



# Air Quality and Greenhouse Gas Assessment

Bear Valley Solar Energy Project

PREPARED FOR  
EDF Renewables Distribution-Scale  
Power

DATE  
7 November 2024

REFERENCE  
0739207



## DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.

|                                    |   |
|------------------------------------|---|
| DOCUMENT TITLE                     | Air Quality and Greenhouse Gas Assessment                           |
| DOCUMENT SUBTITLE                  | Bear Valley Solar Energy Project                                    |
| PROJECT NUMBER                     | 0739207   |
| DATE                               | 7 November 2024   |
| VERSION (delete field if unneeded) | 01  |
| AUTHOR                             | Crispina O'Connor, Sunveer Bajwa, Carlos Ciudad-Real, Josie Sellers |
| CLIENT NAME                        | EDF Renewables Distribution-Scale Power                             |

## DOCUMENT HISTORY

|           |          |   |                               | ERM APPROVAL TO ISSUE |          |          |
|-----------|----------|---|-------------------------------|-----------------------|----------|----------|
| VERSION   | REVISION | AUTHOR  | REVIEWED BY                   | NAME                  | DATE     | COMMENTS |
| Version 1 | 000      | Crispina O'Connor, Sunveer Bajwa, Carlos Ciudad-Real, Josie Sellers | Crispina O'Connor, Mat Carson | Ian Todd              | 11.7.24  |          |
| Version 1 | 001      | Crispina O'Connor, Sunveer Bajwa, Carlos Ciudad-Real, Josie Sellers | Crispina O'Connor, Mat Carson | Ian Todd              | 11.14.24 |          |
|           |          |   |                               |                       |          |          |



# Air Quality and Greenhouse Gas Assessment

## Bear Valley Solar Energy Project

0739207



---

**Ian Todd**

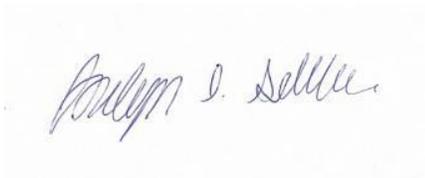
Partner



---

**Crispina O'Connor**

Principal Consultant



---

**Josie Sellers**

Consultant



---

**Carlos Ciudad-Real**

Consultant

Environmental Resources Management, Inc.

1920 Main Street

Suite #300

Irvine, CA 92614

T +1 (949) 623 4700

© Copyright 2025 by The ERM International Group Limited and/or its affiliates ('ERM'). All Rights Reserved.

No part of this work may be reproduced or transmitted in any form or by any means, without prior written permission of ERM.



## CONTENTS

|       |  |    |
|-------|--|----|
| 1.    | INTRODUCTION   | 1  |
| 2.    | AIR QUALITY  | 1  |
| 2.1   | ENVIRONMENTAL SETTING  | 1  |
| 2.1.1 | Geography  | 1  |
| 2.1.2 | Meteorology  | 1  |
| 2.1.3 | Ambient Air Quality  | 2  |
| 2.1.4 | Sensitive Receptors  | 4  |
| 2.2   | REGULATORY SETTING   | 4  |
| 2.2.1 | Federal  | 4  |
| 2.2.2 | State  | 4  |
| 2.2.3 | Regional - <i>South Coast Air Quality Management District (SCAQMD)</i>   | 5  |
| 2.2.4 | Local - <i>County of San Bernardino</i>  | 6  |
| 2.3   | METHODOLOGY AND THRESHOLDS   | 9  |
| 2.3.1 | Thresholds of Significance   | 9  |
| 2.3.2 | Methodology  | 10 |
| 2.4   | IMPACT EVALUATION  | 11 |
|       | <i>A. Conflict with or obstruct implementation of the applicable air quality plan?</i>   | 11 |
|       | <i>B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?</i> | 12 |
|       | <i>C. Expose sensitive receptors to substantial pollutant concentrations?</i>  | 13 |
|       | <i>D. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?</i>   | 13 |
| 3.    | GREENHOUSE GAS EMISSIONS   | 14 |
| 3.1   | ENVIRONMENTAL SETTING  | 14 |
| 3.1.1 | Existing Conditions  | 15 |
| 3.2   | REGULATORY SETTING   | 15 |
| 3.2.1 | Federal  | 15 |
| 3.2.2 | State  | 16 |
| 3.2.3 | Regional - <i>South Coast Air Quality Management District (SCAQMD)</i>   | 18 |
| 3.2.4 | Local - <i>County of San Bernardino</i>  | 18 |
| 3.3   | METHODOLOGY AND SIGNIFICANCE THRESHOLD   | 19 |
| 3.4   | IMPACT EVALUATION  | 20 |
|       | <i>A. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?</i>  | 20 |
|       | <i>B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?</i>   | 22 |

### APPENDIX A CALEEMOD SUMMARY AND DETAILED REPORT

## LIST OF TABLES

|             |  |    |
|-------------|--|----|
| TABLE 2.1-1 | MOST STRINGENT AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN | 3  |
| TABLE 2.4-1 | MAXIMUM DAILY CONSTRUCTION EMISSIONS   | 12 |
| TABLE 3.4-1 | BEAR VALLEY ESTIMATED GREENHOUSE GAS EMISSIONS   | 21 |

## LIST OF FIGURES

|              |   |    |
|--------------|---|----|
| FIGURE 2.3-1 | SCAQMD REGIONAL SIGNIFICANCE EMISSIONS THRESHOLDS | 10 |
|--------------|---|----|

## ACRONYMS AND ABBREVIATIONS

| Acronym               | Description  |
|-----------------------|--|
| AAQS                  | ambient air quality standard   |
| AB                    | Assembly Bill  |
| AQMP                  | Air Quality Management Plan  |
| CAA                   | Clean Air Act  |
| CAAQS                 | California Ambient Air Quality Standard  |
| CalEEMod              | California Emissions Estimator Model   |
| Cap-and-Trade Program | California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation |
| CARB                  | California Air Resources Board   |
| CEQA                  | California Environmental Quality Act   |
| CO                    | Carbon monoxide  |
| CO <sub>2</sub>       | Carbon dioxide   |
| CO <sub>2e</sub>      | Carbon dioxide equivalent  |
| DPM                   | Diesel particulate matter  |
| ERM                   | Environmental Resources Management, Inc.   |
| HAP                   | Hazardous air pollutant  |
| LST                   | Localized Significance Threshold   |
| MT                    | Metric ton   |
| MTCO <sub>2e</sub>    | Metric tons of carbon dioxide equivalent   |
| MW                    | Megawatt   |
| NAAQS                 | National Ambient Air Quality Standard  |
| NO <sub>x</sub>       | Nitrogen oxides  |

| <b>Acronym</b>    | <b>Description</b>  |
|-------------------|---|
| NR                | Natural Resource  |
| O&M               | Operation and maintenance   |
| PM <sub>10</sub>  | particulate matter with an aerodynamic diameter of 10 microns and less  |
| PM <sub>2.5</sub> | particulate matter with an aerodynamic diameter of 2.5 microns and less |
| Project           | Bear Valley Solar Energy Project  |
| RE                | Renewable Energy  |
| RGHGRP            | Regional Greenhouse Gas Reduction Plan                                  |
| RPS               | Renewables Portfolio Standard   |
| SCAB              | South Coast Air Basin   |
| SCAQMD            | South Coast Air Quality Management District                             |
| SF <sub>6</sub>   | sulfur hexafluoride   |
| TAC               | toxic air contaminant   |
| USEPA             | United States Environmental Protection Agency                           |

## 1. INTRODUCTION

This study analyzes the potential air quality and greenhouse gas (GHG) emissions of the proposed Bear Valley Solar Energy Project (Project) near the City of Big Bear Lake in unincorporated San Bernardino County, California. The Project consists of a new, community-oriented approximately 5-megawatt (MW) alternating current solar photovoltaic (PV) facility situated on approximately 30 acres of privately owned land to meet local energy demand. Environmental Resources Management, Inc. (ERM) prepared this study under contract with EDF Renewables Distribution-Scale Power on behalf of Bear Valley Electric Service, Inc. (BVES), the owner and Applicant. The purpose of this study is to analyze the Project's potential air quality and GHG impacts related to both temporary construction activity and long-term operation of the Project. This analysis is part of the environmental review process to comply with the California Environmental Quality Act (CEQA).

## 2. AIR QUALITY

The Environmental Setting section of this study provides a description of the air quality in unincorporated San Bernardino County. The Regulatory Setting section provides a description of applicable federal, state, and local regulatory policies that were developed in part from information contained in the San Bernardino County Countywide Plan – Natural Resources Element, Goal NR -1: Air Quality<sup>1</sup>. Additional documents utilized are noted as appropriate. The Methodologies and Thresholds Section describes the methodologies used for determining significance as well as the thresholds used. The Impact Evaluation Section provides a description of the potential impacts of the Project and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or reduce the potential for significant impacts to less-than-significant levels.

### 2.1 ENVIRONMENTAL SETTING

#### 2.1.1 GEOGRAPHY

The Project is located on unincorporated land in Big Bear Valley which is a part of the South Coast Air Basin (SCAB). The SCAB is bounded by the San Gabriel and San Bernardino Mountains to the north and the San Jacinto Mountains to the east. The relationship between geography and air quality is described in the following section on meteorology.

#### 2.1.2 METEOROLOGY

Big Bear Valley has a climate characterized by warm summers and cold winters with precipitation occurring as rainfall in the warmer months and snowfall in the colder months. Average daily summer temperatures range between 60 to 70 degrees Fahrenheit, and average daily winter temperatures range between 35 to 40 degrees Fahrenheit<sup>2</sup>. Average annual precipitation is

---

<sup>1</sup> San Bernardino County. Countywide Plan – Natural Resources Element, Goal NR -1: Air Quality. <https://countywideplan.sbcounty.gov/policy-plan/natural-resources/>

<sup>2</sup> PRISM Climate Group, Oregon State University. 2024. <https://prism.oregonstate.edu>, data accessed September 2024.

21 inches and ranges from 0.12 inches in June to 4.73 in February<sup>3</sup>. The prevailing winds originate predominately from the west and southeast and have maximum speeds up to 5.7 meters per second.<sup>4</sup>

The San Bernardino Mountains surrounding Big Bear Valley create a barrier to airflow, which can trap air pollutants in the valley during unfavorable meteorological conditions and temperature inversions. Air stagnation can occur when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by low surface heating reduces the influx of outside air and allows pollutants to become concentrated in the air. The surface concentrations of pollutants are highest when these conditions are combined with increased levels of smoke or when temperature inversions trap cool air, fog, and pollutants near the ground.

### 2.1.3 AMBIENT AIR QUALITY

As required by the federal-level Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has identified six criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. The six criteria pollutants are ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter with an aerodynamic diameter of 10 microns and less (PM<sub>10</sub>) and particulate matter with an aerodynamic diameter of 2.5 microns and less (PM<sub>2.5</sub>), and lead. To protect human health and the environment, the USEPA has set “primary” and “secondary” maximum ambient standards for each of the criteria pollutants. Primary standards were set to protect human health, particularly sensitive individuals such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings. The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year.

California has adopted the California Ambient Air Quality Standards (CAAQS), which are more stringent ambient air quality standards (AAQS) for most of the criteria pollutants. The California Air Resources Board (CARB) is the State agency responsible for establishing CAAQS. If ambient air quality concentrations of the pollutants of concern are below the NAAQS and CAAQS standards, then health impacts are not anticipated. However, when concentrations of the air pollutants exceed the NAAQS and CAAQS standards, then health impacts are considered to vary based on the level of exceedance. The USEPA and CARB designate counties in California as being in attainment or non-attainment for the NAAQS and CAAQS, respectively. Table 2.1-1 summarizes the most stringent NAAQS/CAAQS and the attainment status of the SCAB.

---

<sup>3</sup> United States Geological Survey (USGS). 2012. Geohydrology of Big Bear Valley, California phase 1— Geologic Framework, Recharge, and Preliminary Assessment of the Source and Age of Groundwater. Available at: <https://pubs.usgs.gov/sir/2012/5100/pdf/sir20125100.pdf>. Accessed July 2024.

<sup>4</sup> South Coast Air Quality Management District (SCAQMD). 2024. AERMOD Table 1: Meteorological Sites. <https://www.aqmd.gov/home/air-quality/meteorological-data/aermod-table-1>, data accessed October 2024.

**TABLE 2.1-1 MOST STRINGENT AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN**

| Pollutant                                      | Averaging Time          | CAAQS Concentration   | CAAQS Status | NAAQS Concentration    | NAAQS Status                  |
|--|-------------------------|-----------------------|--------------|------------------------|-------------------------------|
| Ozone  | 8 hours                 | 0.070 ppm             | N            | 0.070 ppm              | N                             |
|  | 1 hour                  | 0.09 ppm              | N            | 0.12 ppm <sup>a</sup>  | N                             |
| Carbon Monoxide                                | 8 hours                 | 9 ppm                 | A            | 9 ppm                  | A                             |
|  | 1 hour                  | 20 ppm                | A            | 35 ppm                 | A                             |
| Nitrogen Dioxide                               | 1 hour                  | 0.18 ppm              | A            | 0.10                   | A                             |
|  | Annual                  | 0.03 ppm              | A            | 0.053 ppm              | A                             |
| Sulfur Dioxide                                 | 24 hours                | 0.04 ppm              | A            | -                      | -                             |
|  | 1 hour                  | -                     | -            | 0.075 ppm              | A                             |
| Particulate Matter (PM <sub>10</sub> )         | Annual                  | 20 µg/m <sup>3</sup>  | N            | -                      | -                             |
|  | 24 hours                | 50 µg/m <sup>3</sup>  | N            | 150 µg/m <sup>3</sup>  | N                             |
| Particulate Matter - Fine (PM <sub>2.5</sub> ) | Annual                  | 12 µg/m <sup>3</sup>  | N            | 9.0 µg/m <sup>3</sup>  | To be determined <sup>b</sup> |
|  | 24 hours                | -                     | -            | 35 µg/m <sup>3</sup>   | N                             |
| Sulfates                                       | 24 hours                | 25 µg/m <sup>3</sup>  | A            | —                      | —                             |
| Lead   | Rolling 3-Month Average | -                     | -            | 0.15 µg/m <sup>3</sup> | A                             |
|  | 30-day average          | 1.5 µg/m <sup>3</sup> | N            | -                      | -                             |

A=Attainment; N=Non-attainment; U=Unclassified

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter

- a) 1-hour O<sub>3</sub> standard (0.12 ppm) was revoked, effective 15 June 2005; however, the Basin has not attained this standard and is still subject to anti-backsliding requirements.
- b) In February 2024 the USEPA strengthened the NAAQS for PM<sub>2.5</sub> to 9.0 µg/m<sup>3</sup>. The USEPA has 2 years to designate areas as in attainment or non-attainment so current monitoring data is still being analyzed. However, the air basin was not in attainment with the previous standard of 12.0 µg/m<sup>3</sup> and based on monitoring data for 2020-2022, the air basin will likely not be in attainment with the more stringent threshold either.

### 2.1.4 SENSITIVE RECEPTORS

Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses). The South Coast Air Quality Management District (SCAQMD) identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes. The Project site is bounded on the north and east by undeveloped land, on the south by Erwin Ranch Road, and on the west by Lakewood Drive. The site is in a rural area consisting mostly of ranches; however, there is a residential ranch house on the east, south, and west sides of the Project with the closest located adjacent to the south side of the Project site.

## 2.2 REGULATORY SETTING

This section summarizes the relevant laws, regulations, and policies related to air quality at federal, state, regional, and local levels.

### 2.2.1 FEDERAL

As discussed in the Ambient Air Quality section, the CAA establishes the statutory framework for regulation of air quality in the United States. Pursuant to this act, the USEPA has established various regulations to achieve and maintain acceptable air quality, including the adoption of NAAQS, mandatory State Implementation Plan or maintenance plan requirements to achieve and maintain NAAQS, and emission standards for both stationary and mobile sources of air pollution. The NAAQS were established in 1970 for six criteria pollutants because they are considered the most prevalent air pollutants known to be hazardous to human health. If a region is designated as non-attainment for a NAAQS, the CAA requires the state to develop a State Implementation Plan to demonstrate how the standard will be attained, including the establishment of specific requirements for review and approval of new or modified stationary sources of air pollution. The CAA Amendments of 1990 directed the USEPA to set standards for toxic air contaminants (TAC) and required facilities to sharply reduce emissions. Table 2.1-1 summarizes state and federal AAQS.

Another major component of the CAA is Hazardous Air Pollutants (HAPs). The 1977 CAA amendments required the USEPA to identify National Emission Standards for Hazardous Air Pollutants known as NESHAPs to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that are expected to result in a decrease of public health, based on scientific studies of exposure to humans and other mammals. The 1990 CAA amendments required the USEPA to set standard permissible ceilings for 187 substances and chemical families. The amendments also required businesses to implement risk-management programs for dealing with potential releases of hazardous substances.

### 2.2.2 STATE

The CARB is the State agency responsible for California air quality management. It establishes CAAQS, TAC standards, mobile source emission standards, and GHG regulations, as well as

oversight of regional air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution.

The CAAQS are generally more stringent than federal NAAQS, except for the 1-hour nitrogen dioxide and sulfur dioxide standards, and include more pollutants than the NAAQS (see Table 2.1-1). California specifies four additional criteria pollutants: visibility reducing particles, sulfates and hydrogen sulfide, and vinyl chloride. Similar to USEPA, CARB designates counties in California as being in attainment or non-attainment for the CAAQS.

State law has also established the framework for California's TAC identification and control program, which is generally more stringent than the Federal HAP program and aimed at TACs that are a problem in California. According to section 39655 of the California Health and Safety Code, a TAC is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." CARB has formally identified over 200 substances and groups of substances as TACs including diesel particulate matter (DPM). In addition, substances which have been listed as federal HAPs pursuant to section 7412 of Title 42 of the United States Code are TACs under California's air toxics program. CARB is adopting appropriate control measures for sources of these TACs. The following measures are required by California law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

### 2.2.3 REGIONAL - SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

The Project site is located within the jurisdiction of the SCAQMD. The SCAQMD is the regional air agency charged with preparing, adopting, and implementing emission control measures and standards for stationary sources of air pollution pursuant to delegated state and federal authority. Because the Project would not involve construction of new stationary sources, and most equipment that will be used for construction is classified as mobile sources and is thus exempt from stationary source permit requirements, there are no relevant air permitting regulations. The SCAQMD has published CEQA guidelines for analysis and mitigation of impacts from projects within its jurisdiction, and established thresholds of significance for construction impacts as well as impacts from operation of non-permitted equipment and activities.

Under the CAA, the SCAQMD is required to develop an air quality plan to achieve and/or maintain compliance with federal and state non-attainment criteria pollutants within its air district. The SCAQMD has taken action and developed attainment plans, namely the 2022 Air Quality

Management Plan (AQMP) and the SCAB Attainment Plan for the 2012 Annual PM<sub>2.5</sub> Standard, to achieve and/or maintain compliance with the federal and state ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> standards<sup>5</sup>.

**Notification Requirements under SCAQMD Rule 403.** Rule 403 (Fugitive Dust) prohibits creation of dust plumes that are visible beyond the property line of the emission source and requires all active operations to implement applicable best available control measures. Enhanced dust control and notification requirements apply if the project is considered a “large operation” under this rule, which is any active operations on property that contains 50 or more acres of disturbed surface area. As the total parcel is approximately 30 acres with the disturbed area under 21 acres, enhanced dust control and notification requirements are not applicable.

#### 2.2.4 LOCAL - COUNTY OF SAN BERNARDINO

Local jurisdictions, such as the County of San Bernardino, are responsible for the assessment and mitigation of air emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation. The applicable San Bernardino County’s Countywide Plan goals and policies and Development Code regulations are listed below.

##### 2.2.4.1 SAN BERNARDINO COUNTY COUNTYWIDE PLAN / POLICY PLAN

The County’s Countywide Plan, adopted on 27 October 2020, serves as a set of plans and tools for the County’s unincorporated communities and complements the Countywide vision. The Countywide Plan consists of the Policy Plan, Business Plan, and Community Action Guides, together with the supporting environmental clearance. The Policy Plan is a component of the Countywide Plan that is an update and expansion of the County’s General Plan for the unincorporated areas. The following goals and policies are applicable to the Project:

#### Natural Resources (NR) Element

##### **“Goal NR-1: Air Quality**

Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emissions.”

##### *Policies:*

“NR-1.1 Land use. We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.”

“NR-1.2 Indoor air quality. We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.”

<sup>5</sup> South Coast Air Quality Management District (SCAQMD). 2009. Localized Significance Thresholds. <https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>

"NR-1.3 Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source."

"NR-1.6 Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions."

"NR-1.8 Construction and operations. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions."

"NR-1.9 Building design and upgrades. We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions."

### Renewable Energy (RE) Element

#### *Policies:*

"RE 4.1 Apply standards to the design, siting, and operation of all renewable energy facilities that protect the environment, including sensitive biological resources, air quality, water supply and quality, cultural, archaeological, paleontological, and scenic resources."

"RE 4.3.1 Define measures required to minimize ground disturbance, soil erosion, flooding, and blowing of sand and dust, with appropriate enforcements mechanisms in the Development Code."

### 2.2.4.2 SAN BERNARDINO COUNTY DEVELOPMENT CODE

#### **Section 83.01.040**

"(c) Diesel Exhaust Emissions Control Measures. The following emissions control measures shall apply to all discretionary land use projects approved by the County on or after January 15, 2009:

- 1) On-Road Diesel Vehicles. On-road diesel vehicles are regulated by the State of California Air Resources Board.
- 2) Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce DPM emissions from diesel-fueled engines:
  - A. Off-road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:
    - (I) Idling when queuing;
    - (II) Idling to verify that the vehicle is in safe operating condition;
    - (III) Idling for testing, servicing, repairing or diagnostic purposes;

- (IV) Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane);
  - (V) Idling required to bring the machine system to operating temperature; and;
  - (VI) Idling necessary to ensure safe operation of the vehicle.
- B. Use reformulated ultra-low-sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.
  - C. Maintain engines in good working order to reduce emissions.
  - D. Signs shall be posted requiring vehicle drivers to turn off engines when parked.
  - E. Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board.
  - F. Provide temporary traffic control during all phases of construction.
  - G. On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.
  - H. Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.
  - I. Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.
  - J. Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.”

### **Section 84.29.035**

(c) The finding of fact shall include the following:

- 20) “The proposed commercial solar energy generation facility will be designed, constructed, and operated so as to minimize dust generation, including provision of sufficient watering of excavated or graded soil during construction to prevent excessive dust. Watering will occur at a minimum of three (3) times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative, or other approved dust control measure.
- 21) All clearing, grading, earth moving, and excavation activities will cease during period of winds greater than 20 miles per hour (mph), averaged over one hour, or when dust

plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property, and in conformance with AQMD regulations.

- 22) For sites where the boundary of a new commercial solar energy generation facility will be located within one-quarter mile of a primary residential structure, an adequate wind barrier will be provided to reduce potentially blowing dust in the direction of the residence during construction and ongoing operation of the commercial solar energy generation facility.
- 23) Any unpaved roads and access ways will be treated and maintained with a dust palliative or graveled or treated by another approved dust control Chapter 83.09 of the Development Code.
- 24) On-site vehicle speed will be limited to 15 mph.”

## 2.3 METHODOLOGY AND THRESHOLDS

### 2.3.1 THRESHOLDS OF SIGNIFICANCE

The thresholds of significance for this section are established by the SCAQMD significance thresholds identified in their document titled *South Coast AQMD Air Quality Significance Thresholds*.<sup>6</sup> The following are potential thresholds for significance:

- Result in an exceedance of an SCAQMD mass daily threshold during construction or operation.
- Result in exposure of sensitive receptors to emissions of TAC over the maximum health risk.
- Result in an odor nuisance as defined in SCAQMD Rule 402.
- Result in an exceedance of an AAQS for criteria pollutants.

To characterize the potential impact of criteria air pollutant emissions in the CEQA process, SCAQMD recommends use of regional significance thresholds for construction and for project-related operation emissions that are subject to CEQA review. The emissions from the activities of construction and operation of the project are compared to these SCAQMD regional significance thresholds to determine whether the project would result in adverse air quality impacts.

The project-level SCAQMD regional significance emissions thresholds for CEQA review are shown below in Figure 2.3-1.

---

<sup>6</sup> South Coast Air Quality Management District. South Coast AQMD Air Quality Significance Thresholds. <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>

FIGURE 2.3-1 SCAQMD REGIONAL SIGNIFICANCE EMISSIONS THRESHOLDS

| South Coast AQMD Air Quality Significance Thresholds    |   |             |
|---|---|-------------|
| Mass Daily Thresholds <sup>a</sup>                      |   |             |
| Pollutant   | Construction  | Operation   |
| NO <sub>x</sub>   | 100 lbs/day   | 55 lbs/day  |
| VOC   | 75 lbs/day  | 55 lbs/day  |
| PM <sub>10</sub>  | 150 lbs/day   | 150 lbs/day |
| PM <sub>2.5</sub>                                       | 55 lbs/day  | 55 lbs/day  |
| SO <sub>x</sub>   | 150 lbs/day   | 150 lbs/day |
| CO  | 550 lbs/day   | 550 lbs/day |
| Lead  | 3 lbs/day   | 3 lbs/day   |
| Toxic Air Contaminants (TACs), Odor, and GHG Thresholds |   |             |
| TACs<br>(including carcinogens and non-carcinogens)     | Maximum Incremental Cancer Risk $\geq$ 10 in 1 million<br>Cancer Burden > 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million)<br>Chronic & Acute Hazard Index $\geq$ 1.0 (project increment) |             |
| Odor  | Project creates an odor nuisance pursuant to South Coast AQMD Rule 402  |             |

Source: SCAQMD 2023<sup>7</sup>.

For emissions exceeding the regional significance thresholds, the SCAQMD also provides air quality significance thresholds for ambient air quality impact assessments, which may be used to calculate the downwind concentrations caused by the on-site portions of project emissions.

For emissions from sites that are near sensitive receptors and are 5 acres or less, SCAQMD developed the Localized Significance Thresholds (LSTs) to evaluate whether a mass emission rate from a project may generate significant adverse localized air quality impacts. The LSTs may be used by lead agencies as a way of indicating whether a project could locally exceed the AAQs at a given distance from the site boundary. The LSTs vary depending on the meteorological conditions for each source receptor area within the SCAQMD jurisdiction. Since the Project would occupy approximately 21 acres of the 30-acre parcel, use of LSTs would not be appropriate for this Project. While SCAQMD recommends that proposed projects larger than 5 acres in area undergo air dispersion modeling to determine localized air quality, the Project would not include new stationary sources that could be subject to risk assessment programs.

### 2.3.2 METHODOLOGY

Air quality impacts associated with onsite construction and operational activities were calculated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1.17. CalEEMod was developed for the California Air Pollution Control Officers Association in collaboration with California air districts to calculate air quality and GHG emissions associated with land use projects. The program analyzes construction (short-term) emissions by utilizing both default values for specific geographic areas and typical land use projects as well as project-specific values such as construction schedules and equipment rosters. The estimated use of construction equipment and the CalEEMod output are provided in Appendix A. It is assumed that minimal or no waste soil hauling will occur as a result of constructing the Project. CalEEMod was also set up to assume that

95 percent of the roads traveled by the construction crew are paved and that the remaining portion (5 percent) to access the site is unpaved.

The Project would be operated remotely and would be unstaffed. Operations would emit less than 0.005 tons per year of any criteria air pollutant. Project operations would entail infrequent maintenance inspections by part-time personnel, which would include local service businesses, as needed. Repair/servicing and replacement of equipment may be required periodically over the Project lifespan. These types of maintenance visits, assumed to occur within 1 to 2 workdays at most, would be comparable to the short-term construction emissions.

## 2.4 IMPACT EVALUATION

Appendix G, part III of the CEQA Environmental Checklist includes four questions relevant to the potential for impacts to air quality. Where available, the significance criteria established by the applicable air quality management district or air pollution control district (i.e., SCAQMD) may be relied upon to make the following determinations. The CEQA Environmental Checklist asks if the Project would:

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state AAQS (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- c) Expose sensitive receptors to substantial pollutant concentrations?
- d) Create objectionable odors affecting a substantial number of people?

### A. CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN?

For the Project area, the SCAQMD and CARB ensure implementation of California's AQMPs, known collectively as the State Implementation Plan. State-level air quality planning strategies to attain CAAQS are implemented through rules, regulations, and programs adopted by SCAQMD and CARB to control ozone precursors, PM<sub>10</sub>, and PM<sub>2.5</sub>. All construction and Project development-related activities, including operation and maintenance and eventual decommissioning, would comply with the applicable rules, regulations, and programs. Strategies and control measures identified within the SCAQMD 2016 AQMP, and the updated 2022 AQMP, apply directly to Project activities as promulgated through SCAQMD's rules and regulations.

All construction and operational activities and eventual decommissioning would comply with SCAQMD's Rule 402 and 403, which prevent nuisances and regulate fugitive dust emissions. The Project would also conform to the federal and state CAA requirements by complying with the rules and regulations that are contained in the air quality plan.

A project could be inconsistent with the applicable AQMP or attainment plan if it causes population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the attainment plan. The Project would be operated remotely and employ no more than four part-time positions for ongoing operation and maintenance (O&M) related activities. The

construction workforce would involve only temporary employment for a period of approximately 6 -9 months. Accordingly, Project construction and operation would not result in activities that would conflict with or obstruct implementation of the applicable air quality plan, and this impact would be *less than significant*.

**B. RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD?**

Construction-related activities of the proposed Project will most likely require approximately 6 months of continuous activity involving six overlapping phases during normal working hours, 5 days per week. It is not uncommon for construction projects to experience delays. Although CalEEMod was used to calculate emissions associated with the planned 6-month schedule, delays could extend construction to approximately 9 months. It is noted that construction-related activities that emit air emissions will be a mix of short-term, intermittent, and temporary durations; and will vary by phase and from equipment type usage.

Construction-related activities of the proposed Project will generate air pollutant emissions from entrained dust, off-road equipment use, and vehicle emissions. Off-site emissions will be generated by construction worker daily commute trips and heavy-duty diesel haul and vendor truck trips. Construction-related emissions could vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Exhaust emissions include ozone precursors (volatile organic compounds and nitrogen oxides [NO<sub>x</sub>]), CO, and particulate matter (including PM<sub>10</sub> and PM<sub>2.5</sub>). Fugitive dust includes particulate matter from soil eroded by ground-disturbing activities and by travel on unpaved surfaces and on paved road surfaces. Dust control and engine exhaust would be subject to SCAQMD rules and regulations to avoid adverse levels of air pollutant concentrations.

Table 2.4-1 summarizes the maximum daily emissions rates anticipated for the 6-month Project lifespan.

**TABLE 2.4-1 MAXIMUM DAILY CONSTRUCTION EMISSIONS**

| <b>Pollutant</b>       | <b>Emissions (max lb/day)</b> | <b>SCAQMD Air Quality Significance Thresholds</b> | <b>Below Threshold (Y/N)</b> |
|------------------------|-------------------------------|---|------------------------------|
| VOC                    | 2.45                          | 75 lbs/day  | Y                            |
| NO <sub>x</sub>        | 20.8                          | 100 lbs/day                                       | Y                            |
| CO                     | 23.0                          | 550 lbs/day                                       | Y                            |
| SO <sub>x</sub>        | 0.04                          | 150 lbs/day                                       | Y                            |
| PM <sub>10</sub> Total | 63.3                          | 150 lbs/day                                       | Y                            |

| Pollutant               | Emissions<br>(max lb/day) | SCAQMD Air<br>Quality<br>Significance<br>Thresholds | Below Threshold (Y/N) |
|-------------------------|---------------------------|---|-----------------------|
| PM <sub>2.5</sub> Total | 6.67                      | 55 lbs/day  | Y                     |

CO = carbon monoxide; lb/day = pounds per day; N = no; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> = particulate matter 10 micrometers or less in diameter; PM<sub>2.5</sub> = particulate matter 2.5 micrometers or less in diameter; SO<sub>x</sub> = sulfur oxides; VOC = volatile organic compounds; Y = yes

As shown in Table 2.4-1, all maximum daily construction-related emissions without controls would be well below the SCAQMD daily thresholds for construction. Even if the construction schedule slipped and emissions were doubled, they would still be below thresholds. Application of SCAQMD and San Bernardino County dust control and off-road equipment emissions controls as mitigation measures would even further reduce the construction emissions of NO<sub>x</sub> and PM<sub>10</sub> below the SCAQMD thresholds. As such, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state AAQS, and the impact would be *less than significant*.

### C. EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS?

As discussed in Section 2.1.4, sensitive receptors are those individuals more susceptible to the effects of air pollution. Although the site is located in a rural region, there are several residences surrounding the property to east, west, and south. While these residences are in close proximity to the Project site, construction emissions are well below thresholds and would be short duration in nature; therefore, sensitive receptors would not be exposed to substantial pollutant concentrations.

As noted previously, operations would entail infrequent maintenance activities, as needed, resulting in minimal emissions from maintenance vehicles and equipment. Therefore, operations would not expose existing sensitive receptors to substantial pollutant concentrations.

Given that the estimated Project emissions are well below significance thresholds as shown in Table 2.4-1, any potential impacts from exposure to substantial pollutant concentrations during construction and project operations would be *less than significant*.

### D. RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE)?

Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. No significant sources of these odor causing pollutants would exist during construction. An additional potential source of odor is diesel engine emissions. During construction, diesel exhaust produced by off-road construction equipment could generate odors; however, several pieces of construction equipment would need to operate concurrently in a relatively small area to generate a constant plume of diesel exhaust that could cause objectionable odors for a substantial number of people. These circumstances are not expected to occur as part of the Project because

construction equipment would not all operate at the same time. In addition, with respect to Project operations, no odor-generating activities are expected to occur.

In addition to impacts from criteria pollutants discussed under B., other emissions may include TACs or HAPs identified by the state and federal government, respectively. The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks. As shown in Table 2.4-1, maximum daily particulate matter (PM<sub>10</sub> or PM<sub>2.5</sub>) emissions generated by construction equipment operation, combined with fugitive dust generated by equipment operation, would be well below the SCAQMD significance thresholds. During operation, the Project would include minimal sources of TAC emissions, potentially including use of pressure washers once annually for panel washing and use of water trucks for periodic water deliveries to the site. Given the minor increase in emissions, operational activities are not expected to be a significant source of DPM or associated potential health impacts.

As described, because few sources of odor and TACs would exist and they would be short term in nature, the Project would not result in other emissions adversely affecting a substantial number of people and impacts due to other emissions would be *less than significant*.

### 3. GREENHOUSE GAS EMISSIONS

#### 3.1 ENVIRONMENTAL SETTING

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern in releasing excess GHG to the atmosphere is global climate change. Global climate change is a change in the average climate on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Human activity directly contributes to emissions of six primary anthropogenic GHGs: carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride (SF<sub>6</sub>).<sup>7</sup> The most important and widely occurring anthropogenic GHG is CO<sub>2</sub>, primarily from the use of fossil fuels as a source of energy.

Research by California's Office of Environmental Health Hazard Assessment documents climate change indicators by categorizing the effects as: changes in California's climate; impacts to physical systems including oceans, lakes, rivers, and snowpack; and impacts to biological systems including humans, vegetation, and wildlife. The primary observed changes in California's climate include increased annual average air temperatures, more-frequent extremely hot days and nights, and increased severity of drought. Impacts to physical systems affected by warming temperatures and changing precipitation patterns show decreasing snowmelt runoff, shrinking glaciers, and rising sea levels. Impacts to terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply are occurring in conjunction with the potential to impact human well-being<sup>8</sup>.

The electricity sector in California has achieved substantial GHG emissions reductions through renewable and zero-carbon energy deployment. Moving forward, a clean, affordable, and reliable

---

<sup>7</sup> California Air Resources Board. AB 32 Global Warming Solutions Act of 2006 Assembly Bill 32 Overview. <https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006>

<sup>8</sup> OEHHA (Office of Environmental Health Hazard Assessment, California Environmental Protection Agency). 2018. Indicators of Climate Change in California.

electricity grid will serve as a backbone to support deep decarbonization across California's economy. Decarbonizing the electricity sector is a crucial pillar of achieving carbon neutrality, and CARB anticipates that the role of electricity in powering the economy will continue to grow while electric loads increase<sup>9</sup>. California continues to add zero-carbon energy resources to replace fossil-fuel generation and support growing demand. Moving to zero-carbon resources is critical to reducing GHG emissions and addressing the long-term impacts of climate change<sup>10</sup>.

Renewable and zero-carbon sources of energy do not operate on-demand like traditional fossil fuel power plants. Energy storage improves California's ability to efficiently integrate renewable resources. The growth of zero-carbon resources, especially solar resources, has shifted the reliability concerns from the peak hour (hour with the highest energy demand) to net peak hours (hours when energy demand minus wind and solar generation is largest). The changing resource mix is driving a change in the characteristics of the electricity system and requires consideration of the net demand curve, total electricity demand less the wind and solar generation. The "duck curve" is characterized by more drastic increases in net demand in the evening hours as solar decreases, and a net peak that occurs later in the evening when solar generation is substantially diminished or nonexistent. Storing some midday solar generation flattens the duck's curve, and dispatching the stored solar generation in the evening shortens the duck's neck<sup>11</sup>. Presently, fossil-fuel natural gas-fired power plants provide about 75 percent of the flexible capacity for grid reliability. As more renewable power enters the system, other resources such as storage and demand-side management are essential to maintain reliability with high concentrations of renewables<sup>9</sup>.

### 3.1.1 EXISTING CONDITIONS

In 2016, San Bernardino County generated approximately 16 million metric tons (MT) of carbon dioxide equivalents (CO<sub>2</sub>e)<sup>12</sup>. The largest portion of these emissions (51 percent) is attributed to on-road vehicles, while the second largest portion (35 percent) is due to building energy. In 2030, San Bernardino County is forecast to generate approximately 17.6 million tons of CO<sub>2</sub>e, a GHG emissions increase of 15 percent. The largest portion of these emissions (51 percent) is attributed to on-road vehicles, while the second largest portion (38 percent) is due to building energy.

## 3.2 REGULATORY SETTING

### 3.2.1 FEDERAL

The Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 051120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the federal-level CAA. On 17 April 2009, USEPA found

---

<sup>9</sup> California Air Resources Board. 2022. California's Scoping Plan for Achieving Carbon Neutrality. December 2022. <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>.

<sup>10</sup> California Energy Commission. 2022. Final 2021 Integrated Energy Policy Report (IEPR), Volume II - Ensuring Reliability in a Changing Climate. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241583>.

<sup>11</sup> U.S. EIA (Energy Information Administration). 2023. Today in Energy: As solar capacity grows, duck curves are getting deeper in California. June. <https://www.eia.gov/todayinenergy/detail.php?id=56880>.

<sup>12</sup> San Bernardino County Transportation Authority. March 2021. San Bernardino County Regional Greenhouse Gas Reduction Plan. Appendix A. [https://www.gosbcta.com/wp-content/uploads/2019/09/San\\_Bernardino\\_Regional\\_GHG\\_Reduction\\_Plan\\_Appendices\\_Mar\\_2021.pdf](https://www.gosbcta.com/wp-content/uploads/2019/09/San_Bernardino_Regional_GHG_Reduction_Plan_Appendices_Mar_2021.pdf)

that CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and SF<sub>6</sub> may contribute to air pollution and may endanger public health and welfare. The USEPA has established reporting regulations that require specific facilities and industries to report their GHG emissions annually. *40 Code of Federal Regulations Part 98, Mandatory Reporting of Greenhouse Gases Rule* requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of CO<sub>2</sub>e (MTCO<sub>2</sub>e) per year.

### 3.2.2 STATE

#### *ASSEMBLY BILL 32: GLOBAL WARMING SOLUTIONS ACT OF 2006*

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). AB 32 provides the framework for regulating GHG emissions in California. This law requires the CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020.

The bill also requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The bill authorizes CARB to adopt market-based compliance mechanisms. The bill additionally requires the state board to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by the state board, pursuant to specified provisions of existing law. The bill also authorizes CARB to adopt a schedule of fees to be paid by regulated sources of GHG emissions. Because the bill requires CARB to establish emissions limits and other requirements, the violation of which would be a crime, this bill would create a state-mandated local program. Under AB 32, by 30 June 2007, CARB was to identify a list of discrete early action GHG reductions that will be legally enforceable by 2010. By 1 January 2008, CARB was also to adopt regulations that will identify and require selected sectors to report their statewide GHG emissions. By 1 January 2011, CARB must adopt rules and regulations to achieve the maximum technologically feasible and cost-effective reductions in GHG reductions. CARB is authorized to enforce compliance with the program that it develops.<sup>13</sup>

#### *STATE EXECUTIVE ORDERS ON GHG EMISSIONS*

State Executive Order S-3-05 (June 2005) established the initial GHG reduction targets for the State of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050.

In April 2015, Governor Brown signed Executive Order B-30-15, establishing the intermediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030, to ensure the state meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 (Executive Order S-3-05). On 8 September 2016, Governor Brown signed SB 32 and AB 197, which codified

---

<sup>13</sup> AB 32 Global Warming Solutions Act of 2006 Assembly Bill 32 Overview

the 2030 GHG emissions reduction target of 40 percent below 1990 levels and provided additional direction for updating the scoping plan.

In September 2018, Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. CARB was directed to develop the framework for implementing the goal of carbon neutrality.

### *RENEWABLES PORTFOLIO STANDARD (RPS) PROGRAM AND SENATE BILLS 350 & 100*

On 10 September 2018, Governor Brown signed Senate Bill 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by 31 December 2045. Specifically, the bill increases required energy from renewable sources for both investor-owned utilities and publicly-owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. California must procure 100 percent of its energy from carbon-free energy sources by the end of 2045.<sup>14</sup>

Senate Bill 100 also creates new standards for the Renewables Portfolio Standard (RPS) goals established by Senate Bill 350 in 2015. The Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) established California's state policy objectives on long-term energy planning and procurement as signed into law on October 7, 2015.

### *CAP-AND-TRADE PROGRAM (17 CALIFORNIA CODE OF REGULATIONS 95801 TO 96022)*

The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was initially approved by CARB in 2011. The Cap-and-Trade Program applies to covered entities that fall within certain source categories, including suppliers of transportation fuels, retail providers of electricity, and operators of electricity generating facilities. The program is triggered when facility emissions exceed 25,000 MTCO<sub>2e</sub> in a year. The covered entities must hold compliance instruments sufficient to cover the actual GHG emissions, as evidenced through CARB's Mandatory Reporting Regulation requirements. This means that transportation fuel suppliers bear the GHG compliance obligation in the Cap-and-Trade Program for the GHG emissions from motor vehicle and off-road equipment fuels used by construction workforces and crews. No specific reporting requirements apply to electric power generation from solar resources.

### *SENATE BILLS 97 AND 743*

SB 97, enacted in 2007, amended the CEQA statute to establish that GHG emissions and their effects are a prominent environmental issue that require analysis and identification of feasible mitigation under CEQA. GHG emissions were incorporated into the CEQA guidelines on 18 March 2010.

With the passing of SB 743 in 2013, the Governor's Office of Planning and Research further amended the State CEQA Guidelines providing alternative criteria to level of service for evaluating

---

<sup>14</sup> Senate Bill 100. [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB100](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100).

transportation impacts. One of the goals of the new criteria is to promote the reduction of GHG. Local jurisdictions were required to implement SB 743 by 1 July 2020 or do additional transportation analysis on a project-by-project basis.

### *EMISSION REDUCTIONS OF SF<sub>6</sub> FROM GAS INSULATED EQUIPMENT (17 CALIFORNIA CODE OF REGULATIONS 95350 TO 95359)*

Electric power gas insulated equipment and switchgear used in transmission and distribution systems are subject to this regulation for reducing or phasing-out SF<sub>6</sub> emissions and leaks. The regulation, initially adopted by CARB in 2010 and amended in 2022, requires owners of such gas-insulated equipment or switchgear to phase out use of SF<sub>6</sub>, maintain records and inventories of their gas-insulated equipment and capacities, and report CO<sub>2e</sub> emissions to demonstrate compliance with annual limits set by the rule.

### *CLIMATE CHANGE SCOPING PLAN*

CARB published a Climate Change Scoping Plan in December 2022 that outlines reduction measures to lower the state's GHG emissions and achieve a 85 percent reduction from 1990 levels as required by AB 1279.<sup>15</sup> Key elements for reducing California's GHG emissions to 85 percent of 1990 levels by 2045 include:

- Direct emission reduction for sources covered by the AB 32 Inventory;
- Reducing demand for petroleum fuels;
- Carbon capture and sequestration for petroleum refineries and manufacturing facilities; and
- Electrification of industrial, commercial, and residential energy use

### *3.2.3 REGIONAL - SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)*

On 5 December 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. This interim guidance includes a numeric threshold to determine significance for industrial projects where SCAQMD is the lead agency<sup>16</sup>. This interim guidance has continued to be used and is repeated in SCAQMD's Air Quality Significance thresholds that were published in March 2023.<sup>17</sup>

### *3.2.4 LOCAL – COUNTY OF SAN BERNARDINO*

Local jurisdictions, such as the County of San Bernardino, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the County is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the County assesses the global climate change potential of new development projects, requires mitigation of

<sup>15</sup> California Air Resources Board. 2022 Scoping Plan Documents. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

<sup>16</sup> SCAQMD Governing Board Agenda Item 31. 5 December 2008. [https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2)

<sup>17</sup> SCAQMD Air Quality Significance Thresholds. March 2023. <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>

potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The *Greenhouse Gas Emissions Development Review Processes* (GHG Review Processes), prepared for the County of San Bernardino, March 2015, provides project level direction on how the County plans to achieve the reduction in GHG Emissions<sup>18</sup>. Further, the San Bernardino Policy Plan<sup>19</sup> includes goals and policies that all new projects are required to comply with, as applicable. The following goals and policies are applicable to this community oriented Project:

- “NR 1.7: **Greenhouse gas reduction targets.** We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.”
- “RE 2.1: Support solar energy generation, solar water heating, wind energy and bioenergy systems that are consistent with the orientation, siting and environmental compatibility policies of the General Plan.”
- “RE 3.2: Encourage community-oriented renewable energy (CORE) generation that primarily serves local uses in the county.”

In addition, the County participated with San Bernardino Associated Government’s regional planning efforts in the adoption of the San Bernardino County 2014 Regional Greenhouse Gas Reduction Plan (RGHGRP). The 2014 RGHGRP was developed to meet the requirements of AB 32 and SB 375 and includes a regional GHG emissions inventory, summarizes actions that participating jurisdictions have selected to reduce GHG emissions to 1990 levels by 2020, and provides specific reduction goals for each participating jurisdiction. In March 2021, San Bernardino Council of Governments prepared an update to the 2021 RGHGRP in order to address SB 32, which mandates a 40 percent reduction in GHG emissions from 1990 levels by 2030. The 2021 RGHGRP was prepared in accordance with the GHG reduction measures provided in California’s 2017 Climate Change Scoping Plan, November 2017<sup>20</sup>.

### 3.3 METHODOLOGY AND SIGNIFICANCE THRESHOLD

Similar to criteria pollutants, GHG impacts associated with onsite construction were calculated using the CalEEMod version 2022.1.1.17. CalEEMod was developed for the California Air Pollution Control Officers Association in collaboration with California air districts to calculate air and GHG emissions associated with land use projects. The program analyzes construction (short-term) emissions by utilizing both default values for specific geographic areas and typical land use projects as well as Project-specific values such as construction schedules and equipment rosters. The estimated use of construction equipment and the CalEEMod output are provided in Appendix A. It is assumed that no waste hauling will occur as a result of constructing the Project.

The threshold of significance for GHG emissions from industrial facilities in the SCAQMD is 10,000 MTCO<sub>2e</sub> per year.<sup>7</sup> Project-related GHG emissions would be considered to have a

<sup>18</sup> County of San Bernardino, Greenhouse Gas Emissions Development Review Processes County of San Bernardino, California, March 2015

<sup>19</sup> County of San Bernardino, County Policy Plan, October 2020.

<sup>20</sup> California Air Resources Board (CARB), Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, February 2018.

significant impact on the environment if total project emissions (direct and indirect effects) would exceed this threshold.

The SCAQMD's thresholds specifically allow for amortization of construction emissions over 30 years, to be combined with annual operational emissions to determine total annual average GHG emissions to be compared to the numerical threshold<sup>17</sup>.

For the purposes of this assessment, the estimated construction-phase GHG emissions arising from short-term activities were amortized over 30 years and added to the operational emissions for comparison with the threshold.

### 3.4 IMPACT EVALUATION

Appendix G, part VIII of the CEQA Environmental Checklist includes two questions relevant to the potential for impacts to GHG emissions. The CEQA Environmental Checklist asks if the Project would:

#### *A. GENERATE GHG EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT?*

Construction and eventual decommissioning activities would cause GHG emissions resulting from fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline will be used in mobilizing the heavy-duty construction equipment during all six phases of the Project: site preparation, pile and skid foundations, module install, electrical install, and commissioning.

The Project would be operated on an autonomous, unstaffed basis, and monitored remotely from an existing off-site facility. It is anticipated that maintenance requirements will be minimal as the proposed Project's photovoltaic arrays will operate with limited moving parts. Operational activities are limited to monitoring plant performance, periodic mowing, preventative, and unscheduled maintenance. The Project will operate during daylight hours only, and no heavy equipment will be used during routine Project operation. Default operational emissions from CalEEMod are based on land type, land amount, and local area precipitation. The major contributor to GHG emissions is the default water use number of 20 million gallons annually based on the equation used in Department of Water Resources Model Water Efficient Landscape Ordinance. These operational emissions are a gross over assumption as native drought tolerant plants will be used however, these default values are used to be conservative.

Equipment and vehicle use over the duration of construction would amount to approximately 143 MTCO<sub>2e</sub> of GHG emissions (See Appendix A for CalEEMod Output). For assessing the overall rate of project GHG emissions, San Bernardino County as CEQA lead agency allows short-term construction GHG emissions to be included with operational emissions by averaging construction effects over a 30-year life of the project, as recommended by SCAQMD. The overall construction GHG emissions amortized over 30 years would be equivalent to an annualized rate of 5 MTCO<sub>2e</sub>/year. It is assumed that decommissioning activities would be similar in nature and duration to construction activities so emissions are assumed to be the same. Decommissioning is typically faster than construction, so this is a conservative assumption. During the operational life

of the project, direct on-site O&M activities would contribute an additional 46.2 MTCO<sub>2e</sub> per year. The emissions of O&M activities are shown with the one-time and annualized GHG emissions rates of construction in Table 3.4-1.

The data provided in Table 3.4-1 shows that the proposed Project would create a total of 56 MTCO<sub>2e</sub> per year, which is well within the SCAQMD threshold of 10,000 MTCO<sub>2e</sub> per year. Even if the construction schedule slipped, and GHG emissions were doubled, it would still be well below thresholds.

**TABLE 3.4-1 BEAR VALLEY ESTIMATED GREENHOUSE GAS EMISSIONS**

| <b>Category</b>  | <b>Total (MTCO<sub>2e</sub>)</b> |
|--|----------------------------------|
| Total Construction Emissions   | 143                              |
| Amortized Construction Emissions (30 years)  | 4.77                             |
| Amortized Decommissioning Emissions (30 years)   | 4.77                             |
| Annual Operational Emissions   | 46                               |
| <b>Total Annual Emissions (includes operational and amortized construction and decommissioning activities)</b> | <b>55.54</b>                     |
| <b>SCAQMD Annual Threshold</b>   | <b>10,000</b>                    |
| <b>Below Threshold (Y/N)</b>   | <b>Y</b>                         |

MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent; N = no; Y = yes

Further, operation of the solar facility will offset GHG emissions by displacing power produced by carbon-based fuels that would otherwise be used to meet electricity demand. The power displaced is incremental power provided by generators elsewhere on the grid, typically from natural gas power plants. The Project will generate an estimated 13,987 megawatt-hours of solar-generated electricity each year that will be added to the power grid and be used in place of electricity generated by fossil-fuel sources. One hundred percent of the power produced by the Project will be consumed locally within Bear Valley Electric Service, Inc. service territory.

Therefore, because GHG emissions from the Project are well below the threshold and because this Project would displace conventional fossil-fueled electricity generation a less than significant generation of GHG emissions would occur from development of the proposed Project. Impacts to the environment would be *less than significant*.

*B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?*

The Project would produce electricity in a manner that improves California's ability to supply renewable energy to end-use customers and to achieve statewide renewable energy goals. Electricity from the solar generating station would be used to serve the needs of California's customers and would facilitate compliance with California's RPS and CARB's 2022 Climate Change Scoping Plan.

The San Bernardino County 2021 RGHGRP includes GHG inventories, and local GHG reduction strategies for each partnership jurisdiction including the unincorporated areas of San Bernardino County. The RGHGRP demonstrates how unincorporated San Bernardino County could achieve its selected goal of reducing its GHG emissions to 40 percent below its 2020 GHG emissions level by 2030. The majority (approximately 80 percent) of unincorporated San Bernardino County's GHG reduction goal will be achieved through state efforts such as vehicle standards, the state's low carbon fuel standard, the RPS, and other state measures to reduce GHG emissions in the on-road, solid waste, and building energy sectors in 2030. According to the RGHGRP, the remaining 20 percent needed to meet its goal could be achieved "primarily through the following local measures, in order of reductions achieved: Solar Installation for Existing Commercial/Industrial (Energy-8); Waste Diversion and Reduction (Waste-2); Solar Installation for Existing Housing (Energy-7)."

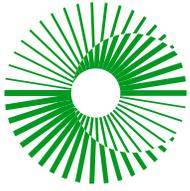
Further, the proposed Project is consistent with the GHG goals and policies in the San Bernardino Policy Plan, specifically NR-1.7, RE 2.1, RE 4.1 and RE 4.3.1.

The Project is consistent with the County's RGHGRP and County Policy Plan goal to encourage renewable energy, including solar facilities. The Project would be consistent with state and regional plans to reduce GHG emissions and would result in *no impact*.



*APPENDIX A*

*CALEEMOD SUMMARY AND DETAILED  
REPORT*



# ERM

ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING  
COUNTRIES AND TERRITORIES WORLDWIDE

|            |                 |
|------------|-----------------|
| Argentina  | The Netherlands |
| Australia  | New Zealand     |
| Belgium    | Peru            |
| Brazil     | Poland          |
| Canada     | Portugal        |
| China      | Romania         |
| Colombia   | Senegal         |
| France     | Singapore       |
| Germany    | South Africa    |
| Ghana      | South Korea     |
| Guyana     | Spain           |
| Hong Kong  | Switzerland     |
| India      | Taiwan          |
| Indonesia  | Tanzania        |
| Ireland    | Thailand        |
| Italy      | UAE             |
| Japan      | UK              |
| Kazakhstan | US              |
| Kenya      | Vietnam         |
| Malaysia   |                 |
| Mexico     |                 |
| Mozambique |                 |

**ERM's Irvine Office**

1920 Main Street  
Suite #300  
Irvine, CA 92614  
T +1 (949) 623 4700

**[www.erm.com](http://www.erm.com)**