Air Quality and Greenhouse Gas Emissions Assessment for the VEGA SES 6 Solar and Battery Storage Project

County of Imperial, California

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CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m^3	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
AB	Assembly Bill
AC	Alternating current
AF	Acre Feet
APN	Assessor Parcel Number
AQMD	Air Quality Management District
BESS	Battery Electric Storage System
BLM	Bureau of Land Management
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane

LIST OF ACRONYMS AND ABBREVIATIONS

CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
County	Imperial County
CUP	Conditional Use Permit
DC	Direct current
DPM	Diesel particulate matter
EO	Executive Order
Gen-tie	Electrical generator intertie
GHG	Greenhouse gas
GWP	Global warming potential
HSAT	Horizontal single-axis tracker
ICAPCD	Imperial County Air Pollution Control District
ICPDS	Imperial County Planning Development Services
IID	Imperial Irrigation District
IPCC	Intergovernmental Panel on Climate Change
kV	Kilovolt
MDAQMD	Mojave Desert Air Quality Management District
MWAC	Megawatt Alternating Current
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitric oxides
O_3	Ozone
PM	Particulate matter
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
PPA	Purchasing Power Agreement
ppb	Parts per billion
Project	VEGA SES 6 Solar and Battery Storage Project
PV	Photovoltaic
RE	Renewal Energy
ROGs	Reactive organic gases
SB	Senate Bill
SCAQMD	South Coast Air Quality Management
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
SR	State Route
SRA	Source receptor area
SSAB	Salton Sea Air Basin
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

This report documents the results of an assessment of both air quality and greenhouse gas (GHG) emissions completed for the VEGA SES 6 Solar and Battery Storage Project (Project) in Imperial County (County), California, which includes the construction of an 80 megawatt (MW) solar energy generation facility and a 160 MW battery energy storage system (BESS). The Project also proposes an electrical generator intertie (gen-tie) transmission line to connect to the Imperial Irrigation District's (IID) 161 kilovolt (kV) "L" Line. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations promulgated by the Imperial County Air Pollution Control District (ICAPCD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations.

1.1 Project Location

The Proposed Project Site is located on approximately 320 acres of privately-owned vacant land on a single parcel (Assessor Parcel Number (APN) 034-160-002) in the unincorporated Imperial County, California (Figure 1-1. *Project Location Map*). The site is located approximately 6 miles south of the southern-most edge of the Salton Sea; 10 miles west of the City of Brawley; and approximately 5 miles southwest of the community of Westmorland. The solar energy facility site is located directly south of Andre Road and 0.50 mile west of the Westside Main Canal (Figure 1-2. *Project Vicinity Map*). The proposed BESS would be located in the northwest portion of the Project Site. The proposed gen-tie transmission line would span approximately four miles to connect to the IID's existing 161 kV "L" Line. The entire gen-tie route would be on federal lands managed by the Bureau of Land Management (BLM) within the California Desert Conservation Area planning area. The gen-tie route would begin at the northwest corner of the solar facility site, head west approximately 0.5 miles on BLM land, then north for approximately 1.0 mile, and then west for 2.5 miles along Garvey Road where it would connect to the IID 161 kV "L" Line.

The topography of the Project Site is relatively flat, with elevations ranging between -39 meters (-129 feet) and -6 meters (-21 feet). The solar energy facility site is bound by undeveloped Open Space/BLM land immediately to the west and south, and active agricultural land to the north and east. The Westside Main Canal travels southeast to northwest and is located northeast and east of the solar energy facility site.

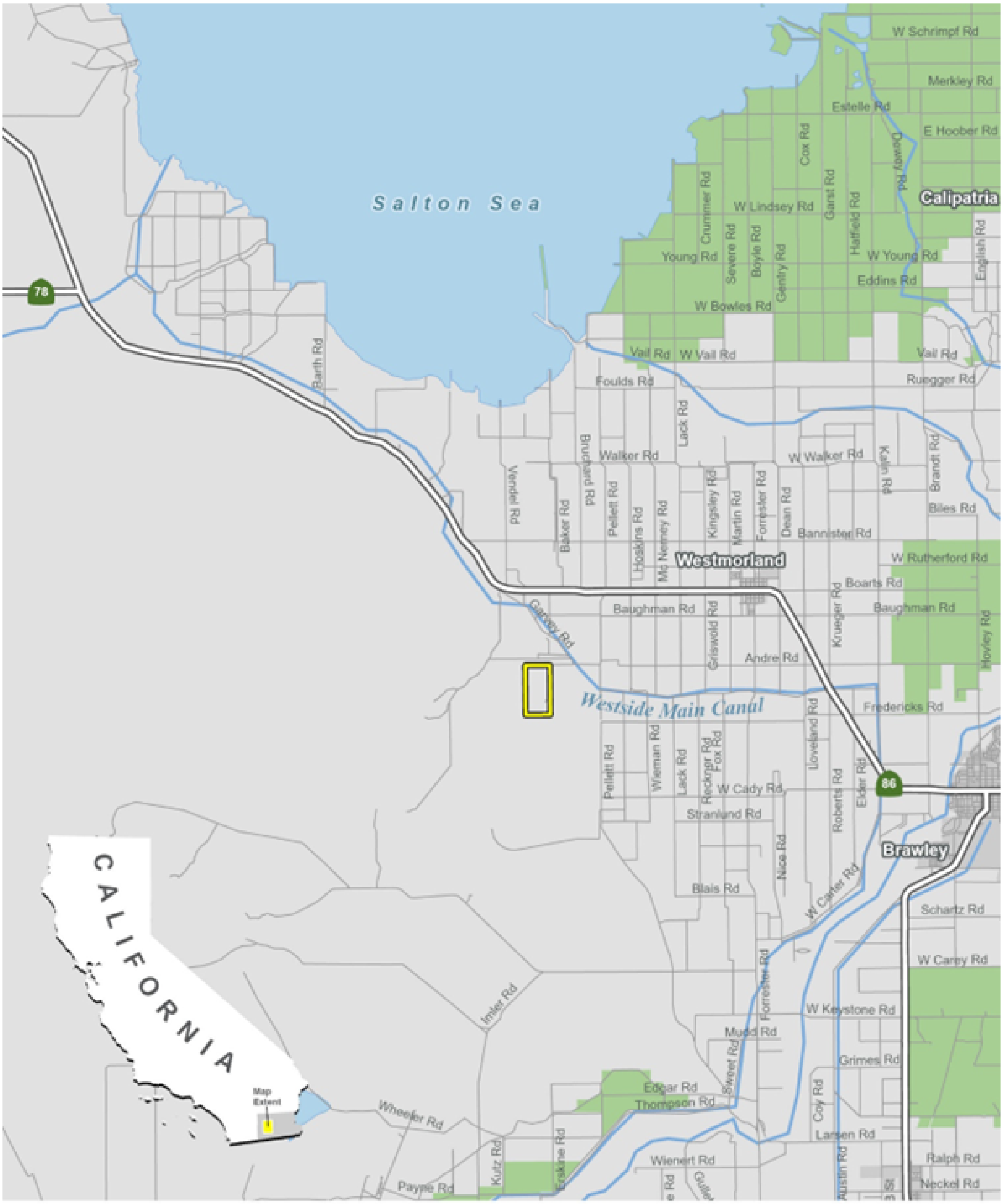

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Figure 1-1. Project Location Map

2020-144 VEGA 6 SES Solar & Battery Storage Project

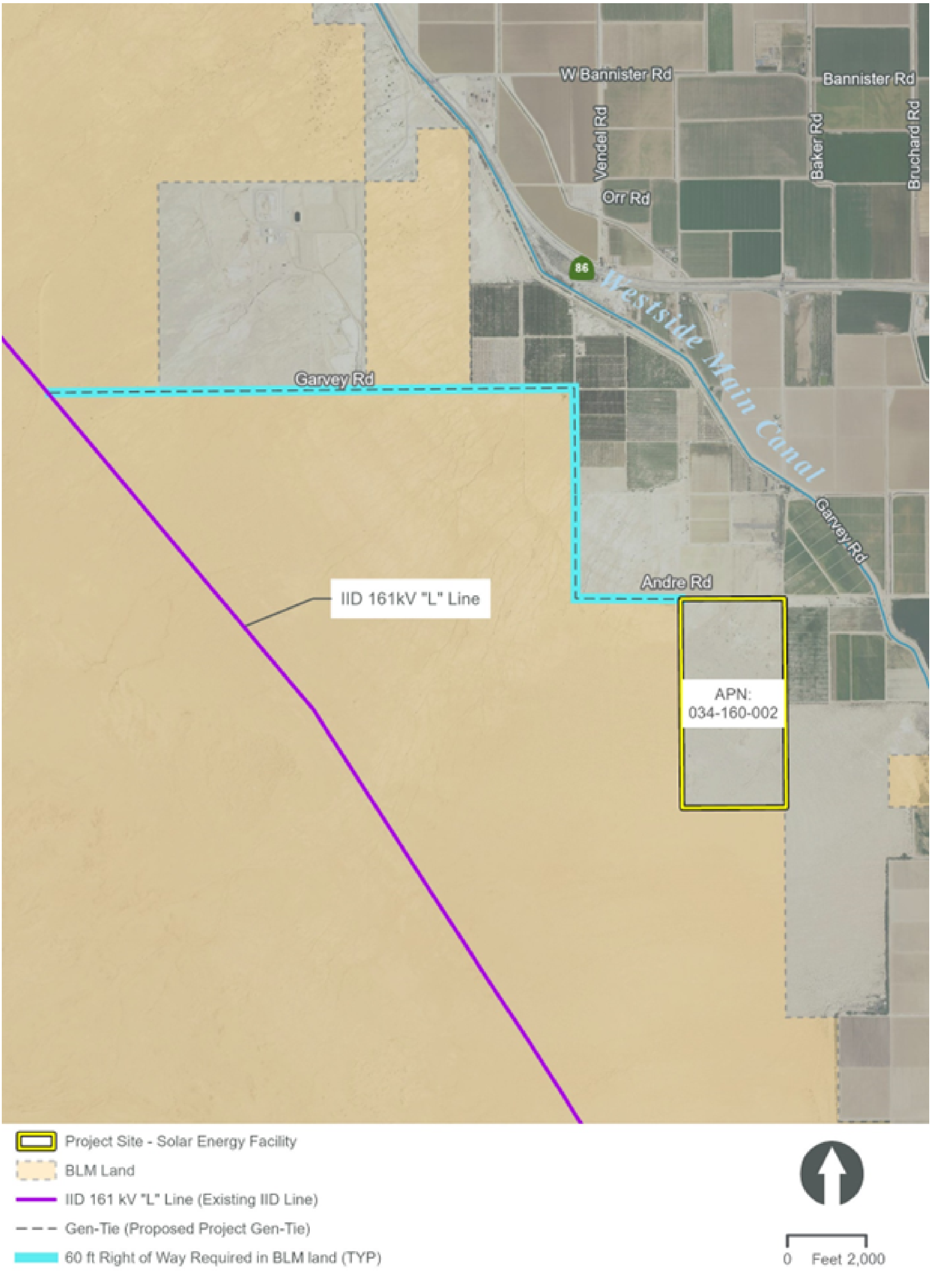

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Figure 1-2. Project Vicinity Map

2020-144 VEGA 6 SES Solar & Battery Storage Project

1.2 Project Overview

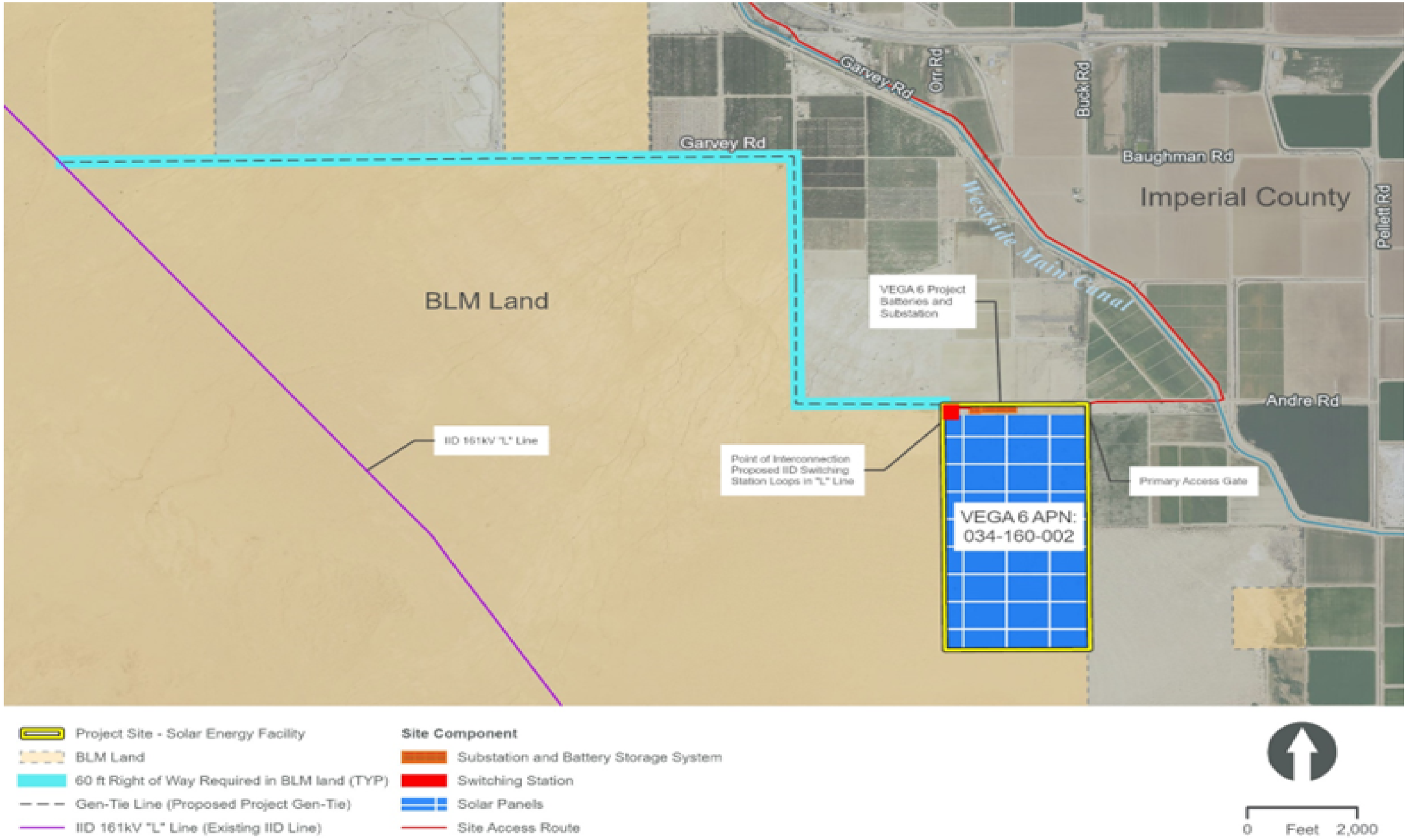
In 2016, the County adopted the Imperial County Renewable Energy and Transmission Element, which includes a Renewable Energy (RE) Zone (RE Overlay Map). This General Plan element was created as part of the California Energy Commission Renewable Energy Grant Program to amend and update the County's General Plan to facilitate future development of renewable energy projects.

The County Land Use Ordinance, Division 17, includes the RE Overlay Zone, which authorizes the development and operation of renewable energy projects with an approved conditional use permit (CUP). The RE Overlay Zone is concentrated in areas determined to be the most suitable for the development of renewable energy facilities while minimizing the impact on other established uses. CUP applications proposed for specific renewable energy projects not located in the RE Overlay Zone would not be allowed without an amendment to the RE Overlay Zone.

As shown on Figure 1-1, the entire Project Site is located outside of the RE Overlay Zone. Therefore, the applicant is requesting a General Plan Amendment to include/classify the Project Site (APN No. 034-160-002) into the RE Overlay Zone. No change in the underlying General Plan land use (Agriculture) is proposed.

1.3 Project Description

As previously described, the Proposed Project involves the construction and operation of an 80 MW PV solar facility with an integrated 160 MW BESS on approximately 320 acres of privately-owned land. The Project would be comprised of solar PV arrays panels, an on-site substation, BESS, gen-tie line, inverters, transformers, underground electrical cables, and access roads. These Project components are described in detail below and depicted in Figure 1-3. *Site Plan*.



Map Date: *1/5/2023*
Photo (or Base) Source: *HDR 2022*

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Figure 1-3. Project Site Plan

Photovoltaic Panels/Solar Arrays

The Project proposes to use either thin film or crystalline solar PV technology modules mounted either on fixed frames or horizontal single-axis tracker (HSAT) systems. The fixed-frame PV module arrays would be mounted on racks that would be supported by driven piles. The fixed-frame racks would be secured at a fixed tilt of 20 to 30 degrees from horizontal facing a southerly direction. As proposed, individual PV modules would be mounted two high on a fixed frame, providing 12 to 24 inches of ground clearance and resulting in the tops of the panels at approximately 7.5 feet above the ground. The fixed PV modules would be arranged in arrays spaced approximately 15 to 25 feet apart (pile-to-pile) to maximize performance and to allow access for panel cleaning. These arrays would be separated from each other and the perimeter security fence by up to 30-foot-wide interior roads.

If HSAT technology is used, the PV modules would rotate around the north-south HSAT axis so that the PV modules would continue to face the sun as the sun moves across the sky throughout the day. The PV modules would reach their maximum height (up to 9 feet above the ground, depending on the final design) at both sunrise and sunset, when the HSAT is rotated to point the modules at the rising or setting sun. At noon, or when stowed during high winds, when the HSAT system is rotated so that the PV modules are horizontal, the nominal height would be about six feet above the ground, depending on the final design. The individual PV systems would be arranged in large arrays by placing them in columns spaced approximately 10 feet apart to maximize operational performance and to allow access for panel cleaning and maintenance. Individual HSAT PV modules, each approximately two feet wide by four feet long (depending on the specific PV technology selected), would be mounted on a frame which is attached to an HSAT system. These HSAT arrays would be separated from each other and the perimeter security fence by up to 30-foot-wide roads, consistent with County emergency access requirements.

Battery Energy Storage System

The proposed BESS would be constructed adjacent to the Project's substation and would consist of either lithium ion or flow batteries. The batteries will either be housed in storage containers or buildings fitted with heating, ventilation, and air conditioning and fire suppression systems. Inside the housing, the batteries would be placed on racks, the orientation of which depends on the type of housing. Underground trenches with conduits will be used to connect the batteries to the control and monitoring systems, and inverters to convert the PV-produced direct current (DC) power to alternating current (AC) power. The BESS would be capable of storing up to 160 MW.

Substation and Interconnection Switching Station

As shown in Figure 1-3, a new substation would be constructed in the northwest portion of the solar energy facility site. The inverters would be connected to pad-mounted transformers. This system collects the energy from all the inverters and then transmits it through a generator step-up transformer, which steps up the voltage level to the 161 kV of the existing IID "L" line.

A new interconnection switching station would be constructed in the northwest corner of the solar energy facility site, immediately adjacent to the substation. The switching station would include circuit breakers, switches, overhead bus work, protective relay equipment and an electrical control building. The switching station would operate at 161 kV and be equipped with two circuit breakers, allowing for looping in of the IID 161 kV "L" transmission line as well as connection to the Project's gen-tie line. The substation and

switching station would be connected via a single overhead 161 kV line. The switching station would be enclosed within its own fence.

The medium voltage power produced by the Project would be conveyed underground, or aboveground where necessary to cross over any sensitive site features, to connect to the Project's interconnection facilities. The Project's interconnection facilities design would meet all necessary utility standards and requirements. As required, surge arrestors would be used to protect facilities and auxiliary equipment from lightning strikes or other disturbances. Distribution from the site would be via an overhead connection.

Electrical Generator Intertie (Gen-Tie) Transmission Line

As previously stated, the Proposed Project includes an approximately 4-mile gen-tie transmission line that would connect to the IID's existing 161 kV "L" Line. The 4-mile gen-tie line would include a total of 78 pole structures, with a combination of tangent double circuit wood pole structures, dead-end double circuit wood pole structures, and double circuit steel poles. At the interconnection point, three wood pole structures and dead-end wood structures would be used. The height of the proposed gen-tie transmission structures would be 75 feet. The electrical energy produced by the Project would be conducted through the project substation to the proposed 161 kV gen-tie line and delivered to the existing IID-approved point of interconnection at the IID 161 kV "L" line. Construction of the gen-tie line would result in approximately 24.5 acres of disturbed area.

Site Access

The solar energy facility site would include one primary access driveway, proposed via State Route (SR) 78 from the north and west, and across the Westside Main Canal, via county roadways (Garvey Road and Andre Road). This driveway would be provided with a minimum of 30-foot double swing gates with "Knox Box" for keyed entry. Internal to the solar energy facility site, up to 30-foot-wide roads would be provided between the PV arrays, as well as around the perimeter of the solar energy facility site yet inside the perimeter security fence to provide access to all areas of the site for maintenance and emergency vehicles.

Project Construction

Construction activities would primarily involve demolition and grubbing; grading of the Project Area to establish access roads and pads for electrical equipment (inverters and step–up transformers); trenching for underground electrical collection lines; the installation of solar equipment and security fencing; and the offsite infrastructure work required for the IID gen-tie transmission line route. Stormwater management facilities would be constructed internally within the Project Site and would consist of basins and infiltration areas. Construction is estimated to take 12 to 18 months and would begin in 2023. A temporary, portable construction supply container would be located at the Project Site at the beginning of construction and removed at the end of construction.

Dust generated during construction would be controlled by watering and, as necessary, the use of other dust suppression methods and materials accepted by the Imperial County Air Pollution Control District (ICAPCD). The Proposed Project would require approximately 550-acre feet (AF) of water for dust suppression and site grading during construction of the arrays, BESS area, and onsite substation. Water for construction (primarily dust control) would be obtained from local IID irrigation canals or laterals in conformance with IID construction water acquisition requirements. Water would be picked up from a nearby

lateral canal and delivered to the construction location by a water truck that would be capable of carrying approximately 4,000 gallons per load.

The number of on-site construction workers for the solar energy facility is not expected to exceed 150 workers at any one time. The number of on-site construction workers for the BESS and the substation is not expected to exceed 100 workers at any one time.

Project Operations

Once construction is completed, the facility would be remotely operated, controlled and monitored and with no requirement for daily on-site employees. Security personnel may conduct unscheduled security rounds and would be dispatched to the Project Site in response to a fence breach or other alarm.

Up to two to three people would be contracted (part-time) to perform all routine and emergency operational and maintenance activities. Such activities include inspections, equipment servicing, site and landscape clearing, and periodic washing of the PV modules if needed (up to two times per year) to maintain power generation efficiency. Vegetation growing on the Project Site would periodically (approximately every 3 months) be removed manually and/or treated with herbicides.

Periodic washing of the PV modules is not expected to be necessary but could be needed to remove dust to maintain power generation efficiency. The amount of water needed for this purpose is conservatively estimated at 10 AF per washing, with up to two washings per year, or a total of up to 20 AF per year. This water would be water purchased from the IID.

Electricity generated by the facility could be sold under the terms of a purchasing power agreement (PPA) with a power purchaser (i.e., utility service provider). At the end of the PPA term, the owner of the facility may choose to enter into a subsequent PPA, update technology and re-commission, or decommission and remove the generating facility and its components. Upon decommissioning, the site could be converted to other uses in accordance with applicable land use regulations in effect at that time. A collection and recycling program will be executed to promote recycling of project components and minimize disposal in landfills. All permits related to decommissioning would be obtained, where required.

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Salton Sea Air Basin (SSAB), which encompasses the Project Site, pursuant to the regulatory authority of the ICAPCD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 Salton Sea Air Basin

The California Air Resources Board (CARB) divides the State into air basins that share similar meteorological and topographical features. Imperial County, which extends over 4,482 square miles in the southeastern corner of California, lies in the SSAB, which includes the Imperial Valley and the central part of Riverside County, including the Coachella Valley. The province is characterized by the large-scale sinking and warming of air within the semi-permanent subtropical high-pressure center over the Pacific Ocean. The elevation in Imperial County ranges from about 230 feet below sea level in the Salton Sea to more than 2,800 feet on the mountain summits to the east.

2.1.1.1 Temperature and Precipitation

The flat terrain near the Salton Sea, intense heat from the sun during the day, and strong radiational cooling at night create deep convective thermals during the daytime and equally strong surface-based temperature inversions at night. The temperature inversions and light nighttime winds trap any local air pollution emissions near the ground. The area is subject to frequent hazy conditions at sunrise, followed by rapid daytime dissipation as winds pick up and the temperature warms. The lack of clouds and atmospheric moisture creates strong diurnal and seasonal temperature variations ranging from an average summer maximum of 108 degrees Fahrenheit (° F) down to a winter morning minimum of 38° F. The most pleasant weather occurs from about mid-October to early May when daily highs are in the 70s and 80s with very infrequent cloudiness or rainfall. Imperial County experiences rainfall on an average of only four times per year (>0.10 inches in 24 hours). The local area usually has three days of rain in winter and one thunderstorm day in August. The annual rainfall in this region is less than three inches per year.

2.1.1.2 Wind

Winds in the area are driven by a complex pattern of local, regional and global forces, but primarily reflect the temperature difference between the cool ocean to the west and the heated interior of the entire desert southwest. For much of the year, winds flow predominantly from the west to the east. In summer, intense solar heating in the Imperial Valley creates a more localized wind pattern, as air comes up from the southeast

via the Gulf of California. During periods of strong solar heating and intense convection, turbulent motion creates good mixing and low levels of air pollution. However, even strong turbulent mixing is insufficient to overcome the limited air pollution controls on sources in the Mexicali, Mexico area. Imperial County is predominately agricultural land. This is a factor in the cumulative air quality of the SSAB. The agricultural production generates dust and small particulate matter through the use of agricultural equipment on unpaved roads, land preparation, and harvest practices. The Imperial County experiences unhealthful air quality from photochemical smog and from dust due to extensive surface disturbance and the very arid climate.

2.1.1.3 Inversion

The entire county is affected by inversion layers, where warm air overlays cooler air. Inversion layers trap pollutants close to the ground. In the winter, these pollutant-trapping, ground-based inversions are formed during windless, clear-sky conditions, as cold air collects in low-lying areas such as valleys and canyons. Imperial County experiences surface inversions almost every day of the year. Due to strong surface heating, these inversions are usually broken allowing pollutants to be more easily dispersed.

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.2.1 Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SSAB are in compliance with the state and federal one- and eight-hour standards.

2.1.2.2 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds

collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.2.3 Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.2.4 Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and

children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

2.1.3.1 Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As

described in detail below, the Project region is designated as a nonattainment area for the federal O_3, $PM_{2.5}$ and PM_{10} standards and is also a nonattainment area for the state standards for O_3 and PM_{10}. The Westmorland air quality monitoring station (570 Cook Street Westmoreland, California), located approximately 4.5 miles northeast of the Project Site, monitors ambient concentrations of O_3 and PM_{10}. The Brawley air quality monitoring station (220 Main Street Brawley, California), located approximately 9.4 miles east of the Project Site, monitors ambient concentrations of $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$ and PM_{10} from the Westmorland and Brawley monitoring stations for each year that the monitoring data is provided. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2019	2020	2021
O_3- Westmorland – 570 Cook Street			
Max 1-hour concentration (ppm)	0.071	0.067	0.081
Max 8-hour concentration (ppm) (state/federal)	0.061 / 0.060	0.059 / 0.059	0.073 / 0.072
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	0 / 0	0 / 0	1 / 1
PM_{10}- Westmorland – 570 Cook Street			
Max 24-hour concentration (µg/m^3) (state/federal)	187.8 / 188.3	297.2 / 286.8	543.1 / 547.1
Number of days above 24-hour standard (state/federal)	56.5 / 1.0	91.3 / 2.0	105.5 / 3.0
$PM_{2.5}$- Brawley – 220 Main Street			
Max 24-hour concentration (µg/m^3) (state/federal)	46.1 / 46.1	23.7 / 23.7	24.4 / 24.4
Number of days above federal 24-hour standard	3.1	0	*

Source: CARB 2022a
µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the portion of the SSAB encompassing the Project Site is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the Imperial County Portion of the SSAB

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Attainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2020; 2018

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} (CARB 2020; 2018).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest existing sensitive receptor to the Project Site is a single-family residence located approximately 0.5 mile from the southeastern corner of the Project boundary.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SSAB for the criteria pollutants.

2.2.2 State

2.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

2.2.2.2 California State Implementation Plan

The CCAA (and its subsequent amendments) requires the state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

Local air districts, such as the ICAPCD, prepare air quality attainment plans or air quality management plans and submit them to CARB for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis.

For 8-Hour O_3, the ICAPCD adopted the 2017 8-hour Ozone State Implementation Plan in October 2018. The plan includes control measures which are an integral part of how the ICAPCD currently controls the ROG and NO_X emissions within the O_3 nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of Reasonable Available Control Technology (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions.

For PM_{10}, the ICAPCD adopted the PM_{10} State Implementation Plan in 2018, which maintained previously adopted fugitive dust control measures (Regulation VIII). The USEPA had previously approved Regulation VIII fugitive dust rules into the Imperial County portion of the California SIP in 2013.

For $PM_{2.5}$, the ICAPCD adopted the $PM_{2.5}$ SIP in April 2018. This SIP concluded that the majority of the $PM_{2.5}$ emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but for" transport of international emissions from Mexicali, Mexico. In accordance with the CCAA, the $PM_{2.5}$ SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA.

The ICAPCD is working cooperatively with counterparts from Mexico to implement emissions reductions strategies and projects for air quality improvements at the border. The two countries strive to achieve these goals through local input from states, County governments, and citizens. Within the Mexicali and Imperial Valley area, the Air Quality Task Force (AQTF) has been organized to address those issues unique to the border region known as the Mexicali/Imperial air shed. The AQTF membership includes representatives from Federal, State, and local governments from both sides of the border, as well as representatives from academia, environmental organizations, and the general public. This group was created to promote regional efforts to improve the air quality monitoring network, emissions inventories, and air pollution transport modeling development, as well as the creation of programs and strategies to improve air quality.

2.2.2.3 Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

2.2.3.1 Imperial County Air Pollution Control District

The ICAPCD is the local air quality agency and shares responsibility with CARB for ensuring that state and federal ambient air quality standards are achieved and maintained in the SSAB. Furthermore, ICAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other ICAPCD responsibilities include monitoring ambient air quality, preparing clean air plans, planning activities such as modeling and maintenance of the emission inventory, and responding to citizen air quality complaints.

To achieve and maintain ambient air quality standards, the ICAPCD has adopted various rules and regulations for the control of airborne pollutants. The ICAPCD Rules and Regulations that are applicable to the Proposed Project include, but are not limited to, ICAPCD Regulation VIII (Fugitive Dust Rules). The purpose of this regulation is to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. Regulation VIII requires the Project to adopt best available control measures to minimize emissions from surface-disturbing activities. These measures include the following (ICAPCD 2017):

- All disturbed areas, including bulk material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.
- All on-site and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, or dust suppressants.
- All unpaved traffic areas of 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.

- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

In addition, there are other ICAPCD rules and regulations, not detailed here, which may apply to the Proposed Project, but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1. Conflict with or obstruct implementation of any applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

2.3.1.1 Imperial County Air Pollution Control District Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (ICAPCD) may be relied upon to make the above determinations. The ICAPCD has identified significance thresholds for use in evaluating project impacts under CEQA. Accordingly, the ICAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed Project would result in a significant air quality impact. Significance thresholds for evaluation construction and operational air quality impacts are listed in Table 2-4.

Table 2-4. ICAPCD Significance Thresholds – Pounds per Day			
Criteria Pollutant and Precursors	**Construction Activities**	**Operations**	
	Average Daily Emissions (lbs/day)	**Average Daily Emissions (lbs/day)**	
		Tier I Threshold	**Tier II Threshold**
ROG	75	<137	>137
NO_x	100	<137	>137
PM_{10}	150	<150	>150
$PM_{2.5}$	N/A	<550	>550
CO	550	<550	>550
SO_2	N/A	<150	>150

Source: ICAPCD 2017

Projects that are predicted to exceed Tier I thresholds require implementation of applicable ICAPCD standard mitigation measures to be considered less than significant. Projects exceeding Tier II thresholds are required to implement applicable ICAPCD standard mitigation measures, as well as applicable discretionary mitigation measures. Projects that exceed the Tier II thresholds after implementation of standard and discretionary mitigation measures would be considered to have a potentially significant impact to human health and welfare.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the ICAPCD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. It is noted that CalEEMod 2022.1 was released while this analysis was in process. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Imperial County coupled with information provided by the Project applicant. For instance, as described in the Section 1.3, *Project Description*, construction activities would primarily involve demolition and grubbing; grading of the Project Area to establish access roads and pads for electrical equipment (inverters and step–up transformers); trenching for underground electrical collection lines; the installation of solar equipment and security fencing; and the offsite infrastructure work required for the IID gen-tie transmission line route. Stormwater management facilities would be constructed internally within the Project Site and would consist of basins and infiltration areas. Construction is estimated to take 12 to 18 months and would begin in 2023. A temporary, portable construction supply container would be located at

the Project Site at the beginning of construction and removed at the end of construction. The number of on-site construction workers for the solar energy facility is not expected to exceed 150 workers at any one time. The number of on-site construction workers for the BESS and the substation is not expected to exceed 100 workers at any one time. According to the Traffic Study prepared for the Project (KOA 2020), Project construction would generate a maximum of 310 construction worker-commute trips in a single day.

Construction workers would travel to the Project Site via SR 78 before traversing the Westside Main Canal, via the County roadways, Garvey Road and Andre Road. It is noted that both Garvey and Andre roads, which span 2.6 miles of the access route, are unpaved. Thus, the PM emissions associated with construction workers traversing 2.6 miles of unpaved roads are accounted.

The Proposed Project would require approximately 550 AF (179,200,000 gallons) of water for dust suppression and site grading during construction of the arrays, BESS area, and onsite substation. The CalEEMod modeling software does not precisely quantify indirect emissions associated with the pumping and conveyance of water used during construction activities. Therefore, for the purposes of this analysis, the water consumption necessary for construction is amortized over the life of the Project (30 years) and added to the total water consumption anticipated during Project operations.

Operational air pollutant emissions account for the maximum three workers visiting the site in a single day. Such visits include inspections, equipment servicing, site and landscape clearing, and periodic washing of the PV modules if needed (up to two times per year) to maintain power generation efficiency. Therefore, operational onsite equipment use is accounted in addition to the consumption of 20 AF (6,517,000 gallons) of water annually. [25.5 AF (12,490,333 gallons) of water accounting for the amortized water consumption during construction activities (179,200,000 + 6,517,000 = 12,490,333)].

2.3.3 Impact Analysis

2.3.3.1 Project Construction-Generated Criteria Air Quality Emissions

Emissions associated with Project implementation would be temporary and short-term but have the potential to represent a significant air quality impact. Two basic sources of short-term emissions will be generated through Project implementation: operation of the heavy-duty equipment (i.e., excavators, loaders, haul trucks) and the creation of fugitive dust during clearing and grading. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Construction activities would be subject to ICAPCD Regulation VIII which, as previously described, requires taking reasonable precautions to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. Regulation VIII requires the Project to adopt best available control measures to minimize emissions from surface-disturbing activities to comply with ICAPCD Regulation VIII (Fugitive Dust Rules).

Emissions associated with Project off-road equipment, worker commute trips, and ground disturbance were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Section 2.3.2, *Methodology*, and Attachment A for more information regarding the construction assumptions, including types of construction equipment used and Project duration used in this analysis.

Predicted maximum daily emissions attributable to Project construction are summarized in Table 2-5. Such emissions are short-term and of temporary duration, lasting only as long as Project construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the ICAPCD thresholds of significance.

Table 2-5. Unmitigated Project Construction-Generated Emissions

Construction Year	Pollutant (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction in Calendar Year One	4.24	34.56	42.27	0.07	1,208.90	121.99
Construction in Calendar Year Two	3.97	22.82	41.35	0.07	1,208.73	121.87
ICAPCD Significance Threshold	*75*	*100*	*550*	*N/A*	*150*	*N/A*
Exceed ICAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.
Notes: Pounds per day taken from the season with the highest output.

As shown in Table 2-5, emissions of PM_{10} would exceed the ICAPCD significance threshold on the peak day(s) of construction. The predominant source of Project PM_{10} emissions is workers commuting to and from the Project Site on unpaved roads. Commute vehicles traveling over the exposed soils of unpaved roads generate substantial amounts of fugitive PM_{10} emissions.

Construction workers and vendors would travel to the Project Site via SR 78 before traversing the Westside Main Canal, via the County roadways, Garvey Road and Andre Road. It is noted that both Garvey and Andre roads, which span 2.6 miles of the access route, are unpaved. Therefore, mitigation measure AQ-1 is required in order to reduce PM_{10} emissions to levels below the significance threshold. Mitigation measure AQ-1 would require the use of soil stabilizers on the 2.6 miles of unpaved roadway used for construction worker and vendor access to the Project Site.

The following mitigation is recommended:

AQ-1: Project Construction Dust Suppression

During construction activities the construction contractor shall employ the following PM_{10} reducing measures:

1. All unpaved roads associated with construction shall be effectively stabilized of dust emissions using Imperial County Air Pollution Control District-approved chemical stabilizers/suppressant before the commencement of construction, and every 30 days thereafter until the end of all construction activities. Unpaved roads associated with construction include:

    - The 2.6 miles of unpaved road on Garvey Road and Andre Road between the Westside Main Canal and the Project Site. Monthly application of Imperial County Air Pollution Control District-approved chemical stabilizers/suppressant shall be applied at a rate of 0.1 gallon/ square yard of chemical dust suppressant.

2. Prior to any earthmoving activity, the applicant shall submit a construction dust control plan and obtain Imperial County Air Pollution Control District and Imperial County Planning and Development Services Department (ICPDS) approval.

3. Pursuant to the Imperial County Air Pollution Control District, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. Whereas these Regulation VIII measures are mandatory and are not considered project environmental mitigation measures, the Imperial County Air Pollution Control District CEQA Handbook's required additional standard and enhanced mitigation measures listed below shall be implemented prior to and during construction. Imperial County Air Pollution Control District will verify implementation and compliance with these measures as part of the grading permit review/approval process.

    Imperial County Air Pollution Control District Standard Measures for Fugitive Dust (PM_{10}) Control

    - All disturbed areas, including bulk material storage, which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.
    - All on-site and offsite unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
    - All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
    - The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.

- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants, and/or watering.

Imperial County Air Pollution Control District "Discretionary" Measures for Fugitive Dust (PM_{10}) Control

- Water exposed soil only in those areas where active grading and vehicle movement occurs with adequate frequency to control dust.
- Replace ground cover in disturbed areas as quickly as possible.
- Automatic sprinkler system installed on all soil piles.
- Vehicle speed for all construction vehicles shall not exceed 15 miles per hour on any unpaved surface at the construction site.
- Develop a trip reduction plan to achieve a 1.5 average vehicle ridership for construction employees.
- Implement a shuttle service to and from retail services and food establishments during lunch hours.

Standard Mitigation Measures for Construction Combustion Equipment

- Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

Enhanced Mitigation Measures for Construction Equipment

To help provide a greater degree of reduction of PM emissions from construction combustion equipment, Imperial County Air Pollution Control District recommends the following enhanced measures.

- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to reduce short-term impacts).

Table 2-6 shows the results of construction emissions with implementation of mitigation measures AQ-1.

Table 2-6. Mitigated Project Construction-Generated Emissions

Construction Year	Pollutant (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction in Calendar Year One	4.24	34.56	42.27	0.07	113.97	12.72
Construction in Calendar Year Two	3.97	22.82	41.35	0.07	113.84	12.60
ICAPCD Significance Threshold	*75*	*100*	*550*	*N/A*	*150*	*N/A*
Exceed ICAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.
Notes: Pounds per day taken from the season with the highest output.

As shown in Table 2-6, emissions generated during Project construction would not exceed the ICAPCD's thresholds of significance with implementation of mitigation measures AQ-1.

2.3.3.2 Operational Criteria Air Quality Emissions

Although limited, implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. Project-generated increases in emissions would be predominately associated with motor vehicle use for routine maintenance work, site security, and trucking in water. Long-term operational emissions attributable to the Project are identified in Table 2-7 and compared to the operational significance thresholds promulgated by the ICAPCD.

Table 2-7. Operational-Related Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	6.09	0.00	0.05	0.00	0.00	0.00
Energy	0.27	2.42	2.03	0.01	0.18	0.18
Mobile	0.05	0.07	0.60	0.00	61.69	6.16
Offroad Equipment	1.11	10.36	12.73	0.02	0.52	0.48
Total:	**7.52**	**12.85**	**15.41**	**0.03**	**62.39**	**6.82**
Winter Emissions						
Area	6.09	0.00	0.05	0.00	0.00	0.00
Energy	0.26	2.42	2.03	0.01	0.18	0.18
Mobile	0.04	0.07	0.47	0.00	61.69	6.16
Offroad Equipment	1.11	10.36	12.72	0.02	0.52	0.48
Total:	**7.50**	**12.85**	**15.27**	**0.03**	**62.39**	**6.82**
ICAPCD Significance Threshold	*137*	*137*	*150*	*550*	*150*	*550*
Exceed ICAPCD Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for six vehicle trips per day. It is noted that this is a conservative estimate, and many days will have no operational related vehicle trips.

As shown in Table 2-7, the Project's emissions would not exceed any ICAPCD's thresholds for any criteria air pollutants during operation. Additionally, the purpose of the Project is the operation of a renewable energy and storage facility. Once in operation, it will decrease the need for energy from fossil fuel–based power plants in the state (see Table 2-8). Thus, once operational the Project would represent a beneficial impact to air quality.

2.3.3.3 Conflict with an Applicable Air Quality Management Plan

As previously described, the Project region is classified as nonattainment for federal O_3 and $PM_{2.5}$ standards (CARB 2020; 2018). The USEPA, under the provisions of the CAA, requires each state with regions that have not attained the federal air quality standards to prepare a SIP, detailing how these standards are to be met in each local area. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. CARB is the lead agency for developing the SIP in California. Local air districts, such as the ICAPCD, prepare air quality attainment plans or air quality management plans and submit them to CARB

for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis.

The region's SIP is constituted of the ICAPCD air quality plans: 2018 PM_{10} SIP, the 2018 Annual $PM_{2.5}$ SIP, the 2017 8-Hour Ozone SIP, 2013 24-Hour $PM_{2.5}$ SIP, the 2009 1997 8-hour Ozone RACT SIP, the 2009 PM_{10} SIP and the 2008 Ozone Early Progress Plans. Project compliance with all of the ICAPCD rules and regulations results in conformance with the ICAPCD air quality plans. These air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. These SIP plans and associated control measures are based on information derived from projected growth in Imperial County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Imperial County and the incorporated cities in the county.

As previously described, the Project is proposing the development of an 80 MW alternating current PV energy generation system with an integrated 320 MWH battery storage facility on approximately 320 acres of land, for a total of 344.5 acres including the gen-tie transmissions. The Project would not result in population growth and would not cause an increase in currently established population projections. The Project does not include residential development or large local or regional employment centers, and thus would not result in significant population or employment growth.

Furthermore, the operation of the Project would create renewable energy over its planned lifetime and decrease the need for energy from fossil fuel–based power plants in the state, which is considered a beneficial impact to statewide air quality. The energy produced by the Project would displace the criteria pollutant emissions which would otherwise be produced by existing business-as-usual power generation resources (including natural gas and coal).

Table 2-8 shows the emissions that would potentially be displaced by the Proposed 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) (California Energy Commission [CEC] 2020). Displacement of fossil fuel emissions has a direct beneficial effect on human health for those receptors downwind of the location of the fossil fuel power plants.

Table 2-8. Proposed Project Displaced Criteria Pollutant Emissions (Tons)

Construction Year	Emissions (Tons)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Emissions Displaced Annually (tons)						
Displaced Natural Gas-Source Emissions	0.0	1.7	0.5	1.2	1.6	0.7
Displaced Coal-Source Emissions	0.0	11.1	0.5	0.5	0.1	0.1
Total	**0.0**	**12.8**	**1.0**	**1.7**	**1.7**	**0.8**
Emissions Displaced over 30 Years (tons)						
Total	**0.0**	**386.6**	**29.5**	**51.2**	**51.1**	**21.4**

Source: Displaced emissions calculated by ECORP using USEPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015. See Attachment B.

Notes: In order to provide a conservative analysis, the proposed 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]. 80 MW (175,200,000 annual kWH) x 9,313 heat rate = 1,631,637,600,000 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, 692,140,669,920 of the displaced Btu is displaced natural gas consumption and 44,706,870,240 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 1,863 tons of burned coal annually.

As shown, the Project would potentially displace approximately 387 tons of NO_x, 30 tons of CO, 51 tons of SO_2, 51 tons of PM_{10}, and 21 tons of $PM_{2.5}$ over the course of 30 years. Furthermore, as demonstrated in Table 2-6 and Table 2-7, the Project would not exceed the applicable significance thresholds for construction or operational-source emissions.

2.3.3.4 Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest existing noise-

sensitive land use to the Project Site is a single-family residence located 2,725 feet from the northeastern corner of Project Site. During construction occurring offsite along the gentie transmission line route to the IID electrical grid line, the nearest sensitive receptors would be 970 feet distant.

Construction-Generated Air Contaminants

Construction of the Project would result in temporary, short-term proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for Project construction; soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SSAB which encompasses the Project Area is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} (CARB 2020; 2018). Thus, existing O_3 and PM_{10} levels in the SSAB are at unhealthy levels during certain periods. However, as shown in Table 2-6, the Project would not exceed the ICAPCD significance thresholds for construction emissions with implementation of mitigation measure AQ-1.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_x) in excess of the ICAPCD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve activities that would result in CO emissions in excess of the ICAPCD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction-type activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. Most PM_{10} exhaust derives from combustion, such as use of gasoline and diesel fuels by motor vehicles. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the ICAPCD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There would be no stationary sources associated Project operations; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at the nearby sensitive receptor as the predominant operational emissions associated with the Proposed Project would be routine maintenance work, water deliveries, and site security. Therefore, the Project would not be a substantial source of TACs. The Project will not result in a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SSAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and

afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD), the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The Proposed Project is anticipated to result in no more than 6 daily traffic trips. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values.

2.3.3.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in

nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the Project Area, which is generally devoid of surrounding receptors. Therefore, odors generated during Project construction would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified as being associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the

last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 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 CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
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 CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
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 N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O 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 N_2O is approximately 120 years.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2022, CARB released the 2022 edition of the California GHG inventory covering calendar year 2020 emissions. In 2020, California emitted 369.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2020, accounting for approximately 38 percent of total GHG emissions in the state. Continuing the downward trend from previous years, transportation emissions decreased 27 million metric tons of CO_2e in 2020, though the intensity of this decrease was most likely from light duty vehicles after shelter-in-place orders were enacted in response to the COVID-19 pandemic. Emissions from the electricity sector account for 16 percent of the inventory and have remained at a similar level as in 2019 despite a 44

percent decrease in in-state hydropower generation (due to below average precipitation levels), which was more than compensated for by a 10 percent growth in in-state solar generation and cleaner imported electricity incentivized by California's clean energy policies. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2020, accounting for 23 percent (CARB 2022b).

3.2 Regulatory Framework

3.2.1 State

3.2.1.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by 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.

3.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

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 required 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 outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

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.

3.2.1.3 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.

3.2.1.4 Senate Bill 100 of 2018

In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHG's do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a 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.
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 (14 CCR 15064.4(b)).

In addition, 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)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The ICAPCD has not adopted a GHG significance threshold yet recommends the 100,000-metric ton of CO_2e threshold established by the Mojave Desert Air Quality Management District (MDAQMD). 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)). This ICAPCD-recommended threshold is appropriate as the MDAQMD GHG thresholds were 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.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

3.3.2 Methodology

GHG-related impacts were assessed in accordance with methodologies recommended by the ICAPCD. Where GHG emission quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. It is noted that CalEEMod 2022.1 was released while this analysis was in process. Project construction-generated GHG emissions were calculated using CalEEMod model defaults for Imperial County coupled with information provided by the Project applicant. For instance, as described in the Section 1.3, Project Description, construction activities would primarily involve demolition and grubbing; grading of the Project Area to establish access roads and pads for electrical equipment (inverters and step–up transformers); trenching for underground electrical collection lines; the installation of solar equipment and security fencing; and the offsite infrastructure work required for the IID gen-tie transmission line route. Stormwater management facilities would be constructed internally within the Project Site and would consist of basins and infiltration areas. Construction is estimated to take 12 to 18 months and would begin in 2023. A temporary, portable construction supply container would be located at the Project Site at the beginning of construction and removed at the end of construction. The number of on-site construction workers for the solar energy facility is not expected to exceed 150 workers at any one time. The number of on-site construction workers for the BESS and the substation is not expected to exceed 100 workers at any one time. According to the Traffic Study prepared for the Project (KOA 2020), Project construction would generate a maximum of 310 construction worker-commute trips in a single day.

The Proposed Project would require approximately 550 AF (179,200,000 gallons) of water for dust suppression and site grading during construction of the arrays, BESS area, and onsite substation. The CalEEMod modeling software does not precisely quantify indirect emissions associated with the pumping and conveyance of water used during construction activities. Therefore, for the purposes of this analysis, the water consumption necessary for construction is amortized over the life of the Project (30 years) and added to the total water consumption anticipated during Project operations.

Operational air pollutant emissions account for the maximum three workers visiting the site in a single day. Such visits include inspections, equipment servicing, site and landscape clearing, and periodic washing of the PV modules if needed (up to two times per year) to maintain power generation efficiency. Therefore, operational onsite equipment use is accounted in addition to the consumption of 20 AF (6,517,000 gallons) of water annually. [25.5 AF (12,490,333 gallons) of water accounting for the amortized water consumption during construction activities (179,200,000 + 6,517,000 = 12,490,333)].

3.3.3 Impact Analysis

3.3.3.1 Generation of GHG Emissions

Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment

(e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Consistent with SCAQMD recommendations, Project construction GHG emissions have been amortized over the expected life of the Project, which is considered to be 30 years for a solar energy generation facility. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Construction Year One	439
Construction Year Two	351
Significance Threshold	*100,000*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment B for Model Data Outputs.

As shown in Table 3-2, Project would result in the generation of approximately 439 metric tons of CO_2e in the first year of construction and 351 metric tons in the second year of construction. Therefore, Project GHG emissions would not exceed the significance threshold.

Additionally, the Project proposes a solar energy generation facility intended to generate renewable energy. Solar plants generate far less GHG life-cycle emissions (approximately 83 to 94 percent less) than fossil-fueled energy plants. As identified in Table 3-5 below, the 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, which is considerably more than would be generated during construction.

Operations

Operation of the Project would result in an increase in GHG emissions solely associated with motor vehicle trips. Long-term GHG emissions attributed to operations of the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions	
Emission Source	**CO_2e (Metric Tons/ Year)**
Area Source	0
Energy	1,089
Mobile	14
Offroad Equipment	8
Waste	0
Water	12
Total	**1,123**
Significance Threshold	*100,000*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for six heavy-duty truck vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As shown in Table 3-3, operational-generated emissions would not exceed the significance threshold of 100,000 metric tons of CO_2e annually.

3.3.3.2 Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The Proposed Project is subject to compliance with SB 32. As discussed previously, the Proposed Project-generated GHG emissions would not surpass either the ICAPCD-recommended GHG significance threshold, which was prepared with the purpose of complying with statewide GHG-reduction efforts. Additionally, once construction is complete, the Project would be a producer of renewable energy, which generates substantially less GHG emissions compared with the more common types of fossil-fueled energy generation facilities.

GHG emissions generated by energy sources account for all stages of the life cycle (including mining, construction, etc.), which are referred to as the cumulative GHG emissions and are usually expressed in grams of CO_2e per unit of busbar electricity (i.e., gCO_2/kWh_e). When comparing various fossil-fueled energy generators, the GHG emissions generated are dependent on the type of fuel (i.e., gas, oil, coal). GHG emissions generated by some of the more common types of fossil-fueled plants and solar-power plants are summarized in Table 3-4.

Table 3-4. Life-Cycle Greenhouse Gas Emissions for Various Types of Energy Generators	
Fossil Fueled	
Coal	950 to 1,250 gCO_2e/kWhe
Oil	500 to 1,200 gCO_2e/kWhe
Gas	440 to 780 gCO_2e/kWhe
Solar	43 to 73[3] gCO_2e/kWhe

Source: Weisser 2007
Notes:
1 gCO_2e/kWhe = grams of CO_2e per unit of busbar electricity.
2 Emissions are based on lifecycle of energy source including mining, construction, operation, etc.
3 Solar PV life-cycle emissions result from using fossil-fuel-based energy to produce the materials for solar cells, modules, and systems, as well as directly from smelting, production, and manufacturing facilities.

As shown in Table 3-4, solar plants generate far less GHG life-cycle emissions (approximately 83 to 94 percent less) than fossil-fueled energy plants. Therefore, the Proposed 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).

Table 3-5 shows the emissions that would potentially be displaced by the Proposed 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) (CEC 2020).

Table 3-5. Proposed Project Displaced GHG Emissions (Metric Tons)

	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: Displaced emissions calculated by ECORP using USEPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015. See Attachment B.

Notes: In order to provide a conservative analysis, the proposed 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]. 80 MW (175,200,000 annual kWH) x 9,313 heat rate = 1,631,637,600,000 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, 692,140,669,920 of the displaced Btu is displaced natural gas consumption and 44,706,870,240 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 1,863 tons of burned coal annually.

As shown, the Project would potentially displace approximately 42,568 metric tons of CO_2e per year, and approximately 1,277,277 metric tons of CO_2e over the course of 30 years.

While the Project would emit some GHG emissions during construction and a 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 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 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.

The Project would not conflict with any applicable plan, policy, or regulation intended to reduce GHG emissions.

4.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output Files Criteria Air Pollutants

Attachment B – Renewable Energy Emissions Displacement

Attachment C – CalEEMod Output Files Greenhouse Gas Emissions

ATTACHMENT A

CalEEMod Output Files Criteria Air Pollutants

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

VEGA 6 SES Solar and Battery Storage Project

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	316.00	Acre	316.00	13,764,960.00	0
Other Non-Asphalt Surfaces	24.50	Acre	24.50	1,067,220.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2024
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.983	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses account for 316 acres of solar field, 2 acres of BESS, 2 acres of substation, and 24.5 acres of transmission line distrubance.

Construction Phase - Construction phasing adjusted to reflect the Project Description. Solar panel installation and paving assumed to occur simultaneously.

Grading -

Trips and VMT - A maximum of 310 worker commute trips during solar panel installation per Traffic Study

On-road Fugitive Dust - 75.6% paved roads for worker commutes [2.6 m dirt roads / 10.2 m trip lenght default - 75.6% paved roads]. 78.2% paved roads for vendors.

Vehicle Trips - Maximum trips per day = 6 per Project Description

Consumer Products - No degresers used during operations

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - Water use accounts for 179,200,000 gallons used during construction, amortized over the life of the Project + 6,517,000 gallons annually anticipated for operations

Solid Waste - No solid waste generation

Operational Off-Road Equipment - Off road equipment for operational maintenance

Construction Off-road Equipment Mitigation - Mitigation measure AQ-1 accounted. PM reduction value for applying soil stabilizers to unpaved roadways per communication with ICAPCD (Monica Soucier email correspondence)

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	6,200.00	197.00
tblConstructionPhase	NumDays	620.00	42.00
tblConstructionPhase	NumDays	440.00	197.00
tblConstructionPhase	NumDays	240.00	23.00
tblConstructionPhase	PhaseEndDate	8/15/2051	5/31/2024
tblConstructionPhase	PhaseEndDate	11/9/2027	8/30/2023
tblConstructionPhase	PhaseEndDate	4/22/2053	5/31/2024
tblConstructionPhase	PhaseEndDate	6/24/2025	7/3/2023
tblConstructionPhase	PhaseStartDate	11/10/2027	8/31/2023
tblConstructionPhase	PhaseStartDate	6/25/2025	7/4/2023
tblConstructionPhase	PhaseStartDate	8/16/2051	8/31/2023
tblConstructionPhase	PhaseStartDate	7/24/2024	6/1/2023
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	2.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.38	0.38
tblOperationalOffRoadEquipment	OperLoadFactor	0.42	0.42
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	189.98	189.983
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	163.79	0.00
tblTripsAndVMT	VendorTripNumber	2,460.00	4.00
tblTripsAndVMT	WorkerTripNumber	6,303.00	310.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	0.07
tblWater	IndoorWaterUseRate	40,293,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	12,490,333.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.2430	34.5620	42.2769	0.0744	1,207.6774	1.4253	1,208.9018	120.8576	1.3112	121.9988	0.0000	7,256.3624	7,256.3624	1.9488	0.0870	7,317.2129
2024	3.9776	23.8214	41.3532	0.0737	1,207.6774	1.0956	1,208.7730	120.8576	1.0207	121.8783	0.0000	7,183.8255	7,183.8255	1.3864	0.0814	7,242.7415
Maximum	**4.2430**	**34.5620**	**42.2769**	**0.0744**	**1,207.6774**	**1.4253**	**1,208.9018**	**120.8576**	**1.3112**	**121.9988**	**0.0000**	**7,256.3624**	**7,256.3624**	**1.9488**	**0.0870**	**7,317.2129**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.2430	34.5620	42.2769	0.0744	112.7482	1.4253	113.9726	11.5826	1.3112	12.7238	0.0000	7,256.3624	7,256.3624	1.9488	0.0870	7,317.2129
2024	3.9776	23.8214	41.3532	0.0737	112.7482	1.0956	113.8438	11.5826	1.0207	12.6033	0.0000	7,183.8255	7,183.8255	1.3864	0.0814	7,242.7414
Maximum	**4.2430**	**34.5620**	**42.2769**	**0.0744**	**112.7482**	**1.4253**	**113.9726**	**11.5826**	**1.3112**	**12.7238**	**0.0000**	**7,256.3624**	**7,256.3624**	**1.9488**	**0.0870**	**7,317.2129**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**90.66**	**0.00**	**90.58**	**90.42**	**0.00**	**89.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Energy	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Mobile	0.0578	0.0677	0.6034	1.2800e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		129.5118	129.5118	5.2100e-003	5.3800e-003	131.2455
Offroad	1.1098	10.3635	12.7231	0.0217		0.5217	0.5217		0.4800	0.4800	0.0000	2,096.7652	2,096.7652	0.6781		2,113.7186
Total	**7.5263**	**12.8527**	**15.4126**	**0.0375**	**61.6893**	**0.7067**	**62.3960**	**6.1562**	**0.6650**	**6.8212**	**0.0000**	**5,131.6064**	**5,131.6064**	**0.7393**	**0.0586**	**5,167.5651**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Energy	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Mobile	0.0578	0.0677	0.6034	1.2800e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		129.5118	129.5118	5.2100e-003	5.3800e-003	131.2455
Offroad	1.1098	10.3635	12.7231	0.0217		0.5217	0.5217		0.4800	0.4800	0.0000	2,096.7652	2,096.7652	0.6781		2,113.7186
Total	**7.5263**	**12.8527**	**15.4126**	**0.0375**	**61.6893**	**0.7067**	**62.3960**	**6.1562**	**0.6650**	**6.8212**	**0.0000**	**5,131.6064**	**5,131.6064**	**0.7393**	**0.0586**	**5,167.5651**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	7/3/2023	5	23	
2	Grading	Grading	7/4/2023	8/30/2023	5	42	
3	Building Construction	Building Construction	8/31/2023	5/31/2024	5	197	
4	Paving	Paving	8/31/2023	5/31/2024	5	197	

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 34.5

Acres of Grading (Grading Phase): 126

Acres of Paving: 340.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	8	20.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	4.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0901	0.0417	0.6294	1.3000e-003	66.0389	6.9000e-004	66.0396	6.6086	6.4000e-004	6.6093		131.1485	131.1485	4.1500e-003	3.8600e-003	132.4025
Total	**0.0901**	**0.0417**	**0.6294**	**1.3000e-003**	**66.0389**	**6.9000e-004**	**66.0396**	**6.6086**	**6.4000e-004**	**6.6093**		**131.1485**	**131.1485**	**4.1500e-003**	**3.8600e-003**	**132.4025**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**7.6662**	**1.2660**	**8.9323**	**3.9400**	**1.1647**	**5.1047**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0901	0.0417	0.6294	1.3000e-003	6.1648	6.9000e-004	6.1655	0.6332	6.4000e-004	0.6338		131.1485	131.1485	4.1500e-003	3.8600e-003	132.4025
Total	**0.0901**	**0.0417**	**0.6294**	**1.3000e-003**	**6.1648**	**6.9000e-004**	**6.1655**	**0.6332**	**6.4000e-004**	**0.6338**		**131.1485**	**131.1485**	**4.1500e-003**	**3.8600e-003**	**132.4025**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1002	0.0464	0.6994	1.4400e-003	73.3765	7.7000e-004	73.3773	7.3429	7.1000e-004	7.3436		145.7205	145.7205	4.6100e-003	4.2900e-003	147.1139
Total	**0.1002**	**0.0464**	**0.6994**	**1.4400e-003**	**73.3765**	**7.7000e-004**	**73.3773**	**7.3429**	**7.1000e-004**	**7.3436**		**145.7205**	**145.7205**	**4.6100e-003**	**4.2900e-003**	**147.1139**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5894**	**1.4245**	**5.0139**	**1.4250**	**1.3105**	**2.7355**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1002	0.0464	0.6994	1.4400e-003	6.8498	7.7000e-004	6.8505	0.7035	7.1000e-004	0.7042		145.7205	145.7205	4.6100e-003	4.2900e-003	147.1139
Total	**0.1002**	**0.0464**	**0.6994**	**1.4400e-003**	**6.8498**	**7.7000e-004**	**6.8505**	**0.7035**	**7.1000e-004**	**0.7042**		**145.7205**	**145.7205**	**4.6100e-003**	**4.2900e-003**	**147.1139**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.1848	0.0840	1.1900e-003	15.3086	1.9700e-003	15.3106	1.5349	1.8800e-003	1.5368		125.6099	125.6099	5.0000e-004	0.0173	130.7724
Worker	1.5523	0.7184	10.8402	0.0224	1,137.3364	0.0119	1,137.3483	113.8155	0.0110	113.8264		2,258.6681	2,258.6681	0.0715	0.0665	2,280.2654
Total	**1.5624**	**0.9032**	**10.9242**	**0.0235**	**1,152.6450**	**0.0139**	**1,152.6589**	**115.3504**	**0.0129**	**115.3632**		**2,384.2780**	**2,384.2780**	**0.0720**	**0.0838**	**2,411.0378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.1848	0.0840	1.1900e-003	1.4398	1.9700e-003	1.4417	0.1508	1.8800e-003	0.1527		125.6099	125.6099	5.0000e-004	0.0173	130.7724
Worker	1.5523	0.7184	10.8402	0.0224	106.1711	0.0119	106.1830	10.9042	0.0110	10.9152		2,258.6681	2,258.6681	0.0715	0.0665	2,280.2654
Total	**1.5624**	**0.9032**	**10.9242**	**0.0235**	**107.6109**	**0.0139**	**107.6248**	**11.0550**	**0.0129**	**11.0678**		**2,384.2780**	**2,384.2780**	**0.0720**	**0.0838**	**2,411.0378**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6600e-003	0.1842	0.0806	1.1800e-003	15.3086	1.9600e-003	15.3106	1.5349	1.8700e-003	1.5368		123.9189	123.9189	4.8000e-004	0.0170	128.9853
Worker	1.4386	0.6380	9.9964	0.0217	1,137.3364	0.0113	1,137.3477	113.8155	0.0104	113.8259		2,190.6608	2,190.6608	0.0644	0.0615	2,210.5882
Total	**1.4482**	**0.8222**	**10.0770**	**0.0229**	**1,152.6450**	**0.0133**	**1,152.6582**	**115.3504**	**0.0123**	**115.3626**		**2,314.5797**	**2,314.5797**	**0.0649**	**0.0784**	**2,339.5735**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6600e-003	0.1842	0.0806	1.1800e-003	1.4398	1.9600e-003	1.4417	0.1508	1.8700e-003	0.1527		123.9189	123.9189	4.8000e-004	0.0170	128.9853
Worker	1.4386	0.6380	9.9964	0.0217	106.1711	0.0113	106.1824	10.9042	0.0104	10.9146		2,190.6608	2,190.6608	0.0644	0.0615	2,210.5882
Total	**1.4482**	**0.8222**	**10.0770**	**0.0229**	**107.6109**	**0.0133**	**107.6241**	**11.0550**	**0.0123**	**11.0673**		**2,314.5797**	**2,314.5797**	**0.0649**	**0.0784**	**2,339.5735**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0751	0.0348	0.5245	1.0800e-003	55.0324	5.8000e-004	55.0330	5.5072	5.3000e-004	5.5077		109.2904	109.2904	3.4600e-003	3.2200e-003	110.3354
Total	**0.0751**	**0.0348**	**0.5245**	**1.0800e-003**	**55.0324**	**5.8000e-004**	**55.0330**	**5.5072**	**5.3000e-004**	**5.5077**		**109.2904**	**109.2904**	**3.4600e-003**	**3.2200e-003**	**110.3354**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0751	0.0348	0.5245	1.0800e-003	5.1373	5.8000e-004	5.1379	0.5276	5.3000e-004	0.5282		109.2904	109.2904	3.4600e-003	3.2200e-003	110.3354
Total	**0.0751**	**0.0348**	**0.5245**	**1.0800e-003**	**5.1373**	**5.8000e-004**	**5.1379**	**0.5276**	**5.3000e-004**	**0.5282**		**109.2904**	**109.2904**	**3.4600e-003**	**3.2200e-003**	**110.3354**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0696	0.0309	0.4837	1.0500e-003	55.0324	5.5000e-004	55.0330	5.5072	5.0000e-004	5.5077		105.9997	105.9997	3.1200e-003	2.9700e-003	106.9639
Total	**0.0696**	**0.0309**	**0.4837**	**1.0500e-003**	**55.0324**	**5.5000e-004**	**55.0330**	**5.5072**	**5.0000e-004**	**5.5077**		**105.9997**	**105.9997**	**3.1200e-003**	**2.9700e-003**	**106.9639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0696	0.0309	0.4837	1.0500e-003	5.1373	5.5000e-004	5.1379	0.5276	5.0000e-004	0.5281		105.9997	105.9997	3.1200e-003	2.9700e-003	106.9639
Total	**0.0696**	**0.0309**	**0.4837**	**1.0500e-003**	**5.1373**	**5.5000e-004**	**5.1379**	**0.5276**	**5.0000e-004**	**0.5281**		**105.9997**	**105.9997**	**3.1200e-003**	**2.9700e-003**	**106.9639**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0578	0.0677	0.6034	1.2800e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		129.5118	129.5118	5.2100e-003	5.3800e-003	131.2455
Unmitigated	0.0578	0.0677	0.6034	1.2800e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		129.5118	129.5118	5.2100e-003	5.3800e-003	131.2455

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Total	12.20	0.00	0.00	43,050	43,050

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504
Refrigerated Warehouse-No Rail	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
NaturalGas Unmitigated	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	12347.2	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Total		**0.2663**	**2.4210**	**2.0337**	**0.0145**		**0.1840**	**0.1840**		**0.1840**	**0.1840**		**2,905.2168**	**2,905.2168**	**0.0557**	**0.0533**	**2,922.4811**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	12.3472	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Total		**0.2663**	**2.4210**	**2.0337**	**0.0145**		**0.1840**	**0.1840**		**0.1840**	**0.1840**		**2,905.2168**	**2,905.2168**	**0.0557**	**0.0533**	**2,922.4811**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Unmitigated	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.3589					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Total	**6.0925**	**4.8000e-004**	**0.0525**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1127**	**0.1127**	**2.9000e-004**		**0.1200**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.3589					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Total	**6.0925**	**4.8000e-004**	**0.0525**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1127**	**0.1127**	**2.9000e-004**		**0.1200**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	2.00	8	402	0.38	Diesel
Other Construction Equipment	3	8.00	8	172	0.42	Diesel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.1249	0.8361	0.8166	3.3200e-003		0.0301	0.0301		0.0277	0.0277	0.0000	321.6881	321.6881	0.1040		324.2891
Other Construction Equipment	0.9849	9.5274	11.9065	0.0183		0.4916	0.4916		0.4523	0.4523	0.0000	1,775.0771	1,775.0771	0.5741		1,789.4295
Total	**1.1098**	**10.3635**	**12.7231**	**0.0217**		**0.5217**	**0.5217**		**0.4800**	**0.4800**	**0.0000**	**2,096.7652**	**2,096.7652**	**0.6781**		**2,113.7186**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

VEGA 6 SES Solar and Battery Storage Project

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	316.00	Acre	316.00	13,764,960.00	0
Other Non-Asphalt Surfaces	24.50	Acre	24.50	1,067,220.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2024
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.983	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses account for 316 acres of solar field, 2 acres of BESS, 2 acres of substation, and 24.5 acres of transmission line distrubance.

Construction Phase - Construction phasing adjusted to reflect the Project Description. Solar panel installation and paving assumed to occur simultaneously.

Grading -

Trips and VMT - A maximum of 310 worker commute trips during solar panel installation per Traffic Study

On-road Fugitive Dust - 75.6% paved roads for worker commutes [2.6 m dirt roads / 10.2 m trip lenght default - 75.6% paved roads]. 78.2% paved roads for vendors.

Vehicle Trips - Maximum trips per day = 6 per Project Description

Consumer Products - No degresers used during operations

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - Water use accounts for 179,200,000 gallons used during construction, amortized over the life of the Project + 6,517,000 gallons annually anticipated for operations

Solid Waste - No solid waste generation

Operational Off-Road Equipment - Off road equipment for operational maintenance

Construction Off-road Equipment Mitigation - Mitigation measure AQ-1 accounted. PM reduction value for applying soil stabilizers to unpaved roadways per communication with ICAPCD (Monica Soucier email correspondence)

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	6,200.00	197.00
tblConstructionPhase	NumDays	620.00	42.00
tblConstructionPhase	NumDays	440.00	197.00
tblConstructionPhase	NumDays	240.00	23.00
tblConstructionPhase	PhaseEndDate	8/15/2051	5/31/2024
tblConstructionPhase	PhaseEndDate	11/9/2027	8/30/2023
tblConstructionPhase	PhaseEndDate	4/22/2053	5/31/2024
tblConstructionPhase	PhaseEndDate	6/24/2025	7/3/2023
tblConstructionPhase	PhaseStartDate	11/10/2027	8/31/2023
tblConstructionPhase	PhaseStartDate	6/25/2025	7/4/2023
tblConstructionPhase	PhaseStartDate	8/16/2051	8/31/2023
tblConstructionPhase	PhaseStartDate	7/24/2024	6/1/2023
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	2.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.38	0.38
tblOperationalOffRoadEquipment	OperLoadFactor	0.42	0.42
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	189.98	189.983
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	163.79	0.00
tblTripsAndVMT	VendorTripNumber	2,460.00	4.00
tblTripsAndVMT	WorkerTripNumber	6,303.00	310.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	0.07
tblWater	IndoorWaterUseRate	40,293,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	12,490,333.00

2.0 Emissions Summary

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.8375	34.5641	39.0430	0.0709	1,207.6774	1.4253	1,208.9018	120.8576	1.3112	121.9988	0.0000	6,901.3848	6,901.3848	1.9489	0.0887	6,962.7608
2024	3.6074	23.8698	38.3856	0.0703	1,207.6774	1.0956	1,208.7730	120.8576	1.0207	121.8783	0.0000	6,840.3133	6,840.3133	1.3872	0.0829	6,899.7002
Maximum	**3.8375**	**34.5641**	**39.0430**	**0.0709**	**1,207.6774**	**1.4253**	**1,208.9018**	**120.8576**	**1.3112**	**121.9988**	**0.0000**	**6,901.3848**	**6,901.3848**	**1.9489**	**0.0887**	**6,962.7608**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.8375	34.5641	39.0430	0.0709	112.7482	1.4253	113.9726	11.5826	1.3112	12.7238	0.0000	6,901.3848	6,901.3848	1.9489	0.0887	6,962.7608
2024	3.6074	23.8698	38.3856	0.0703	112.7482	1.0956	113.8438	11.5826	1.0207	12.6033	0.0000	6,840.3133	6,840.3133	1.3872	0.0829	6,899.7002
Maximum	**3.8375**	**34.5641**	**39.0430**	**0.0709**	**112.7482**	**1.4253**	**113.9726**	**11.5826**	**1.3112**	**12.7238**	**0.0000**	**6,901.3848**	**6,901.3848**	**1.9489**	**0.0887**	**6,962.7608**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**90.66**	**0.00**	**90.58**	**90.42**	**0.00**	**89.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Energy	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Mobile	0.0407	0.0749	0.4683	1.1200e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		114.0015	114.0015	5.2300e-003	5.5600e-003	115.7880
Offroad	1.1098	10.3635	12.7231	0.0217		0.5217	0.5217		0.4800	0.4800	0.0000	2,096.7652	2,096.7652	0.6781		2,113.7186
Total	**7.5093**	**12.8599**	**15.2775**	**0.0373**	**61.6893**	**0.7067**	**62.3960**	**6.1562**	**0.6650**	**6.8212**	**0.0000**	**5,116.0961**	**5,116.0961**	**0.7393**	**0.0588**	**5,152.1077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Energy	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Mobile	0.0407	0.0749	0.4683	1.1200e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		114.0015	114.0015	5.2300e-003	5.5600e-003	115.7880
Offroad	1.1098	10.3635	12.7231	0.0217		0.5217	0.5217		0.4800	0.4800	0.0000	2,096.7652	2,096.7652	0.6781		2,113.7186
Total	**7.5093**	**12.8599**	**15.2775**	**0.0373**	**61.6893**	**0.7067**	**62.3960**	**6.1562**	**0.6650**	**6.8212**	**0.0000**	**5,116.0961**	**5,116.0961**	**0.7393**	**0.0588**	**5,152.1077**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	7/3/2023	5	23	
2	Grading	Grading	7/4/2023	8/30/2023	5	42	
3	Building Construction	Building Construction	8/31/2023	5/31/2024	5	197	
4	Paving	Paving	8/31/2023	5/31/2024	5	197	

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 34.5

Acres of Grading (Grading Phase): 126

Acres of Paving: 340.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	8	20.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	4.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0677	0.0436	0.4502	1.1000e-003	66.0389	6.9000e-004	66.0396	6.6086	6.4000e-004	6.6093		111.4761	111.4761	4.1900e-003	3.9500e-003	112.7579
Total	**0.0677**	**0.0436**	**0.4502**	**1.1000e-003**	**66.0389**	**6.9000e-004**	**66.0396**	**6.6086**	**6.4000e-004**	**6.6093**		**111.4761**	**111.4761**	**4.1900e-003**	**3.9500e-003**	**112.7579**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**7.6662**	**1.2660**	**8.9323**	**3.9400**	**1.1647**	**5.1047**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0677	0.0436	0.4502	1.1000e-003	6.1648	6.9000e-004	6.1655	0.6332	6.4000e-004	0.6338		111.4761	111.4761	4.1900e-003	3.9500e-003	112.7579
Total	**0.0677**	**0.0436**	**0.4502**	**1.1000e-003**	**6.1648**	**6.9000e-004**	**6.1655**	**0.6332**	**6.4000e-004**	**0.6338**		**111.4761**	**111.4761**	**4.1900e-003**	**3.9500e-003**	**112.7579**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0752	0.0485	0.5002	1.2300e-003	73.3765	7.7000e-004	73.3773	7.3429	7.1000e-004	7.3436		123.8624	123.8624	4.6500e-003	4.3900e-003	125.2866
Total	**0.0752**	**0.0485**	**0.5002**	**1.2300e-003**	**73.3765**	**7.7000e-004**	**73.3773**	**7.3429**	**7.1000e-004**	**7.3436**		**123.8624**	**123.8624**	**4.6500e-003**	**4.3900e-003**	**125.2866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5894**	**1.4245**	**5.0139**	**1.4250**	**1.3105**	**2.7355**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0752	0.0485	0.5002	1.2300e-003	6.8498	7.7000e-004	6.8505	0.7035	7.1000e-004	0.7042		123.8624	123.8624	4.6500e-003	4.3900e-003	125.2866
Total	**0.0752**	**0.0485**	**0.5002**	**1.2300e-003**	**6.8498**	**7.7000e-004**	**6.8505**	**0.7035**	**7.1000e-004**	**0.7042**		**123.8624**	**123.8624**	**4.6500e-003**	**4.3900e-003**	**125.2866**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5700e-003	0.2041	0.0864	1.2000e-003	15.3086	1.9700e-003	15.3106	1.5349	1.8900e-003	1.5368		125.8275	125.8275	4.8000e-004	0.0174	131.0141
Worker	1.1660	0.7514	7.7532	0.0190	1,137.3364	0.0119	1,137.3483	113.8155	0.0110	113.8264		1,919.8665	1,919.8665	0.0721	0.0680	1,941.9422
Total	**1.1756**	**0.9555**	**7.8396**	**0.0202**	**1,152.6450**	**0.0139**	**1,152.6589**	**115.3504**	**0.0129**	**115.3632**		**2,045.6940**	**2,045.6940**	**0.0726**	**0.0854**	**2,072.9563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5700e-003	0.2041	0.0864	1.2000e-003	1.4398	1.9700e-003	1.4417	0.1508	1.8900e-003	0.1527		125.8275	125.8275	4.8000e-004	0.0174	131.0141
Worker	1.1660	0.7514	7.7532	0.0190	106.1711	0.0119	106.1830	10.9042	0.0110	10.9152		1,919.8665	1,919.8665	0.0721	0.0680	1,941.9422
Total	**1.1756**	**0.9555**	**7.8396**	**0.0202**	**107.6109**	**0.0139**	**107.6248**	**11.0550**	**0.0129**	**11.0678**		**2,045.6940**	**2,045.6940**	**0.0726**	**0.0854**	**2,072.9563**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.1800e-003	0.2034	0.0831	1.1800e-003	15.3086	1.9700e-003	15.3106	1.5349	1.8800e-003	1.5368		124.1366	124.1366	4.7000e-004	0.0170	129.2258
Worker	1.0859	0.6658	7.1634	0.0184	1,137.3364	0.0113	1,137.3477	113.8155	0.0104	113.8259		1,862.7954	1,862.7954	0.0653	0.0628	1,883.1502
Total	**1.0951**	**0.8692**	**7.2464**	**0.0196**	**1,152.6450**	**0.0133**	**1,152.6582**	**115.3504**	**0.0123**	**115.3626**		**1,986.9320**	**1,986.9320**	**0.0658**	**0.0799**	**2,012.3760**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.1800e-003	0.2034	0.0831	1.1800e-003	1.4398	1.9700e-003	1.4417	0.1508	1.8800e-003	0.1527		124.1366	124.1366	4.7000e-004	0.0170	129.2258
Worker	1.0859	0.6658	7.1634	0.0184	106.1711	0.0113	106.1824	10.9042	0.0104	10.9146		1,862.7954	1,862.7954	0.0653	0.0628	1,883.1502
Total	**1.0951**	**0.8692**	**7.2464**	**0.0196**	**107.6109**	**0.0133**	**107.6241**	**11.0550**	**0.0123**	**11.0673**		**1,986.9320**	**1,986.9320**	**0.0658**	**0.0799**	**2,012.3760**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0564	0.0364	0.3752	9.2000e-004	55.0324	5.8000e-004	55.0330	5.5072	5.3000e-004	5.5077		92.8968	92.8968	3.4900e-003	3.2900e-003	93.9649
Total	**0.0564**	**0.0364**	**0.3752**	**9.2000e-004**	**55.0324**	**5.8000e-004**	**55.0330**	**5.5072**	**5.3000e-004**	**5.5077**		**92.8968**	**92.8968**	**3.4900e-003**	**3.2900e-003**	**93.9649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0564	0.0364	0.3752	9.2000e-004	5.1373	5.8000e-004	5.1379	0.5276	5.3000e-004	0.5282		92.8968	92.8968	3.4900e-003	3.2900e-003	93.9649
Total	**0.0564**	**0.0364**	**0.3752**	**9.2000e-004**	**5.1373**	**5.8000e-004**	**5.1379**	**0.5276**	**5.3000e-004**	**0.5282**		**92.8968**	**92.8968**	**3.4900e-003**	**3.2900e-003**	**93.9649**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0526	0.0322	0.3466	8.9000e-004	55.0324	5.5000e-004	55.0330	5.5072	5.0000e-004	5.5077		90.1353	90.1353	3.1600e-003	3.0400e-003	91.1202
Total	**0.0526**	**0.0322**	**0.3466**	**8.9000e-004**	**55.0324**	**5.5000e-004**	**55.0330**	**5.5072**	**5.0000e-004**	**5.5077**		**90.1353**	**90.1353**	**3.1600e-003**	**3.0400e-003**	**91.1202**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0526	0.0322	0.3466	8.9000e-004	5.1373	5.5000e-004	5.1379	0.5276	5.0000e-004	0.5281		90.1353	90.1353	3.1600e-003	3.0400e-003	91.1202
Total	**0.0526**	**0.0322**	**0.3466**	**8.9000e-004**	**5.1373**	**5.5000e-004**	**5.1379**	**0.5276**	**5.0000e-004**	**0.5281**		**90.1353**	**90.1353**	**3.1600e-003**	**3.0400e-003**	**91.1202**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0407	0.0749	0.4683	1.1200e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		114.0015	114.0015	5.2300e-003	5.5600e-003	115.7880
Unmitigated	0.0407	0.0749	0.4683	1.1200e-003	61.6893	8.6000e-004	61.6901	6.1562	8.1000e-004	6.1570		114.0015	114.0015	5.2300e-003	5.5600e-003	115.7880

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Total	12.20	0.00	0.00	43,050	43,050

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504
Refrigerated Warehouse-No Rail	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
NaturalGas Unmitigated	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	12347.2	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Total		**0.2663**	**2.4210**	**2.0337**	**0.0145**		**0.1840**	**0.1840**		**0.1840**	**0.1840**		**2,905.2168**	**2,905.2168**	**0.0557**	**0.0533**	**2,922.4811**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	12.3472	0.2663	2.4210	2.0337	0.0145		0.1840	0.1840		0.1840	0.1840		2,905.2168	2,905.2168	0.0557	0.0533	2,922.4811
Total		**0.2663**	**2.4210**	**2.0337**	**0.0145**		**0.1840**	**0.1840**		**0.1840**	**0.1840**		**2,905.2168**	**2,905.2168**	**0.0557**	**0.0533**	**2,922.4811**

6.0 Area Detail

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Unmitigated	6.0925	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.3589					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Total	**6.0925**	**4.8000e-004**	**0.0525**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1127**	**0.1127**	**2.9000e-004**		**0.1200**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.3589					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.8000e-004	0.0525	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1127	0.1127	2.9000e-004		0.1200
Total	**6.0925**	**4.8000e-004**	**0.0525**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1127**	**0.1127**	**2.9000e-004**		**0.1200**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	2.00	8	402	0.38	Diesel
Other Construction Equipment	3	8.00	8	172	0.42	Diesel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.1249	0.8361	0.8166	3.3200e-003		0.0301	0.0301		0.0277	0.0277	0.0000	321.6881	321.6881	0.1040		324.2891
Other Construction Equipment	0.9849	9.5274	11.9065	0.0183		0.4916	0.4916		0.4523	0.4523	0.0000	1,775.0771	1,775.0771	0.5741		1,789.4295
Total	**1.1098**	**10.3635**	**12.7231**	**0.0217**		**0.5217**	**0.5217**		**0.4800**	**0.4800**	**0.0000**	**2,096.7652**	**2,096.7652**	**0.6781**		**2,113.7186**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

Renewable Energy Emissions Displacement

CRITERIA AIR POLLUTANT DISPLACEMENT

Table A-1. Renewable Energy Generator Specifications

Megawatt Project	**80**
Operational Time[1]	**25**
Annual Hours of Generation[1]	**2,190**
Annual Kilowatt Hours	**175,200,000**
Heat Rate[2]	**9,313**
Btu Displaced[3]	**1,631,637,600,000**

Notes:

[1] The Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually).

[2] Heat Rate indicate the enery 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 highter 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 plant types are as follows:

Table A-2. Heat Rates

Steam Boiler Fueled by Coal:	10,800
Steam Boiler Fueled by Natural Gas:	10,200
Gas Turbine:	10,100
Combined Natural Gas Boiler & Turbine:	7,640

Omitting steam boilers fueled by cola since so little of California's energy is derived from coal, the average heat rate = 9313

[3] The annual kilowatt hours multipled by the average heat rate of existing fossil fuel based energy generators equals the amount of Btu displaced from fossil fuel production, as shown in Table A-3.

Table A-3. Btu Displacement

Annual Kilowatt Hours	175,200,000
Average Heat Rate	9,313
Btu Displaced from Fossil Fuel Based Energy Production	1,631,637,600,000

Energy consumption in California is predominately derived from natural gas, followed by renewables, nuclear, unspecified nonrenewable sources, and coal, as shown in Table A-4.

Table A-4. California Energy Mix (percentages)

Natural Gas	37.06
Coal	2.74
Renewables (not including hydroelctric generators)	33.09
Nuclear	9.33
Unspecified nonrenewable sources	5.36

Source: California Energy Commission. 2021. "2020 Total System Electric Generation." https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation

For the purposes of this anlaysis, the percentage of California energy derived from natural gas is added to unspecificed nonrewable sources. Table A-5 identifies the displaced Btu attributable to displaced natural gas and displaced coal.

Table A-5. Btu Displacement by Fossil Fuel Type - Annually

Natural Gas & Unspecified Nonrewable Sources	692,140,669,920
Coal	44,706,870,240

The heat content of coal is assumed at 24 million Btu per ton of coal burned. Table A-6 shows the tons of displaced burned coal based on this heat content.

Table A-6. Tons of Displaced Burned Coal - Annually

Displaced Coal Burn	1,863

Table A-7. Emissions Displacement - Tons per Year[4]

Natural Gas	
Nitrogen Oxide	1.71
Carbon Monoxide	0.52
Coarse Particulate Matter	1.63
Fine Particulate Matter	0.66
Sulfur Dioxide	1.18

Coal	
Nitrogen Oxide	11.18
Carbon Monoxide	0.47
Coarse Particulate Matter	0.08
Fine Particulate Matter	0.06
Sulfur Dioxide	0.53

Table A-8. Total Combined Emissions Displacement - Tons per Year

Natural Gas & Coal	
Nitrogen Oxide	12.89
Carbon Monoxide	0.98
Coarse Particulate Matter	1.70
Fine Particulate Matter	0.71
Sulfur Dioxide	1.71

Table A-9. Total Combined Emissions Displacement over the Life of the Project (30 years) - Tons per Year

Natural Gas & Coal	
Nitrogen Oxide	**386.69**
Carbon Monoxide	**29.54**
Coarse Particulate Matter	**51.14**
Fine Particulate Matter	**21.40**
Sulfur Dioxide	**51.23**

[4]Source: Displaced emissions calculated by ECORP Consulting using U.S. EPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015.

GREENHOUSE GAS EMISSIONS DISPLACEMENT

Table B-1. Renewable Energy Generator Specifications

Megawatt Project	**80**
Operational Time[1]	**25**
Annual Hours of Generation[1]	**2,190**
Annual Kilowatt Hours	**175,200,000**
Heat Rate[2]	**9,313**
Btu Displaced[3]	**1,631,637,600,000**

Notes:

[1] The Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually).

[2] Heat Rate indicate the enery 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 highter 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 plant types are as follows:

Table B-2. Heat Rates

Steam Boiler Fueled by Coal:	10,800
Steam Boiler Fueled by Natural Gas:	10,200
Gas Turbine:	10,100
Combined Natural Gas Boiler & Turbine:	7,640

Omitting steam boilers fueled by cola since so little of California's energy is derived from coal, the average heat rate = 9313

[3] The annual kilowatt hours multipled by the average heat rate of existing fossil fuel based energy generators equals the amount of Btu displaced from fossil fuel production, as shown in Table A-3.

Table B-3. Btu Displacement

Annual Kilowatt Hours	175,200,000
Average Heat Rate	9,313
Btu Displaced from Fossil Fuel Based Energy Production	1,631,637,600,000

Energy consumption in California is predominately derived from natural gas, followed by renewables, nuclear, unspecified nonrenewable sources, and coal, as shown in Table A-4.

Table B-4. California Energy Mix (percentages)

Natural Gas	37.06
Coal	2.74
Renewables (not including hydroelctric generators)	33.09
Nuclear	9.33
Unspecified nonrenewable sources	5.36

Source: California Energy Commission. 2021. "2020 Total System Electric Generation." https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation

For the purposes of this anlaysis, the percentage of California energy derived from natural gas is added to unspecificed nonrewable sources. Table A-5 identifies the displaced Btu attributable to displaced natural gas and displaced coal.

Table B-5. Btu Displacement by Fossil Fuel Type - Annually

Natural Gas & Unspecified Nonrewable Sources	692,140,669,920
Coal	44,706,870,240

The heat content of coal is assumed at 24 million Btu per ton of coal burned. Table A-6 shows the tons of displaced burned coal based on this heat content.

Table B-6. Tons of Displaced Burned Coal - Annually

Displaced Coal Burn	1,863

Table B-7. Emissions Displacement - Metric Tons per Year[4]

Natural Gas	
Carbon Dioxide	38,068
Methane	0.000
Nitrous Oxide	0.000
Carbon Dioxide Equivalents	38,068

Coal	
Carbon Dioxide	4500
Methane	0.030
Nitrous Oxide	0.022
Carbon Dioxide Equivalents	4508

Table B-8. Total Combined Emissions Displacement - Metric Tons per Year

Natural Gas & Coal	
Carbon Dioxide	42,568
Methane	0.030
Nitrous Oxide	0.022
Carbon Dioxide Equivalents	42,576

Table B-9. Total Combined Emissions Displacement over the Life of the Project (30 years) - Metric Tons per Year

Natural Gas & Coal	
Carbon Dioxide	1,277,047
Methane	0.894
Nitrous Oxide	0.671
Carbon Dioxide Equivalents	**1,277,277**

[4]Source: Displaced emissions calculated by ECORP Consulting using U.S. EPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015.

ATTACHMENT C

CalEEMod Output Files Greenhouse Gas Emissions

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

VEGA 6 SES Solar and Battery Storage Project

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	316.00	Acre	316.00	13,764,960.00	0
Other Non-Asphalt Surfaces	24.50	Acre	24.50	1,067,220.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0
Refrigerated Warehouse-No Rail	87.12	1000sqft	2.00	87,120.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2024
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	189.983	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses account for 316 acres of solar field, 2 acres of BESS, 2 acres of substation, and 24.5 acres of transmission line distrubance.

Construction Phase - Construction phasing adjusted to reflect the Project Description. Solar panel installation and paving assumed to occur simultaneously.

Grading -

Trips and VMT - A maximum of 310 worker commute trips during solar panel installation per Traffic Study

On-road Fugitive Dust - 75.6% paved roads for worker commutes [2.6 m dirt roads / 10.2 m trip lenght default - 75.6% paved roads]. 78.2% paved roads for vendors.

Vehicle Trips - Maximum trips per day = 6 per Project Description

Consumer Products - No degresers used during operations

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - Water use accounts for 179,200,000 gallons used during construction, amortized over the life of the Project + 6,517,000 gallons annually anticipated for operations

Solid Waste - No solid waste generation

Operational Off-Road Equipment - Off road equipment for operational maintenance

Construction Off-road Equipment Mitigation - Mitigation measure AQ-1 accounted. PM reduction value for applying soil stabilizers to unpaved roadways per communication with ICAPCD (Monica Soucier email correspondence)

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	6,200.00	197.00
tblConstructionPhase	NumDays	620.00	42.00
tblConstructionPhase	NumDays	440.00	197.00
tblConstructionPhase	NumDays	240.00	23.00
tblConstructionPhase	PhaseEndDate	8/15/2051	5/31/2024
tblConstructionPhase	PhaseEndDate	11/9/2027	8/30/2023
tblConstructionPhase	PhaseEndDate	4/22/2053	5/31/2024
tblConstructionPhase	PhaseEndDate	6/24/2025	7/3/2023
tblConstructionPhase	PhaseStartDate	11/10/2027	8/31/2023
tblConstructionPhase	PhaseStartDate	6/25/2025	7/4/2023
tblConstructionPhase	PhaseStartDate	8/16/2051	8/31/2023
tblConstructionPhase	PhaseStartDate	7/24/2024	6/1/2023
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	VendorPercentPave	50.00	78.20
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60
tblOnRoadDust	WorkerPercentPave	50.00	75.60

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	2.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.38	0.38
tblOperationalOffRoadEquipment	OperLoadFactor	0.42	0.42
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	189.98	189.983
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	163.79	0.00
tblTripsAndVMT	VendorTripNumber	2,460.00	4.00
tblTripsAndVMT	WorkerTripNumber	6,303.00	310.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	0.07
tblWater	IndoorWaterUseRate	40,293,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	12,490,333.00

2.0 Emissions Summary

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2739	2.1542	2.5575	4.9300e-003	53.4533	0.0978	53.5510	5.5007	0.0906	5.5913	0.0000	434.8539	434.8539	0.1047	3.5800e-003	438.5384
2024	0.2031	1.3118	2.1605	3.9400e-003	64.2414	0.0603	64.3017	6.4294	0.0561	6.4856	0.0000	348.3193	348.3193	0.0691	4.0900e-003	351.2656
Maximum	**0.2739**	**2.1542**	**2.5575**	**4.9300e-003**	**64.2414**	**0.0978**	**64.3017**	**6.4294**	**0.0906**	**6.4856**	**0.0000**	**434.8539**	**434.8539**	**0.1047**	**4.0900e-003**	**438.5384**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2739	2.1542	2.5575	4.9300e-003	5.1169	0.0978	5.2147	0.5845	0.0906	0.6751	0.0000	434.8535	434.8535	0.1047	3.5800e-003	438.5380
2024	0.2031	1.3118	2.1605	3.9400e-003	6.0002	0.0603	6.0604	0.6169	0.0561	0.6730	0.0000	348.3190	348.3190	0.0691	4.0900e-003	351.2653
Maximum	**0.2739**	**2.1542**	**2.5575**	**4.9300e-003**	**6.0002**	**0.0978**	**6.0604**	**0.6169**	**0.0906**	**0.6751**	**0.0000**	**434.8535**	**434.8535**	**0.1047**	**4.0900e-003**	**438.5380**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**90.55**	**0.00**	**90.43**	**89.93**	**0.00**	**88.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**4-11-2023**	**7-10-2023**	0.4522	0.4522
3	**7-11-2023**	**10-10-2023**	1.1263	1.1263
4	**10-11-2023**	**1-10-2024**	0.9593	0.9593
5	**1-11-2024**	**4-10-2024**	0.8942	0.8942
6	**4-11-2024**	**7-10-2024**	0.5063	0.5063
		Highest	1.1263	1.1263

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1114	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003
Energy	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	1,079.1930	1,079.1930	0.1131	0.0214	1,088.4022
Mobile	6.0300e-003	9.5000e-003	0.0655	1.5000e-004	8.0195	1.1000e-004	8.0197	0.8003	1.0000e-004	0.8004	0.0000	14.1759	14.1759	6.0000e-004	6.5000e-004	14.3839
Offroad	4.4400e-003	0.0415	0.0509	9.0000e-005		2.0900e-003	2.0900e-003		1.9200e-003	1.9200e-003	0.0000	7.6086	7.6086	2.4600e-003	0.0000	7.6701
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	11.9583	11.9583	2.0800e-003	2.5000e-004	12.0852
Total	**1.1705**	**0.4928**	**0.4923**	**2.8900e-003**	**8.0195**	**0.0358**	**8.0554**	**0.8003**	**0.0356**	**0.8359**	**0.0000**	**1,112.9449**	**1,112.9449**	**0.1183**	**0.0223**	**1,122.5512**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1114	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003
Energy	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	1,079.1930	1,079.1930	0.1131	0.0214	1,088.4022
Mobile	6.0300e-003	9.5000e-003	0.0655	1.5000e-004	8.0195	1.1000e-004	8.0197	0.8003	1.0000e-004	0.8004	0.0000	14.1759	14.1759	6.0000e-004	6.5000e-004	14.3839
Offroad	4.4400e-003	0.0415	0.0509	9.0000e-005		2.0900e-003	2.0900e-003		1.9200e-003	1.9200e-003	0.0000	7.6086	7.6086	2.4600e-003	0.0000	7.6701
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	11.9583	11.9583	2.0800e-003	2.5000e-004	12.0852
Total	**1.1705**	**0.4928**	**0.4923**	**2.8900e-003**	**8.0195**	**0.0358**	**8.0554**	**0.8003**	**0.0356**	**0.8359**	**0.0000**	**1,112.9449**	**1,112.9449**	**0.1183**	**0.0223**	**1,122.5512**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	7/3/2023	5	23	
2	Grading	Grading	7/4/2023	8/30/2023	5	42	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3	Building Construction	Building Construction	8/31/2023	5/31/2024	5	197	
4	Paving	Paving	8/31/2023	5/31/2024	5	197	

Acres of Grading (Site Preparation Phase): 34.5

Acres of Grading (Grading Phase): 126

Acres of Paving: 340.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	4.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2261	0.0000	0.2261	0.1162	0.0000	0.1162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3165	0.2098	4.4000e-004		0.0146	0.0146		0.0134	0.0134	0.0000	38.4683	38.4683	0.0124	0.0000	38.7793
Total	**0.0306**	**0.3165**	**0.2098**	**4.4000e-004**	**0.2261**	**0.0146**	**0.2406**	**0.1162**	**0.0134**	**0.1296**	**0.0000**	**38.4683**	**38.4683**	**0.0124**	**0.0000**	**38.7793**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	4.9000e-004	5.8000e-003	1.0000e-005	0.7345	1.0000e-005	0.7345	0.0735	1.0000e-005	0.0735	0.0000	1.2471	1.2471	4.0000e-005	4.0000e-005	1.2603
Total	**8.4000e-004**	**4.9000e-004**	**5.8000e-003**	**1.0000e-005**	**0.7345**	**1.0000e-005**	**0.7345**	**0.0735**	**1.0000e-005**	**0.0735**	**0.0000**	**1.2471**	**1.2471**	**4.0000e-005**	**4.0000e-005**	**1.2603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0882	0.0000	0.0882	0.0453	0.0000	0.0453	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3165	0.2098	4.4000e-004		0.0146	0.0146		0.0134	0.0134	0.0000	38.4683	38.4683	0.0124	0.0000	38.7793
Total	**0.0306**	**0.3165**	**0.2098**	**4.4000e-004**	**0.0882**	**0.0146**	**0.1027**	**0.0453**	**0.0134**	**0.0587**	**0.0000**	**38.4683**	**38.4683**	**0.0124**	**0.0000**	**38.7793**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	4.9000e-004	5.8000e-003	1.0000e-005	0.0686	1.0000e-005	0.0686	7.0500e-003	1.0000e-005	7.0600e-003	0.0000	1.2471	1.2471	4.0000e-005	4.0000e-005	1.2603
Total	**8.4000e-004**	**4.9000e-004**	**5.8000e-003**	**1.0000e-005**	**0.0686**	**1.0000e-005**	**0.0686**	**7.0500e-003**	**1.0000e-005**	**7.0600e-003**	**0.0000**	**1.2471**	**1.2471**	**4.0000e-005**	**4.0000e-005**	**1.2603**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1933	0.0000	0.1933	0.0767	0.0000	0.0767	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0698	0.7248	0.5891	1.3000e-003		0.0299	0.0299		0.0275	0.0275	0.0000	114.5239	114.5239	0.0370	0.0000	115.4499
Total	**0.0698**	**0.7248**	**0.5891**	**1.3000e-003**	**0.1933**	**0.0299**	**0.2232**	**0.0767**	**0.0275**	**0.1043**	**0.0000**	**114.5239**	**114.5239**	**0.0370**	**0.0000**	**115.4499**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-003	1.0000e-003	0.0118	3.0000e-005	1.4903	2.0000e-005	1.4903	0.1492	1.0000e-005	0.1492	0.0000	2.5303	2.5303	9.0000e-005	8.0000e-005	2.5570
Total	**1.7000e-003**	**1.0000e-003**	**0.0118**	**3.0000e-005**	**1.4903**	**2.0000e-005**	**1.4903**	**0.1492**	**1.0000e-005**	**0.1492**	**0.0000**	**2.5303**	**2.5303**	**9.0000e-005**	**8.0000e-005**	**2.5570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0754	0.0000	0.0754	0.0299	0.0000	0.0299	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0698	0.7248	0.5891	1.3000e-003		0.0299	0.0299		0.0275	0.0275	0.0000	114.5238	114.5238	0.0370	0.0000	115.4498
Total	**0.0698**	**0.7248**	**0.5891**	**1.3000e-003**	**0.0754**	**0.0299**	**0.1053**	**0.0299**	**0.0275**	**0.0574**	**0.0000**	**114.5238**	**114.5238**	**0.0370**	**0.0000**	**115.4498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-003	1.0000e-003	0.0118	3.0000e-005	0.1392	2.0000e-005	0.1392	0.0143	1.0000e-005	0.0143	0.0000	2.5303	2.5303	9.0000e-005	8.0000e-005	2.5570
Total	**1.7000e-003**	**1.0000e-003**	**0.0118**	**3.0000e-005**	**0.1392**	**2.0000e-005**	**0.1392**	**0.0143**	**1.0000e-005**	**0.0143**	**0.0000**	**2.5303**	**2.5303**	**9.0000e-005**	**8.0000e-005**	**2.5570**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0684	0.6257	0.7066	1.1700e-003		0.0304	0.0304		0.0286	0.0286	0.0000	100.8351	100.8351	0.0240	0.0000	101.4347
Total	**0.0684**	**0.6257**	**0.7066**	**1.1700e-003**		**0.0304**	**0.0304**		**0.0286**	**0.0286**	**0.0000**	**100.8351**	**100.8351**	**0.0240**	**0.0000**	**101.4347**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-004	8.7000e-003	3.7000e-003	5.0000e-005	0.6441	9.0000e-005	0.6442	0.0646	8.0000e-005	0.0647	0.0000	4.9605	4.9605	2.0000e-005	6.8000e-004	5.1648
Worker	0.0546	0.0320	0.3780	8.9000e-004	47.8497	5.2000e-004	47.8503	4.7888	4.8000e-004	4.7893	0.0000	81.2408	81.2408	2.7300e-003	2.6500e-003	82.0986
Total	**0.0550**	**0.0407**	**0.3817**	**9.4000e-004**	**48.4938**	**6.1000e-004**	**48.4944**	**4.8534**	**5.6000e-004**	**4.8539**	**0.0000**	**86.2013**	**86.2013**	**2.7500e-003**	**3.3300e-003**	**87.2634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0684	0.6257	0.7066	1.1700e-003		0.0304	0.0304		0.0286	0.0286	0.0000	100.8349	100.8349	0.0240	0.0000	101.4346
Total	**0.0684**	**0.6257**	**0.7066**	**1.1700e-003**		**0.0304**	**0.0304**		**0.0286**	**0.0286**	**0.0000**	**100.8349**	**100.8349**	**0.0240**	**0.0000**	**101.4346**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-004	8.7000e-003	3.7000e-003	5.0000e-005	0.0606	9.0000e-005	0.0607	6.3600e-003	8.0000e-005	6.4400e-003	0.0000	4.9605	4.9605	2.0000e-005	6.8000e-004	5.1648
Worker	0.0546	0.0320	0.3780	8.9000e-004	4.4688	5.2000e-004	4.4693	0.4593	4.8000e-004	0.4598	0.0000	81.2408	81.2408	2.7300e-003	2.6500e-003	82.0986
Total	**0.0550**	**0.0407**	**0.3817**	**9.4000e-004**	**4.5294**	**6.1000e-004**	**4.5300**	**0.4657**	**5.6000e-004**	**0.4663**	**0.0000**	**86.2013**	**86.2013**	**2.7500e-003**	**3.3300e-003**	**87.2634**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5170	127.5170	0.0302	0.0000	128.2709
Total	**0.0809**	**0.7394**	**0.8892**	**1.4800e-003**		**0.0337**	**0.0337**		**0.0317**	**0.0317**	**0.0000**	**127.5170**	**127.5170**	**0.0302**	**0.0000**	**128.2709**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-004	0.0110	4.4900e-003	6.0000e-005	0.8144	1.1000e-004	0.8145	0.0817	1.0000e-004	0.0818	0.0000	6.1875	6.1875	2.0000e-005	8.5000e-004	6.4410
Worker	0.0642	0.0359	0.4411	1.0900e-003	60.4997	6.2000e-004	60.5003	6.0548	5.7000e-004	6.0554	0.0000	99.6472	99.6472	3.1200e-003	3.0900e-003	100.6472
Total	**0.0647**	**0.0469**	**0.4456**	**1.1500e-003**	**61.3140**	**7.3000e-004**	**61.3147**	**6.1365**	**6.7000e-004**	**6.1371**	**0.0000**	**105.8347**	**105.8347**	**3.1400e-003**	**3.9400e-003**	**107.0882**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0809	0.7394	0.8892	1.4800e-003		0.0337	0.0337		0.0317	0.0317	0.0000	127.5169	127.5169	0.0302	0.0000	128.2707
Total	**0.0809**	**0.7394**	**0.8892**	**1.4800e-003**		**0.0337**	**0.0337**		**0.0317**	**0.0317**	**0.0000**	**127.5169**	**127.5169**	**0.0302**	**0.0000**	**128.2707**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-004	0.0110	4.4900e-003	6.0000e-005	0.0766	1.1000e-004	0.0768	8.0400e-003	1.0000e-004	8.1400e-003	0.0000	6.1875	6.1875	2.0000e-005	8.5000e-004	6.4410
Worker	0.0642	0.0359	0.4411	1.0900e-003	5.6501	6.2000e-004	5.6508	0.5808	5.7000e-004	0.5813	0.0000	99.6472	99.6472	3.1200e-003	3.0900e-003	100.6472
Total	**0.0647**	**0.0469**	**0.4456**	**1.1500e-003**	**5.7268**	**7.3000e-004**	**5.7275**	**0.5888**	**6.7000e-004**	**0.5895**	**0.0000**	**105.8347**	**105.8347**	**3.1400e-003**	**3.9400e-003**	**107.0882**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0449	0.4433	0.6344	9.9000e-004		0.0222	0.0222		0.0204	0.0204	0.0000	87.1169	87.1169	0.0282	0.0000	87.8213
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0449**	**0.4433**	**0.6344**	**9.9000e-004**		**0.0222**	**0.0222**		**0.0204**	**0.0204**	**0.0000**	**87.1169**	**87.1169**	**0.0282**	**0.0000**	**87.8213**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6400e-003	1.5500e-003	0.0183	4.0000e-005	2.3153	3.0000e-005	2.3153	0.2317	2.0000e-005	0.2317	0.0000	3.9310	3.9310	1.3000e-004	1.3000e-004	3.9725
Total	**2.6400e-003**	**1.5500e-003**	**0.0183**	**4.0000e-005**	**2.3153**	**3.0000e-005**	**2.3153**	**0.2317**	**2.0000e-005**	**0.2317**	**0.0000**	**3.9310**	**3.9310**	**1.3000e-004**	**1.3000e-004**	**3.9725**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0449	0.4433	0.6344	9.9000e-004		0.0222	0.0222		0.0204	0.0204	0.0000	87.1168	87.1168	0.0282	0.0000	87.8212
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0449**	**0.4433**	**0.6344**	**9.9000e-004**		**0.0222**	**0.0222**		**0.0204**	**0.0204**	**0.0000**	**87.1168**	**87.1168**	**0.0282**	**0.0000**	**87.8212**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6400e-003	1.5500e-003	0.0183	4.0000e-005	0.2162	3.0000e-005	0.2163	0.0222	2.0000e-005	0.0223	0.0000	3.9310	3.9310	1.3000e-004	1.3000e-004	3.9725
Total	**2.6400e-003**	**1.5500e-003**	**0.0183**	**4.0000e-005**	**0.2162**	**3.0000e-005**	**0.2163**	**0.0222**	**2.0000e-005**	**0.0223**	**0.0000**	**3.9310**	**3.9310**	**1.3000e-004**	**1.3000e-004**	**3.9725**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5239	0.8044	1.2500e-003		0.0258	0.0258		0.0237	0.0237	0.0000	110.1459	110.1459	0.0356	0.0000	111.0365
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0544**	**0.5239**	**0.8044**	**1.2500e-003**		**0.0258**	**0.0258**		**0.0237**	**0.0237**	**0.0000**	**110.1459**	**110.1459**	**0.0356**	**0.0000**	**111.0365**

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-003	1.7400e-003	0.0213	5.0000e-005	2.9274	3.0000e-005	2.9274	0.2930	3.0000e-005	0.2930	0.0000	4.8216	4.8216	1.5000e-004	1.5000e-004	4.8700
Total	**3.1000e-003**	**1.7400e-003**	**0.0213**	**5.0000e-005**	**2.9274**	**3.0000e-005**	**2.9274**	**0.2930**	**3.0000e-005**	**0.2930**	**0.0000**	**4.8216**	**4.8216**	**1.5000e-004**	**1.5000e-004**	**4.8700**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5239	0.8044	1.2500e-003		0.0258	0.0258		0.0237	0.0237	0.0000	110.1458	110.1458	0.0356	0.0000	111.0364
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0544**	**0.5239**	**0.8044**	**1.2500e-003**		**0.0258**	**0.0258**		**0.0237**	**0.0237**	**0.0000**	**110.1458**	**110.1458**	**0.0356**	**0.0000**	**111.0364**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-003	1.7400e-003	0.0213	5.0000e-005	0.2734	3.0000e-005	0.2734	0.0281	3.0000e-005	0.0281	0.0000	4.8216	4.8216	1.5000e-004	1.5000e-004	4.8700
Total	**3.1000e-003**	**1.7400e-003**	**0.0213**	**5.0000e-005**	**0.2734**	**3.0000e-005**	**0.2734**	**0.0281**	**3.0000e-005**	**0.0281**	**0.0000**	**4.8216**	**4.8216**	**1.5000e-004**	**1.5000e-004**	**4.8700**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.0300e-003	9.5000e-003	0.0655	1.5000e-004	8.0195	1.1000e-004	8.0197	0.8003	1.0000e-004	0.8004	0.0000	14.1759	14.1759	6.0000e-004	6.5000e-004	14.3839
Unmitigated	6.0300e-003	9.5000e-003	0.0655	1.5000e-004	8.0195	1.1000e-004	8.0197	0.8003	1.0000e-004	0.8004	0.0000	14.1759	14.1759	6.0000e-004	6.5000e-004	14.3839

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Refrigerated Warehouse-No Rail	6.10	0.00	0.00	21,525	21,525
Total	12.20	0.00	0.00	43,050	43,050

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3
Refrigerated Warehouse-No	16.40	9.50	11.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504
Refrigerated Warehouse-No Rail	0.526464	0.059349	0.179786	0.147621	0.026929	0.006851	0.008316	0.016412	0.000925	0.000120	0.022958	0.000766	0.003504

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	598.2017	598.2017	0.1039	0.0126	604.5527
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	598.2017	598.2017	0.1039	0.0126	604.5527
NaturalGas Mitigated	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	480.9912	480.9912	9.2200e-003	8.8200e-003	483.8495
NaturalGas Unmitigated	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	480.9912	480.9912	9.2200e-003	8.8200e-003	483.8495

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	4.50672e+006	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	480.9912	480.9912	9.2200e-003	8.8200e-003	483.8495
Total		**0.0486**	**0.4418**	**0.3711**	**2.6500e-003**		**0.0336**	**0.0336**		**0.0336**	**0.0336**	**0.0000**	**480.9912**	**480.9912**	**9.2200e-003**	**8.8200e-003**	**483.8495**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	4.50672e+006	0.0486	0.4418	0.3711	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	480.9912	480.9912	9.2200e-003	8.8200e-003	483.8495
Total		**0.0486**	**0.4418**	**0.3711**	**2.6500e-003**		**0.0336**	**0.0336**		**0.0336**	**0.0336**	**0.0000**	**480.9912**	**480.9912**	**9.2200e-003**	**8.8200e-003**	**483.8495**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	3.47086e+006	598.2017	0.1039	0.0126	604.5527
Total		**598.2017**	**0.1039**	**0.0126**	**604.5527**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	3.47086e+006	598.2017	0.1039	0.0126	604.5527
Total		**598.2017**	**0.1039**	**0.0126**	**604.5527**

6.0 Area Detail

VEGA 6 SES Solar and Battery Storage Project - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1114	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003
Unmitigated	1.1114	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6805					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003
Total	**1.1114**	**4.0000e-005**	**4.7200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.2000e-003**	**9.2000e-003**	**2.0000e-005**	**0.0000**	**9.8000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6805					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.7200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2000e-003	9.2000e-003	2.0000e-005	0.0000	9.8000e-003
Total	**1.1114**	**4.0000e-005**	**4.7200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.2000e-003**	**9.2000e-003**	**2.0000e-005**	**0.0000**	**9.8000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.9583	2.0800e-003	2.5000e-004	12.0852
Unmitigated	11.9583	2.0800e-003	2.5000e-004	12.0852

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 12.4903	11.9583	2.0800e-003	2.5000e-004	12.0852
Total		**11.9583**	**2.0800e-003**	**2.5000e-004**	**12.0852**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 12.4903	11.9583	2.0800e-003	2.5000e-004	12.0852
Total		**11.9583**	**2.0800e-003**	**2.5000e-004**	**12.0852**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	2.00	8	402	0.38	Diesel
Other Construction Equipment	3	8.00	8	172	0.42	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Off-Highway Trucks	5.0000e-004	3.3400e-003	3.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.1000e-004	1.1000e-004	0.0000	1.1673	1.1673	3.8000e-004	0.0000	1.1768
Other Construction Equipment	3.9400e-003	0.0381	0.0476	7.0000e-005		1.9700e-003	1.9700e-003		1.8100e-003	1.8100e-003	0.0000	6.4413	6.4413	2.0800e-003	0.0000	6.4934
Total	**4.4400e-003**	**0.0415**	**0.0509**	**8.0000e-005**		**2.0900e-003**	**2.0900e-003**		**1.9200e-003**	**1.9200e-003**	**0.0000**	**7.6086**	**7.6086**	**2.4600e-003**	**0.0000**	**7.6701**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied