate and achieve a 25 percent reduction minimum of GHG emissions from a 2011-year level of efficiency compared to the mitigated project buildout year, or
2. Demonstrate at least 100 points (equivalent to an approximate 15 percent reduction in GHG emissions) through the CAP Screening Tables.

Projects that achieve at least 100 points from the screening tables are determined to have provided a fair-share contribution of GHG reductions and, therefore, are considered consistent with the County of Riverside CAP Update. As such, projects that achieve a total of 100 points or more are considered to have a less than significant individual and cumulative impact on GHG emissions.

Methodology

VEGA 6

The project-related direct and indirect emissions of GHGs were estimated using the similar methods for quantification of criteria air pollutants, as described in Section 3.3 Air Quality. Emissions were estimated using existing conditions, project construction and operations information, as well as a combination of emission factors from various sources. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. The CalEEMod worksheets generated for the VEGA 6 project are contained in the Air Quality and Greenhouse Gas Assessment prepared by ECORP Consulting, Inc. (Appendix C1 of this EIR).

Ramon Substation Expansion

Emissions were estimated using existing conditions, project construction and operations information, as well as a combination of emission factors from various sources. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2020.4.0. The CalEEMod worksheets generated for the proposed Ramon Substation expansion are contained in Appendix C2 of this EIR.

Impact Analysis

Impact 3.7-1 Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

VEGA 6

Construction and operation of the VEGA 6 project would result in a relatively small amount of GHG emissions. The VEGA 6 project would generate GHG emissions during construction and routine operational activities at the VEGA 6 project site.

Construction. During construction, GHG emissions would be generated from the operation of off-road equipment, haul-truck trips, and on-road worker vehicle trips. Table 3.7-3 shows the VEGA 6 project's construction-related GHG emissions. As previously described above, in the absence of an

established threshold from the ICAPCD, construction emissions were compared to MDAQMD's significance threshold of 100,000 metric tons of CO_2e per year. As shown in Table 3.7-3, construction of the VEGA 6 project (solar energy facility, BESS, and gen-tie line) would result in the generation of approximately 1,228 metric tons of CO_2e/year, which is below the significance threshold of 100,000 metric tons of CO_2e/year. This impact would be less than significant.

Table 3.7-3. VEGA 6 Project Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Total VEGA 6 Project Construction with Gen-Tie Line	1,228
MDAQMD Significance Threshold	*100,000*
Exceed Significance Threshold?	**No**

Source: Appendix C1 of this EIR

Operation. Once the VEGA 6 project is constructed and operational, the proposed project would have no major stationary emission sources and would require minimal vehicular trips. Operation of the VEGA 6 project would result in an increase in GHG emissions solely associated with motor vehicle trips.

As shown in Table 3.7-4, the VEGA 6 project's operational-generated GHG emissions of 2.45 metric tons of CO_2e /year would not exceed the MDAQMD's threshold of 100,000 metric tons of CO_2e/year. This impact would be less than significant.

Table 3.7-4. VEGA 6 Project Operation-Related Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/Year)
Area Source	0
Energy	0
Mobile	2.45
Waste	0
Water	0
Total	**2.45**
MDAQMD Significance Threshold	*100,000*
Exceed Significance Threshold?	**No**

Source: Appendix C1 of this EIR

Ramon Substation Expansion

Construction. During construction, GHG emissions would be generated from the operation of off-road equipment, haul-truck trips, and on-road worker vehicle trips. Table 3.7-5 shows the construction-related GHG emissions generated by the proposed Ramon Substation expansion. As shown in Table 3.7-5, construction of the proposed Ramon Substation expansion would result in the generation of approximately 214 metric tons of CO_2e/year. According to SCAQMD methodology, GHG emissions from construction are to be analyzed over the 30-year lifetime of the project. A 30-year amortization of construction emissions would be approximately 7.1 $MTCO_2e$ per year, which is below the County of Riverside's screening threshold of 3,000 metric tons of CO_2e/year. This impact would be less than significant.

Operation. Once the proposed Ramon Substation expansion is constructed and operational, there would be no major stationary emission sources. Furthermore, the proposed Ramon Substation expansion would not require any long-term employees during operations. There are already existing employees staffed at the existing Ramon Substation. These existing employees are anticipated to perform routine maintenance work and site security for the proposed expansion area. The proposed Ramon Substation expansion would not generate GHG emissions during operations and no impact would occur.

Table 3.7-5. Ramon Substation Expansion Construction-Related Greenhouse Gas Emissions

Construction Phase	CO_2e (Metric Tons/Year)
Site Preparation	9
Grading	11
Structural Facilities	180
Paving	14
Total	**214**
Amortized Construction-Related GHG Emissions	**7.1**
County of Riverside Screening Threshold	*3,000*
Exceed Screening Threshold?	**No**

Source: Appendix C2

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

Impact 3.7-2 Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

VEGA 6

As discussed in Impact 3.7-1, the proposed VEGA 6 project would generate a relatively small amount of GHG emissions during project construction and its operational lifetime. The project-generated GHG emissions would not exceed the MDAQMD significance threshold of 100,000 metric tons of CO_2e/year, which was prepared with the purpose of complying with statewide GHG-reduction efforts. While the VEGA 6 project would emit some GHG emissions during construction and a very small amount during operations, the contribution of renewable resource energy production to meet the goals of the Renewable Portfolio Standard (Scoping Plan Measure E-3) would result in a net cumulative reduction of GHG emissions, a key environmental benefit. Scoping Plan Measure E-3, Renewable Portfolio Standard, of the Climate Change Scoping Plan requires that all investor-owned utility companies generate 60 percent of their energy demand from renewable sources by the year 2030. Therefore, the short-term minor generation of GHG emissions during construction, which is necessary to create this new, low-GHG emitting power-generating facility, as well as the negligible amount generated during

ongoing maintenance operations, would be more than offset by GHG emission reductions associated with solar-generated energy during operation.

Increasing sources of solar energy is one of the measures identified under the Scoping Plan to reduce statewide GHG emissions. The proposed VEGA 6 project would reduce GHG emissions in a manner consistent with SB 32 and other California GHG-reducing legislation by creating a new source of solar power to replace the current use of fossil-fuel power and reduce GHG emissions power generation and use. Furthermore, the proposed VEGA 6 project would contribute to the continued reduction of GHG emissions in the interconnected California and western U.S. electricity systems, as the energy produced by the project would displace GHG emissions that would otherwise be produced by existing business-as-usual power generation resources (including natural gas, coal, arid renewable combustion resources).

The VEGA 6 project would generate a maximum of 80 MW of electricity at any one time. Table 3.7-5 shows the emissions that would potentially be displaced by the proposed VEGA 6 project. Note that this estimate only includes that associated with the combustion of fossil fuels; it does not include the vehicle trips associated with the project's operations, and it similarly does not include operational employee trips associated with natural gas or coal combustion nor the emissions associated with extracting and transporting those power sources. In addition, this estimate only includes the displacement of that portion of the California market that comes from fossil fuels and does not include the approximate 50 percent of the California electricity generated by non-combustion sources (wind, solar, nuclear, hydro-electric). As shown in Table 3.7-5, the VEGA 6 project would potentially displace approximately 42,576 metric tons of CO_2e per year, and approximately 1,277,277 metric tons of CO_2e over the course of 30 years.

Implementation of the proposed VEGA 6 project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHG, and this is considered a less than significant impact.

Table 3.7-6. Proposed VEGA 6 Project Displaced GHG Emissions

	Emissions (Metric Tons)				
	CO_2	CH_4	N_2O	CO_2e	
Emissions Displaced Annually (Metric Tons)					
Displaced Natural Gas-Source Emissions	38,068	0.00	0.00	38,068	
Displaced Coal-Source Emissions	4,500	0.03	0.02	4,508	
Total	**42,568**	**0.03**	**0.02**	**42,576**	
Emissions Displaced over 30 Years (Metric Tons)					
Total		**1,277,047**	**0.89**	**0.67**	**1,277,277**

Source: Appendix C1 of this EIR

Notes: In order to provide a conservative analysis, the proposed VEGA 6 project is assumed to generate electricity 25 percent of the time available (2,190 hours annually). Heat Rate indicates the energy generator efficiency of existing fossil-fuel based energy generators. The heat rate of a power plant measures the amount of fuel used to generate one unit of electricity. Power plants with lower heat rates are more efficient than plants with higher heat rates. The CEC's "Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling" (2019) estimates heat rates and operating ranges for thermal power plants supplying energy to California. The average heat rate of power plants types are as follows:

***Steam Boiler fueled by coal: 10,800 heat rate **Steam Boiler fueled by natural gas: 10,200 heat rate **Gas Turbine: 10,100 heat rate **Combined natural gas Boiler and Turbine: 7,640 heat rate.*

By omitting steam boilers fueled by coal since so little of California's energy is derived from coal, the average heat rate = 9,313 [(10,100 + 10,200 + 7,640) ÷ 3 = 9,313]. 100 MW (219,000,000 annual kWH) x 9,313 heat rate = 2,039,547,000,000 Btu displaced from fossil fuel production. Fossil fuel-based energy consumption in California is predominately derived from natural gas (37.06 percent). Coal constitutes 2.74 percent of all fossil fuel-based energy. Therefore, 865,175,837,400 of the displaced Btu is displaced natural gas consumption and 55,883,587,800 of the displaced Btu is displaced coal. The heat content of coal is assumed at 24 million Btu per ton of coal burned. At a rate of 24 million Btu per ton of coal burned, the Project would displace 2,328 tons of burned coal annually.

Ramon Substation Expansion

As discussed above, the estimated construction GHG emissions from the proposed Ramon Substation expansion are below the County of Riverside's screening threshold of 3,000 metric tons of CO_2e/year. Also, the proposed Ramon Substation expansion would not otherwise result in the generation of GHG emissions as a result of operational activities. Consequently, implementation of the proposed Ramon Substation expansion would not conflict with the County of Riverside's CAP and would not hinder the state's ability to achieve SB 32's goal of achieving a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. Implementation of the proposed Ramon Substation expansion would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHG, and this is considered a less than significant impact.

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

3.7.4 Decommissioning/Restoration and Residual Impacts

Decommissioning/Restoration

If at the end of the PPA term, no contract extension is available for a power purchaser, no other buyer of the energy emerges, or there is no further funding of the project, the project will be decommissioned and dismantled. Similar to construction activities, decommissioning and restoration would result in GHG emissions below allowable thresholds.

Residual

The proposed project's GHG emissions would result in a less than significant impact. Project operation would generally be consistent with statewide GHG emission goals and policies including SB 32. Project consistency with applicable plans, policies, and regulations adopted to reduce GHG emissions would ensure that the project would not result in any residual significant and unavoidable impacts with regards to global climate change.

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