3.3 Air Quality

This section examines the air quality in San Luis Obispo County, includes a summary of applicable air quality regulations, and analyzes potential air quality impacts associated with implementation of the Renewable Energy Streamlining Program (RESP or Program). This section is primarily based on applicable information provided by the County's Conservation and Open Space Element (COSE) (2010), which was adopted in 2010, the County EnergyWise Plan (2011), the San Luis Obispo County Air Pollution Control District's (SLOAPCD) CEQA Air Quality Handbook (2012), and the SLOAPCD's Clean Air Plan (2001).

3.3.1 PHYSICAL SETTING

San Luis Obispo County is part of the South Central Coast Air Basin (SCCAB), which also includes Santa Barbara and Ventura counties. Because air quality is influenced by topography and meteorological conditions as opposed to planning boundaries, this section discusses air quality at the overall county level, rather than by County planning area.

CLIMATE

The county's climate is characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures prevail most of the year due to the moderating influence of the Pacific Ocean. The effects of the Pacific Ocean are diminished inland by major intervening terrain features such as the coastal Santa Lucia Mountain Range.

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

During spring and early summer, when the Pacific High attains its greatest strength, the onshore winds pass over the cool water of the ocean, and fog and low clouds often form in the shallow marine air layer along the coast. Surface heating in the interior valleys partially dissipates this marine layer as it moves inland, although the marine layer influence is still observed inland toward the center of the county.

In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This offshore flow, along with the diurnal alteration of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, trapping pollutants near the surface.

This effect is intensified when the Pacific High weakens or moves inland to the east and may produce a Santa Ana condition in which air, often pollutant-laden, is transported into the county from the east and southeast. This condition can occur over a period of several days until the high-pressure system returns to its normal location, breaking the pattern. The breakup of this condition may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the post-Santa Ana condition lead to high ambient pollutant levels, but the pattern does play an important role in the county's air pollution meteorology.

Wintertime radiation inversions, which result from loss of surface heat to a clear, dark night sky, can severely limit vertical mixing of air pollutants emitted near the ground. In combination with smoke from open outdoor burning and the use of wood-fired stoves or fireplaces for residential heating, low wintertime radiation inversions can be a primary contributor to higher levels of particulate matter that have been measured in the Upper Salinas River Valley area. Low inversions and burning combine to leave a smoky haze over some North County Planning Area communities throughout much of the fall and winter.

AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources (predominantly mobile sources) are regulated by federal and state law. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), lead, and fugitive dust are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ground-level ozone (O_3), as differentiated from stratospheric ozone that constitutes the protective ozone layer, and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Other pollutants, such as carbon dioxide, a natural byproduct of animal respiration that is also produced in the combustion process, have been linked to such phenomena as climate change. While there are no adopted thresholds for their release, Assembly Bill (AB) 32 requires the state to reduce emissions to 1990 levels by 2020, which is discussed further in Section 3.7, Greenhouse Gases and Climate Change. These pollutants do not jeopardize the air basin's attainment status. Sources and health effects commonly associated with criteria pollutants are summarized in **Table 3.3-1**.

TABLE 3.3-1
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (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, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, 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. Damages rubber, some textiles and dyes.
Particulate Matter (PM10 & PM2.5)	Produced by 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).
Sulfur Dioxide (SO2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2011

AIR QUALITY

About 75 percent of the county's population and a corresponding proportion of the commercial and industrial facilities are located within the Coastal Plateau (Coastal Zone, North County (portion), San Luis Obispo, and South County (portion) Planning Areas). Because of higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher in this region than in other regions of the county.

The Upper Salinas River Valley (North County Planning Area), located in the north central part of the county, houses roughly 25 percent of the county's population. Historically, this region has experienced the highest ozone and particulate levels in the county. Transport of ozone precursors from the Coastal Plateau and from the San Joaquin Valley may contribute to this condition. The East County Plain (North County (portion), Carrizo, and South County (portion) Planning Areas) is the largest region by land area; however, less than 1 percent of the county population resides there. Dry land farming and unpaved roads in this region contribute to county totals for particulate emissions, but these emissions rarely affect other regions of the county.

Existing air quality and historical trends and projections in the county are documented by measurements made by the SLOAPCD, the local air pollution regulatory agency, who maintain air quality monitoring stations throughout the county. Air quality monitoring sites in the county are located at Atascadero, Carrizo Plains Elementary School, Morro Bay, Nipomo-Regional Park, Paso Robles, Red Hills, and San Luis Obispo. **Table 3.3-2** shows historical occurrences of O_3, PM_{10}, and $PM_{2.5}$ pollutant levels exceeding state and federal ambient air quality standards for the three-year period of 2011, 2012, and 2013 at all the listed monitoring stations except Morro Bay, since this station is located in the Coastal Zone Planning Area, which is not affected by the proposed Program. Ozone, PM_{10}, and $PM_{2.5}$ are the most important pollutants affecting the county.

Due to various meteorological factors, including wind, air pollutant measurements within the county are sometimes influenced from surrounding areas including the ocean (ship emissions) as well as air pollution generated in other counties.

TABLE 3.3-2
AMBIENT AIR QUALITY MONITORING DATA FOR SAN LUIS OBISPO COUNTY

Pollutant Standards	2011	2012	2013
Atascadero-Lewis Avenue Monitoring Station (North County Planning Area)			
Ozone			
Max 1-hour concentration (ppm)	0.073	0.083	0.073
Max 8-hour concentration (ppm) (state/federal)	0.064 / 0.063	0.070 / 0.070	0.070 / 0.070
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	0 / 0	0 / 0	0 / 0
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	76.4 / 75.9	64.7 / 62.8	58.2 / 59.0
Number of days above state/federal standard	* / 0	2.0 / 0	2.0 / 0
Fine Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	33.1 / 33.1	33.7 / 33.7	33.0 / 33.0
Number of days above federal standard	0	0	0
Red Hills Monitoring Station (North County Planning Area)			
Ozone			
Max 1-hour concentration (ppm)	0.086	0.090	0.087

Pollutant Standards	2011	2012	2013
Max 8-hour concentration (ppm) (state/federal)	0.081 / 0.080	0.088 / 0.087	0.082 / 0.081
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	19 / 3	33 / 10	12 / 3
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	* / *	* / *	* / *
Number of days above state/federal standard	* / *	* / *	* / *
Fine Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	* / *	* / *	* / *
Number of days above federal standard	* / *	* / *	* / *
Paso Robles-Santa Fe Avenue Monitoring Station (North County Planning Area)			
Ozone			
Max 1-hour concentration (ppm)	0.076	0.081	0.072
Max 8-hour concentration (ppm) (state/federal)	0.068 / 0.067	0.070 / 0.069	0.067 / 0.067
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	0 / 0	0 / 0	0 / 0
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	113.4 / *	61.3 / *	595.6 / 596.0
Number of days above state/federal standard	2.0 / *	2.0 / *	19.4 / *
Fine Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	* / *	* / *	* / *
Number of days above federal standard	* / *	* / *	* / *
Carrizo Plains School Monitoring Station (Carrizo Planning Area)			
Ozone			
Max 1-hour concentration (ppm)	0.090	0.083	0.073
Max 8-hour concentration (ppm) (state/federal)	0.080 / 0.079	0.086 / 0.085	0.074 / 0.074
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	11 / 5	18 / 3	3 / 0
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	* / *	* / *	* / *
Number of days above state/federal standard	* / *	* / *	* / *
Fine Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	* / *	* / *	* / *
Number of days above federal standard	* / *	* / *	* / *
Nipomo-Regional Park Monitoring Station (South County Planning Area)			

Pollutant Standards	2011	2012	2013
Ozone			
Max 1-hour concentration (ppm)	0.075	0.065	0.076
Max 8-hour concentration (ppm) (state/federal)	0.071 / 0.070	0.060 / 0.059	0.072 / 0.072
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	1 / 0	0 / 0	1 / 0
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	63.8 / 62.3	76.8 / 75.5	109.7 / 107.3
Number of days above state/federal standard	3.0 / 0	10.7 / 0	20.2 / 0
Fine Particulate Matter (*data derived from Nipomo-Guadalupe Road Monitoring Station*)			
Max 24-hour concentration (μg/m3) (state/federal)	24.1 / 24.1	36.9 / 36.9	32.0 / 32.0
Number of days above federal standard	0	1	0
San Luis Obispo-3220 South Higuera Street Monitoring Station (San Luis Obispo Planning Area)			
Ozone			
Max 1-hour concentration (ppm)	0.078	0.070	0.067
Max 8-hour concentration (ppm) (state/federal)	0.066 / 0.065	0.057 / 0.056	0.061 / 0.061
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	0 / 0	0 / 0	0 / 0
Coarse Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	91.7 / 21.1	102.1 / *	75.6 / 70.5
Number of days above state/federal standard	* / *	* / *	* / *
Fine Particulate Matter			
Max 24-hour concentration (μg/m3) (state/federal)	17.7 / 17.7	15.4 / 15.4	53.7 / 53.7
Number of days above federal standard	0	0	1

Source: CARB 2014a

Notes:

μg/m3 = micrograms per cubic meter; ppm = parts per million

** = No data is currently available from CARB to determine the value.*

As previously stated, ozone, PM_{10}, and $PM_{2.5}$ are the most important pollutants affecting the county. **Table 3.3-3** shows the state attainment status for the SCCAB and thus the county. Areas with air quality that exceed adopted air quality standards are designated as nonattainment areas for the relevant air pollutants. Areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. The region is nonattainment for state ozone and PM_{10} standards (CARB 2014b).

TABLE 3.3-3
FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS
FOR THE SAN LUIS OBISPO COUNTY PORTION OF THE SOUTH CENTRAL COAST AIR BASIN

Pollutant	Attainment Status
1-Hour Ozone (O_3)	Nonattainment
8-Hour Ozone (O_3)	Nonattainment
Coarse Particulate Matter (PM_{10})	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment
Carbon Monoxide (CO)	Attainment
Nitrogen Dioxide (NO_2)	Attainment
Sulfur Dioxide (SO_2)	Attainment

Source: CARB 2014b

Notes: The San Luis Obispo portion of the SCCAB is also designated nonattainment for ozone under federal Clean Air Act standards. State Implementation Plans (SIPs) must be prepared by states for areas designated as federal nonattainment areas to demonstrate how the area will come into attainment of the exceeded federal ambient air quality standard.

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. 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.

To date, the California Air Resources Board (CARB) has designated nearly 200 compounds as toxic air contaminants and has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, one of the most important in California being particulate matter from diesel-fueled engines. In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Naturally Occurring Asbestos

CARB has identified naturally occurring asbestos (NOA) as a toxic air contaminant. NOA occurs in rocks and soil as a result of natural geological processes. Natural weathering and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. NOA-bearing rock/soil has been identified in San Luis Obispo County.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation.

VALLEY FEVER

Valley fever (*Coccidioidomycosis*) is caused by the fungus *Coccidioides immitis*, which is commonly found within the soil in specific areas and can be stirred into the air by anything that disrupts the soil, such as farming, construction, and wind. The fungi can then be breathed into the lungs and cause valley fever. Valley fever is found in the southwestern United States including in Arizona, California, New Mexico, Nevada, and Utah, as well as in parts of Mexico. In about 50 to 75 percent of people, valley fever causes either no symptoms or mild symptoms and those infected never seek medical care; when symptoms are more pronounced, they usually are observed as lung problems (cough, shortness of breath, sputum production, fever, and chest pains). The disease can progress to chronic or progressive lung disease and may even become disseminated to the skin, lining tissue of the brain (meninges), skeleton, and other body areas. The disease can also infect many animal types (for example, dogs, cattle, otters, and monkeys).

From 1998 to 2011, the incidence in the United States increased about tenfold to about 22,000 diagnosed individuals per year, according to the Centers for Disease Control and Prevention. People are infected by inhaling dust contaminated with *Coccidioides*; the fungus is not transmitted from person to person. About 30–35 percent of people who develop valley fever have flu-like symptoms (fever, cough, malaise, and chills) that dissipate over about two to six weeks without treatment. Some people may develop additional symptoms such as shortness of breath, night sweats, headaches, sputum production, and joint and muscle pains (symptoms resembling pneumonia). Women, more often than men, may develop erythema nodosum (reddish, painful, tender lumps, usually on the legs) or erythema multiforme (an allergic reaction similar to erythema nodosum in multiple body sites with rash). Usually these symptoms resolve in about two to six weeks (MedicineNet 2014). Several antifungal drugs are available to treat valley fever. However, in general, dosage (especially pediatric), length of time of drug administration, and the choice of drug are best decided in consultation with an infectious disease specialist (MedicineNet 2014).

3.3.2 REGULATORY SETTING

STATE

California Air Resources Board (CARB)

CARB has jurisdiction over all air pollutant sources in the state; it delegated responsibility for stationary sources to local air districts and retained authority over emissions from mobile sources. The county's local air district is the SLOAPCD. Similar in concept to the national ambient air quality standards (NAAQS), CARB established the California ambient air quality standards (CAAQS). Comparing the criteria pollutant concentrations in ambient air to the CAAQS determines state attainment status for criteria pollutants in a given region. CARB, in partnership with local California air quality management districts, developed a pollutant-monitoring network to aid attainment of CAAQS. The network consists of numerous monitoring stations throughout California that monitor and report various pollutants' concentrations in ambient air.

California Clean Air Act

The California Clear Air Act (CCAA) went into effect in January 1, 1989, and was amended in 1992 (California Health and Safety Code, Division 26). The CCAA mandates achieving the health-based CAAQS at the earliest practical date.

Air Quality Standards

The State of California has established health-based ambient air quality standards (CAAQS) for 11 air pollutants. As shown in **Table 3.3-4**, these pollutants include O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 3.3-4
AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards
Ozone (O_3)	8 Hour	0.070 ppm (137μg/m^3)
	1 Hour	0.09 ppm (180 μg/m^3)
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 μg/m^3)
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 μg/m^3)
	3 Hour	—
	1 Hour	0.25 ppm (665 μg/m^3)
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 μg/m^3
	24 Hour	50 μg/m^3
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3
	24 Hour	N/A

Pollutant	Averaging Time	California Standards
Sulfates	24 Hour	25 $\mu g/m^3$
Lead (Pb)	Calendar Quarter	N/A
	30 Day Average	1.5 $\mu g/m^3$)
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 $\mu g/m^3$)
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	—

Source: CARB 2013

Notes: mg/m^3 = milligrams per cubic meter; ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter

Air Quality Attainment Plans

The California Clean Air Act of 1988 mandated the preparation of clean air plans that provide an overview of air quality and sources of air pollution and identify pollution-control measures needed to meet federal and state air quality standards. The SLOAPCD is responsible for formulating and implementing the clean air plan for San Luis Obispo County. The plan provides an overview of the regional air quality and sources of air pollution and identifies the pollution-control measures needed to meet clean air standards. The schedule for plan development is outlined by state and federal requirements and is influenced by regional air quality. Clean air plans affect the development of SLOAPCD rules and regulations and other programs. They also influence a range of activities outside the district, including transportation planning, allocation of money designated for air quality projects, and more.

Last adopted in March 2002, the SLOAPCD Clean Air Plan outlines the district's strategies to reduce O_3 precursor emissions from a wide variety of stationary and mobile sources. Analysis of several long-term air quality trends in the county demonstrates that O_3 air quality in the coastal and southern areas of the county appears to be improving, while air quality in the North County is declining. At the county level, transportation control measures and land use planning strategies play an important role in the implementation of the Clean Air Plan.

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Sher) to reduce public exposure to particulate matter (PM_{10} and $PM_{2.5}$, collectively referred to as PM). SB 656 required CARB, in consultation with local air pollution control districts, to develop and adopt a list of PM reduction strategies. The SLOAPCD adopted the PM Report and associated control measures in 2005. The report identifies PM control for five primary categories and associated measures. The categories include paved and unpaved roads, open burning, fugitive dust, refinery activities and use of furnaces, and particulate exhaust concentrations. The top five sources of direct PM_{10} emissions are area sources—unpaved road dust, paved road dust, construction and demolition, prescribed burning, and farming operations (dust). These sources contribute 77 percent of the total PM_{10} emissions in the county.

LOCAL

San Luis Obispo Air Pollution Control District

The SLOAPCD is the regional agency responsible for rulemaking, permitting, and enforcement activities affecting stationary sources in the county. The SLOAPCD monitors county air quality, reviews land use projects, develops and enforces rules and regulations, issues permits, and

creates long-term air quality plans for the county. The district works with government, industry, businesses, and the public to reduce air pollution from stationary sources, such as power plants, corner gas stations, and local dry cleaners. The SLOAPCD also implements programs to promote alternative means of transportation, such as carpooling, telecommuting, and use of clean vehicle technologies.

Specific rules and regulations adopted by the SLOAPCD limit the emissions that can be generated by various activities and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants but also toxic emissions and acutely hazardous non-radioactive materials emissions. Emissions sources subject to these rules are regulated through the SLOAPCD's permitting process and standards of operation. Through this permitting process, the SLOAPCD monitors generation of stationary emissions and uses this information in developing its air quality plans. Any sources of stationary emissions constructed as part of a proposed Program would be subject to SLOAPCD rules and regulations. Both federal and state ozone plans rely on stationary source control measures set forth in SLOAPCD rules and regulations. With respect to the construction activities associated with development instigated by the proposed Program, applicable SLOAPCD regulations would relate to architectural coatings (Rule 433, Architectural Coatings) and paving materials (Rule 420, Cutback Asphalt Paving Materials). With respect to the operational phase of a project, SLOAPCD Rule 601, New Source Performance Standards, would apply to any new or modified stationary sources in the county.

The SLOAPCD has established significance criteria that may be relied upon in order to make determinations concerning air quality impacts. According to the SLOAPCD, an air quality impact is considered significant if a proposed Program would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SLOAPCD has established thresholds of significance for air quality for construction and operational activities of land use development projects, as shown in **Table 3.3-5**.

TABLE 3.3-5
SLOAPCD SIGNIFICANCE THRESHOLDS

Air Pollutant	Construction Activities			Operations	
	Daily	Quarterly Tier 1	Quarterly Tier 2	Daily	Annual
Reactive Organic Gases (ROG) & Nitrogen Oxide (NO_x) Combined	137 lbs	2.5 tons	6.3 tons	25 lbs	25 tons
Diesel Particulate Matter (DPM)	7 lbs	0.13 tons	0.32 tons	1.25 lbs	NA
Fugitive Particulate Matter (PM_{10}), Dust	N/A	2.5 tons	N/A	25 lbs	25 tons
Carbon Monoxide (CO)	N/A	N/A	N/A	550 lbs	N/A

Source: SLOAPCD 2012

In terms of potential construction impacts, mitigation of such activities is required when the emission thresholds are equaled or exceeded by fugitive and/or combustion emissions. SLOAPCD construction mitigation measures are designed to reduce emissions (ROG, NOx, diesel particulate matter (DPM), and PM_{10}) from heavy-duty construction equipment and may include emulsified fuels, catalyst and filtration technologies, engine replacement, new alternative fueled trucks, and implementation of Construction Activity Management Plans (SLOAPCD 2012). The mitigation measures for construction activity are delineated in three separate sections:

- Standard Mitigation Measures
- Best Available Control Technologies (BACT) and Construction Activity Management Plans
  - Construction Activity Management Plans (CAMP)
  - Retrofit Devices and Alternative Fuels
  - Repowers
- Fugitive Dust Mitigation Measures (SLOAPCD 2012)

Construction-generated emissions from development projects that cannot be adequately mitigated with on-site mitigation measures alone would require off-site mitigation in order to reduce air quality impacts to a level of insignificance.

In addition, all construction activities are required to be managed in order to ensure that dust emissions are adequately controlled to below the 20 percent opacity limit identified in SLOAPCD Rule 401, Visible Emissions, and to ensure that dust is not emitted off-site. The correct fugitive dust mitigation program for a given project depends on the project scale or proximity to sensitive receptors. For example, development projects with grading areas that are less than 4 acres and that are not within 1,000 feet of any sensitive receptor must implement a set of SLOAPCD established mitigation measures from the SLOAPCD Fugitive Dust Mitigation Measures: Short List to minimize nuisance impacts and to significantly reduce fugitive dust emissions. Development projects with grading areas that are greater than 4 acres or are within 1,000 feet of any sensitive receptor are required to implement an expanded program of mitigation measures from the SLOAPCD Fugitive Dust Mitigation Measures: Expanded List.

In terms of potential operational air quality impacts, the SLOAPCD identified mitigation in order to reduce a project's emissions when thresholds are equaled or exceeded. Most of the long-term operational mitigation strategies suggested by the SLOAPCD focus on methods to reduce vehicle trips and travel distance, including site design standards which encourage pedestrian- and bicycle-friendly transit-oriented development (SLOAPCD 2012). In addition, the recommendations include design strategies for residential and commercial buildings that address energy conservation and other concepts to reduce total project emissions. According to the SLOAPCD (2012), project mitigation for operational impacts should follow the guidelines listed below.

- Projects with the potential to generate 25–29 pounds per day of combined ROG and NO_x or PM_{10} emissions should select and implement at least 8 mitigation measures from the SLOAPCD mitigation list.
- Projects generating 30–34 pounds per day of combined ROG and NO_x or PM_{10} emissions should select and implement at least 14 mitigation measures from the SLOAPCD mitigation list.
- Projects generating 35–50 pounds per day of combined ROG and NO_x or PM_{10} emissions should implement at least 18 measures from the SLOAPCD mitigation list.
- Projects generating 50 pounds per day or more of combined ROG and NO_x or PM_{10} emissions should select and implement all feasible measures from the SLOAPCD mitigation list. Further mitigation measures may also be necessary, including off-site measures, depending on the nature and size of the project and the effectiveness of the mitigation measures proposed.

- Projects generating 25 tons per year or more of combined ROG and NO_x or PM_{10} emissions will need to implement all feasible measures from the SLOAPCD mitigation list as well as off-site mitigation measures, depending on the nature and size of the project and the effectiveness of the on-site mitigation measures proposed.

The SLOAPCD also issues annual reports that address issues such as air quality summaries for each year as well as air quality trends.

County of San Luis Obispo General Plan

General Plan policies related to air quality are designed to help ensure that regional and local air quality is as healthful as possible. For instance, the County's Guiding Principles for Strategic Growth address the interconnection of land use, resource conservation, and quality of life, and the Land Use Element's Framework for Planning (Inland and Coastal) reflects the County's Strategic Growth principles and goals. The air quality goals, policies, and implementation strategies contained in the General Plan are compatible and consistent with the Strategic Growth principles and provide specific direction to achieve and maintain the county's desired air quality.

Land Use Element and Resource Management System

The General Plan Land Use Element contains the Resource Management System (RMS), which identifies the county's resource capacities as well as how those resources relate to future growth and development. The Land Use Element RMS contains air quality as a policy area. A biennial Summary Report is prepared evaluating each of the resources within specific communities, including air quality, and then recommends an alert level (Level of Severity), when applicable, after consideration of existing and/or foreseeable future conditions. When the harshest alert level is recommended (LOS III), it is then taken to the Board of Supervisors for an action, such as having a Resource Capacity Study prepared and/or certification of the recommended severity. Certification typically includes measures to resolve the identified problem(s).

In the most general terms, the goal of the RMS is to provide information in support of decisions about balancing land development and population growth with the air quality resources required to support them. The RMS operates on two distinct levels. Attention is first given to the development of the county as a whole. The Land Use Element guides population growth where it can be supported by existing resources, using the RMS as an information tool. The countywide perspective must persist throughout the analysis of community resources and recommendations for resource management measures.

The second level of the RMS is the community. Each community is evaluated with respect to resource availability and capacity, as well as the effects of community development on surrounding agricultural lands and rural areas. When an individual community is perceived to have a potential resource problem, steps must be taken to correct the situation and, if necessary, utilize various methods to redirect growth to communities that have the capability to support additional population (the harshest alert level currently in effect is LOS II for the North County Planning Area). The Land Use Element combines both perspectives described above in an effort to resolve issues of distribution and location rather than growth versus no growth.

According to the General Plan Land Use Element RMS, three different indicators can be used to track the status of air quality: ambient air monitoring data, emissions inventory information, and the remaining emission control measures available to reduce emissions within the air quality planning area.

Conservation and Open Space Element (COSE)

The COSE includes a wide range of goals for a many environmental issues, including air quality. The following identifies and generally summarizes these goals to improve the county's air quality:

- Goal AQ 1: Per capita vehicle miles traveled countywide will be reduced consistent with statewide targets.
- Goal AQ 2: The County will be a leader in implementing air quality programs and innovations.
- Goal AQ 3: State and federal ambient air quality standards will, at a minimum, be attained and maintained.
- Goal AQ 4: Greenhouse gas emissions from County operations and community-wide sources will be reduced from baseline levels by a minimum of 15 percent by 2020.
- Goal AQ 5: The County will adapt to adverse climate change.

Each of these goals is further developed into policies and implementation strategies. For instance, Conservation and Open Space Element Implementation Strategy AQ 3.1.1 requires coordination with the SLOAPCD to identify feasible, cost-effective, consistent, and comprehensive air quality mitigation measures and programs to reduce short-term, operational, and cumulative impacts of new development on air quality. Also, Implementation Strategy AQ 3.2.1 requires the use of the SLOAPCD's CEQA Guidelines to determine significance of impacts and to identify minimum project design and mitigation requirements.

County of San Luis Obispo Code Section 22.10.030 – Air Quality

Section 22.10.030 of the County Code establishes a procedure for the notification of the SLOAPCD when a new land use is proposed to include equipment or activities that involve combustion or the storage or use of hydrocarbons or other air contaminants. County Code Section 22.10.030 mandates that a copy of any development application be forwarded to the SLOAPCD for review. This referral is intended to enable the SLOAPCD to determine whether the proposed use is required by the rules and regulations of the SLOAPCD to obtain an authority to construct or permit to operate, if the proposed Program exceeds the district's significance thresholds for significant air quality impacts from land use projects, and if mitigations are required. The air district has developed a CEQA Handbook that defines these thresholds and mitigation measures, as previously described.

County of San Luis Obispo Code Section 22.52.160 – Construction Procedures

Section 22.52.160 of the County Code establishes standard measures for the control of fugitive dust emissions generated during construction activities. Section 22.52.160 requires that all surfaces and materials be managed to ensure that fugitive dust emissions are adequately controlled to below the 20 percent opacity limit, identified in the SLOAPCD's Rule 401, Visible Emissions, and to ensure that dust is not emitted off-site. Section 22.52.160 applies to surfaces that will be graded, that are currently being graded, or that have been graded and to all materials, whether filled, excavated, transported, or stockpiled. Required fugitive dust control measures include the following:

A. *All projects involving grading or site disturbance shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:*

(1) Reduce the amount of the disturbed area where possible;

(2) Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible;

(3) All dirt stock-pile areas shall be sprayed daily as needed; and

(4) All roadways, driveways, sidewalks, etc. to be paved shall be completed as soon as possible, and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

B. Projects with site disturbance that exceeds four acres or are within 1,000 feet of any sensitive receptor shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

(1) All measures identified in Subsection C.1.a;

(2) Permanent dust control measures identified in the approved project plans shall be implemented as soon as possible following completion of any soil disturbing activities;

(3) Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating native grass seed and watered until vegetation is established;

(4) All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the SLOAPCD;

(5) Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;

(6) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114;

(7) Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; and

(8) Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

In addition to these requirements, Section 22.52.160 addresses the potential to encounter NOA during construction by mandating that grading work comply with the CARB Asbestos Air Toxics Control Measure (ATCM) for construction and grading. This measure requires that prior to any grading activities in NOA candidate areas, the project proponent must ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the Air Pollution Control District. If

NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the SLOAPCD.

Summary of Local Regulations and Policies

Table 3.3-6 summarizes regulations and policies from the documents described above.

TABLE 3.3-6
LOCAL POLICIES AND REGULATIONS FOR AIR QUALITY

Applicable Code Section	Summary
Countywide	
Conservation and Open Space Element, Policy AQ 1.2	Require projects subject to discretionary review to minimize additional vehicle travel.
Conservation and Open Space Element, Policy AQ 2.2	Reduce employee work-related vehicle trips.
Conservation and Open Space Element, Policy AQ 3.1	Coordinate with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.
Conservation and Open Space Element, Policy AQ 3.2	Attain or exceed federal or state ambient air quality standards (the more stringent if not the same) for measured criteria pollutants.
Conservation and Open Space Element, Policy AQ 3.3	Avoid a net increase in criteria air pollutant emissions in planning areas certified as Level of Severity II or III for Air Quality by the County's Resource Management System (RMS).
Conservation and Open Space Element, Policy AQ 3.4	Minimize public exposure to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead.
Conservation and Open Space Element, Policy AQ 3.5	Ensure that land use decisions are equitable and protect all residents from the adverse health effects of air pollution.
Conservation and Open Space Element, Policy AQ 3.6	Ensure that implementation of the Strategic Growth principles and goals are balanced with protection of sensitive receptors near high-volume transportation routes and sources of toxic emissions (i.e., rail yards, downtown centers, gasoline development facilities, chrome platers, dry cleaners, and refineries).
Conservation and Open Space Element, Policy AQ 3.7	Encourage the reduction of heavy-vehicle idling throughout the county, particularly near schools, hospitals, senior care facilities, and areas prone to concentrations of people, including residential areas.
Land Use and Circulation Element, Principle 1, Policy 4	Preserve and protect the air quality of the county by seeking to exceed or at least maintain the minimum state and federal ambient air quality standards.
County Code Title 22, Section 22.10.030	A copy of any development application shall be forwarded to the SLOAPCD for review with the intent to enable the SLOAPCD to determine if the use proposed is required to obtain an authority to construct or permit to operate, if the proposed project exceeds the district's significance thresholds for significant air quality impacts from land use projects, and if mitigations are required, as previously described.
County Code Title 22, Section 22.52.160	Establishes standard measures for the control of fugitive dust emissions generated during construction activities as described above.

Applicable Code Section	Summary
Carrizo Planning Area	
No additional policies or standards for the Carrizo Planning Area.	
North County Planning Area	
No additional policies or standards for the North County Planning Area.	
San Luis Obispo Planning Area	
No additional policies or standards for the San Luis Obispo Planning Area.	
South County Planning Area	
No additional policies or standards for the South County Planning Area.	

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

An air quality impact is considered significant if implementation of the RESP would result in any of the following:

1) Violate any state or federal ambient air quality standard, or exceed air quality emission thresholds as established by San Luis Obispo County Air Pollution Control District.

2) Expose any sensitive receptor to substantial air pollutant concentrations.

3) Create or subject individuals to objectionable odors.

4) Be inconsistent with the district's Clean Air Plan.

5) Result in a cumulatively considerable net increase of any criteria pollutant either considered in nonattainment under applicable state or federal ambient air quality standards that are due to increased energy use or traffic generation, or intensified land use change.

The reader is referred to Section 3.7, Greenhouse Gases and Climate Change, for a discussion of potential impacts associated with greenhouse gas generation.

METHODOLOGY

The impact analysis below utilizes the County of San Luis Obispo's General Plan policy provisions, development standard provisions of the County Code, and SLOAPCD guidance to determine whether implementation of the proposed RESP would result in a significant environmental air quality impact.

PROJECT IMPACTS AND MITIGATION MEASURES

Violate Any State or Federal Ambient Air Quality Standard, or Exceed Air Quality Emission Thresholds as Established by County Air Pollution Control District (Threshold 1)

Long-Term Operational Emissions

The renewable energy-generating facilities allowed under the proposed Program produce energy that is relatively emissions-free. One of the obvious benefits of solar and wind energy is that the production of electricity from these sources involves zero direct air pollutant emissions, with the exception of minimal emissions from worker trips and equipment usage associated with ongoing operations, maintenance, repair, and security. As discussed in Section 3.12, Effects Determined Not Significant, implementation of solar electric facilities (SEFs) and (wind energy conversion system (WECS) facilities would require a variety of transportation activities over the life of a project. Ongoing operations and maintenance of renewable energy-generating facilities would require worker commutes and deliveries of supplies.

Short-Term Construction Emissions

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and NO_X) and emissions of coarse and fine particulate matter. Emissions of ozone precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne particulate matter are largely associated with ground-disturbing activities, such as those occurring during site preparation.

The quantity of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment used to implement solar electric facilities (SEFs) and wind energy conversion system (WECS) facilities allowed under the project would depend on the number of vehicles used and the hours of operation. The significance of fugitive dust (particulate matter) emissions would vary widely and would depend on the following factors: the aerial extent of disturbed soils and the length of disturbance time; whether existing structures are demolished; whether excavation is involved; and whether transport of excavated materials off-site is necessary. The level of hydrocarbon emissions generated by oil-based substances, such as asphalt, is dependent on the type and amount of substance used.

Potential impacts resulting from the exposure of valley fever and/or naturally occurring asbestos are evaluated under Threshold 2.

Impact 3-3-1 – Solar/Wind Implementation of the proposed Program could violate state or federal ambient air quality standards and exceed county air quality emission thresholds. This impact is considered a **less than significant (Class III)** impact.

Solar energy projects developed under the project would include solar photovoltaic panels mounted on rooftops of other structures as well as small to medium-sized ground-mounted systems. In addition to solar panels, solar photovoltaic projects typically include DC to AC inverters and transformers, additional electrical equipment, an interconnection or generation tie (gen-tie) line, telecommunications equipment, potentially a meteorological data collection system, switchgear buildings or structures, and security fencing. While some air pollutant emissions would be generated during the operation of renewable energy facilities from worker

trips and equipment usage associated with ongoing operations, maintenance, repair, and security, such emissions would be negligible. As stated in Section 2.0, Project Description, it is likely that up to 3 personnel would be required to service and maintain each Tier 1 SEF, Tier 2 SEF, and Tier 3 SEF facility. This would be comparable to about ½ the trips expected from one single family residence which would be considered a less than significant contribution to air emissions.

Construction of a rooftop solar project would occur entirely on top of a pre-existing structure and would occur within a built environment. Construction activities would include drilling, hammering, installation, and other activities, but they would be confined to the built environment footprint or a nearby laydown area. Rooftop construction would likely take one to two weeks, although the construction time and size of the workforce is directly related to the size of the roof and system. Additional time would be needed for pre- and post-permitting activities and inspections.

The proposed Program would also allow WECS facilities that are mounted to rooftops of existing structures. Small-scale wind projects generally comprise a rotor, generator, or alternator mounted on a frame, a tail, and a tower. Construction of these facilities would occur entirely on top of a pre-existing structure and would occur within a built environment. Construction activities would include drilling, hammering, installation, and other activities, but they would be confined to the built environment footprint or a nearby laydown area. Rooftop construction would likely take one to two weeks, although the construction time and size of the workforce is directly related to the size of the roof and system. Additional time would be needed for pre- and post-permitting activities and inspections.

Prior to beginning construction of a ground-mounted solar energy system, geotechnical testing would be required to establish the suitability of the site for construction and technology. For larger projects, up to a maximum of 160 acres in size, new access roads may be needed. Vegetation clearance and site grading may occur throughout the entire project site, although it is common for project design to result in minimal grading. Decommissioning of facilities would involve removal of all aboveground facilities and gravel work pads and roads. Subsurface facilities would be removed to a minimum depth of 3 feet from the surface and otherwise abandoned in place. Dismantled components would be staged at laydown areas before removal to disposal, reclamation, or recycling facilities. Reclamation of laydown areas, substations, access roads, and other disturbed areas would commence immediately upon completion of the dismantlement of the system. Soil remediation or landscaping would likely be required to return the location to pre-project conditions. The most likely heavy equipment used during these activities would include bulldozers, graders, excavators, scrapers, front-end loaders, and trucks, although other equipment may be needed depending on site conditions.

Permanent buildings may be required depending on the size of the facilities. Smaller facilities, such as those permitted in Tier 1 SEF and Tier 2 SEF would be less likely to have a permanent building, compared with Tier 3 SEF projects. Construction for Tier 1 SEF, Tier 2 SEF, and Tier 3 SEF projects is likely to take less than one year and for smaller projects, closer to six months. For a Tier 3 SEF project, construction personnel would average approximately 40 personnel. Tier 1 and Tier 2 SEF projects would average fewer personnel depending on the construction schedule and phasing.

While it is not possible to establish the exact proportion of the proposed Program that would be solar projects and wind projects, current renewable energy trends and the renewable resources in the county were considered, and it is assumed that the majority of renewable energy facilities allowed under the proposed Program would be solar projects, with minor numbers of wind projects. The total land footprint assumed for development of these projects is 1,500 acres. For the purposes of this analysis, it is assumed that development of these 1,500 acres would occur over a period of 10 years.

Since the actual phasing of future facilities allowed under the proposed Program is not known at this time, construction-related emissions were modeled to account for the greatest amount of disturbance proposed for a single Tier 3 SEF project (160 acres) in order to estimate the air pollutants resulting from the largest-scaled project allowed under the Program. Predicted maximum construction-generated emissions are summarized in **Table 3.3-7** and compared with SLOAPCD significance thresholds. Since the greatest amount of disturbance proposed for a single Tier 3 project would be greater than 4 acres or more than 1,200 cubic yards of material moved in a day, **Table 3.3-7** accounts for the SLOAPCD requirement to implement an expanded program of mitigation measures from the SLOAPCD Fugitive Dust Mitigation Measures: Expanded List; specifically, the application of water on the construction site, limitation of vehicle speed on unpaved roads, application of dust suppressants, daily cleaning of adjacent paved roads, and installation of wheel washers where vehicles enter and exit unpaved roads onto streets.

The projected criteria pollutant emissions resulting from construction activities were estimated by PMC using the California Emissions Estimator Model (CalEEMod). 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. CalEEMod contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available. Results of the modeling are included in **Appendix 3.3**.

TABLE 3.3-7
PROJECT TIER 3 CONSTRUCTION EMISSIONS (MAXIMUM 160 ACRES)

Construction Phase (based on the disturbance of 160 acres of land over a one-year period)	Ozone Precursors (ROG & NOx combined)	Diesel Particulate Matter[1]	Fugitive Particulate Matter Dust[2]
Construction Emissions – Maximum Pounds per Day	83.57	6.87	9.43
SLOAPCD Daily Significance Thresholds	**137 lbs**	**7 lbs**	**None**
Exceed Daily Thresholds?	No	No	No
Construction Emissions – Tons per Quarter[3]	1.99	0.09	0.77
SLOAPCD Quarterly Tier 1 Significance Thresholds[4]	**2.5 tons**	**0.13 tons**	**2.5 tons**
SLOAPCD Quarterly Tier 2 Significance Thresholds[4]	**6.3 tons**	**0.32 tons**	**None**
Exceed Quarterly Tier 1 or 2 Thresholds?	No	No	No

*Source: Emissions modeled by PMC using the CalEEMod computer program. Emission projections account for implementation of the SLOAPCD's Fugitive Dust Mitigation Measures: Expanded List. See **Appendix 3.3** for modeling outputs.*

[1] Diesel particulate matter accounts for both exhaust PM_{10} and exhaust $PM_{2.5}$.

[2] Fugitive particulate matter dust accounts for both fugitive PM_{10} and fugitive $PM_{2.5}$.

*[3] Annual emissions outputs presented in **Appendix 3.3** are divided by 4 in order to identify quarterly emissions.*

[4] Quarterly Tier 1 and Tier 2 Thresholds apply to construction projects lasting more than one quarter of the year (3 months). As stated in Section 2.0, Project Description, individual SEF and WECS facilities are estimated to be constructed in 6 months to a year. Additionally, this table accounts for construction activity assumed to be implemented in a one-year time span.

As shown in **Table 3.3-7**, construction emissions associated with the greatest amount of disturbance proposed for a single Tier 3 SEF project (160 acres) would not exceed SLOAPCD daily significance thresholds. However, although the largest individual Tier 3 projects may not generate significant short-term emissions, it is possible that several renewable energy projects instigated by the proposed Program would be under construction simultaneously and would generate cumulative construction emissions that could exceed thresholds and impact air

quality. Therefore, construction-related air quality impacts generated by implementation of the proposed Program are considered potentially significant. As previously stated, the SLOAPCD has developed construction mitigation measures that are designed to reduce air pollutant emissions from construction activities. According to the SLOAPCD, measures should be applied as necessary to reduce construction impacts below the significance thresholds. Construction-generated emissions from development projects that cannot be adequately mitigated with on-site mitigation measures alone would require off-site mitigation in order to reduce air quality impacts to a level of insignificance.

As previously stated, County Code Sections 22.10.030 and 22.60.050.B mandates that a copy of any development application, including future renewable energy projects under the proposed Program, be forwarded to the SLOAPCD for review. This referral is intended to enable the SLOAPCD to determine whether the proposed use exceeds the district's significance thresholds for significant air quality impacts from development projects and if mitigations are required. In the case that the SLOAPCD determines that a development could exceed construction level significance thresholds, SLOAPCD's Standard Mitigation Measures are required. These include the following requirements:

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Fuel all off-road and portable diesel-powered equipment with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation.
- Use on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation.
- Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g., captive or NOx exempt area fleets) may be eligible by proving alternative compliance.
- All on- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit.
- Diesel idling within 1,000 feet of sensitive receptors is not permitted.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.
- Electrify equipment when feasible.
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.

If the estimated emissions from the actual fleet for a given construction phase are expected to still exceed the SLOAPCD thresholds of significance after the Standard Mitigation Measures are factored into the estimation, then Best Available Control Technology (BACT) is required to be implemented to further reduce these impacts. The SLOAPCD BACT measures can include:

- Further reducing emissions by expanding use of Tier 3 and Tier 4[1] off-road and 2010 on-road compliant engines.
- Repowering equipment with the cleanest engines available.
- Installing California Verified Diesel Emission Control Strategies.

If the estimated construction emissions are still expected to exceed SLOAPCD thresholds of significance after the Standard Mitigation Measures and BACT measures are factored into the estimation, then a SLOAPCD-approved Construction Activity Management Plan (CAMP) and off-site mitigation are required to be implemented in order to reduce potential air quality impacts to a level of insignificance. The CAMP is required to be submitted to the SLOAPCD for review and approval prior to the start of construction and needs to include, but is not limited to, the following elements:

- A Dust Control Management Plan that encompasses all, but is not limited to, SLOAPCD dust control measures.
- Tabulation of on- and off-road construction equipment (age, horsepower, and miles and/or hours of operation).
- Schedule construction truck trips during non-peak hours to reduce peak hour emissions.
- Limit the length of the construction workday period, if necessary.
- Phase construction activities, if appropriate.

If, after all of the above is implemented and thresholds still exceeded, and off-site fee program is also available. The current off-site mitigation rate is $16,000 per ton of ozone precursor emission (NOx and ROG) over the SLOAPCD threshold calculated over the length of the expected exceedance. The applicant may use these funds to implement SLOAPCD-approved emission reduction projects near the project site or may pay that funding level plus an administration fee to the SLOAPCD to administer emission reduction projects in close proximity to the project. Examples of off-site mitigation strategies include, but are not limited to, the following:

- Fund a program to buy and scrap older heavy-duty diesel vehicles or equipment.
- Replace/repower transit buses.
- Replace/repower heavy-duty diesel school vehicles (i.e., bus, passenger, or maintenance vehicles).

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[1] NO_x emissions are primarily associated with use of diesel-powered construction equipment (e.g., graders, excavators, rubber-tired dozers, tractor/loader/backhoes). The Clean Air Act of 1990 directed the EPA to study, and regulate if warranted, the contribution of off-road internal combustion engines to urban air pollution. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the EPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the EPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards.

On May 11, 2004, the EPA signed the final rule introducing Tier 4 emission standards, which are currently phased-in over the period of 2008-2015. The Tier 4 standards require that emissions of PM and NOx be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be manufactured to Tier 4 standards.

- Retrofit or repower heavy-duty construction equipment, or on-road vehicles.
- Repower or contribute to funding clean diesel locomotive main or auxiliary engines.
- Purchase verified diesel emission control systems (VDECs) for local school buses, transit buses, or construction fleets.
- Install or contribute to funding alternative fueling infrastructure (i.e., fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.).
- Fund expansion of existing transit services.
- Replace/repower marine diesel engines.

The SLOAPCD has developed construction mitigation measures, including off-site mitigation, which are designed to reduce air pollutant emissions from construction activities and can be applied as necessary to reduce construction impacts below the significance thresholds. This process ensures that all future renewable energy projects instigated by the proposed Program will be mitigated to levels of insignificance in terms of air quality. For these reasons, future renewable energy facilities under the proposed Program would be **less than significant (Class III)**.

Impact 3-3-1 – Policy Changes Implementation of the proposed Program could result in changes to countywide policies that could indirectly violate state or federal ambient air quality standards or exceed county air quality emission thresholds. This impact is considered **less than significant (Class III)**.

The implementation of the proposed policy changes to the General Plan would enable streamlined reviews and approvals of SEF and WECS facility projects to be achieved either through the building permit process, zoning clearance process, or site plan review process. Once operational, these facilities produce emissions-free energy with the exception of negligible emissions from worker trips and equipment usage associated with ongoing operations, maintenance, repair, and security. SEF and WECS facility projects result in a net reduction of emissions, especially when compared to other energy producers such as fossil fuel–based power plants. This would be considered a beneficial impact regionally and statewide.

As shown in **Table 3.3-7**, construction emissions associated with the greatest amount of disturbance proposed for a single Tier 3 SEF project (160 acres) would not exceed SLOAPCD daily significance thresholds. While it is possible that several renewable energy projects instigated by the proposed Program would be under construction simultaneously and would generate cumulative construction emissions that could exceed thresholds and impact air quality, the SLOAPCD has developed construction mitigation measures, including off-site mitigation, which are designed to reduce air pollutant emissions from construction activities and can be applied as necessary to reduce construction impacts below the significance thresholds. Therefore, this impact is **less than significant (Class III).**

Expose Any Sensitive Receptor to Substantial Air Pollution Concentrations (Threshold 2)

Toxic Air Contaminants

None of the actions proposed as part of the proposed Program would result in a major source of toxic air contaminant concentrations, which include industrial processes (e.g., petroleum refining and chrome-plating operations), commercial operations (e.g., gasoline stations and dry

cleaners), and substantial amounts of motor vehicle exhaust (e.g., distribution centers and warehouses). One of the benefits of solar and wind energy is that the production of electricity from these sources involves negligible emissions of air pollutants. In contrast, fossil fuel–fired electric generation from coal, oil, or natural gas results in substantial direct emissions of numerous air pollutants that have adverse impacts on public health and the environment. Electric generation from fossil fuel–fired power plants, including natural gas power plants, is a leading source of air emissions that harm human health—resulting in 22 percent of NOx emissions, 69 percent of sulfur dioxide (SO_2) emissions, and 40 percent of mercury emissions in the United States (DOE 2008), all of which are considered toxic. Other toxic pollutants emitted from fossil-fueled power plants include volatile organic compounds (e.g., benzene, dioxins) and heavy metals (e.g., arsenic, lead). Health experts have documented that pollutants from fossil-fueled power plants result in a wide range of serious health effects. These adverse health effects include lung cancer and other respiratory diseases (e.g., asthma), other carcinogenic effects, neurotoxic effects, and elevation of heart disease risks (DOE 2008). Renewable energy-generating facilities do not produce these types of toxic emissions.

Construction and Naturally Occurring Asbestos

Construction associated with implementation of solar energy and wind energy projects and decommissioning would result in the generation of diesel particulate matter emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction or decommissioning activities. In addition, naturally occurring asbestos (NOA), contained in serpentine and ultramafic rock, has been identified by the SLOAPCD as potentially occurring in several areas throughout the county. As previously stated, CARB has identified NOA as a toxic air contaminant, and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation.

Construction and Valley Fever

In addition, as discussed previously, valley fever (*Coccidioidomycosis*) is found in California, including San Luis Obispo County. *Coccidioidomycosis* is commonly found within the soil in specific areas and can be stirred into the air by anything that disrupts the soil, such as farming, construction, and wind. The California Department of Public Health (2013, p. 2) considers San Luis Obispo County a highly endemic area for valley fever. When soil containing this fungus is disturbed by construction activities such as digging or grading, by vehicles raising dust, or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get valley fever. Fungal spores are small particles that can grow and reproduce in the body. The highest infection period for valley fever occurs during the dry months in California between June and November (CDPH 2013, p. 2). Infection from valley fever during construction can be partially mitigated through the control of construction-generated dust.

Impact 3-3-2 – Solar/Wind Implementation of the proposed Program could result in exposure of a sensitive receptor to substantial air pollution concentrations. This is a **less than significant (Class III)** impact.

As stated, none of the actions proposed as part of the proposed Program would result in a major source of toxic air contaminant concentrations, which include industrial processes (e.g., petroleum refining and chrome-plating operations), commercial operations (e.g., gasoline stations and dry cleaners), and substantial amounts of motor vehicle exhaust (e.g., distribution centers and warehouses). One of the benefits of solar and wind energy is that the production of electricity from these sources involves negligible emissions of air pollutants.

As stated under Threshold 1, construction associated with implementation of solar and wind energy projects would result in the generation of diesel particulate matter emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. Concentrations of mobile-source diesel particulate matter emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005).

In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The use of diesel-powered construction equipment associated with development of solar and wind energy generation projects would be temporary and episodic and would occur over several locations isolated from one another. Furthermore, development under the proposed Program would be subject to, and would comply with, Title 13, Section 2449(d)(3) of the California Code of Regulations (California State Heavy-Duty Vehicle Idling Emission Reduction Program), which limits idling of diesel-fueled off-road equipment to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable diesel particulate matter emissions.

Furthermore, as previously stated larger development projects would be required to comply with SLOAPCD BACT measures requiring the use of Tier 3 and Tier 4 construction equipment which substantially reduce the amount of generated exhaust emissions. In addition, County Code Section 22.52.160, Construction Procedures, establishes measures to address potential impacts to sensitive receptors within 1,000 feet of most construction sites, as described under the Regulatory Setting subsection above. County Code Section 22.60.050 also calls for APCD review of site plans. For these reasons and because diesel fumes disperse rapidly over relatively short distances, diesel particulate matter generated by construction activities, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors, the statewide significance threshold (please refer to Section 3.8, Hazards and Hazardous Materials, for a discussion on potential impacts to construction workers).

As previously stated, the SLOAPCD has identified areas throughout the county where NOA may be present. Construction activities that result in the disturbance of NOA-containing soils can result in the airborne entrainment of asbestos. The California Department of Conservation's (2000) *A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos* identifies NOA-containing soils present exclusively in the Coastal Zone of the county, which is not affected by the proposed Program. Furthermore, County Code Section 22.52.160 addresses the potential to encounter NOA during grading by mandating that prior to any grading activities in NOA candidate areas, the project proponent must prepare a geologic evaluation to determine whether NOA is present within the area that will be disturbed.

If NOA is not present, an exemption request must be filed with the SLOAPCD. If NOA is found, the project applicant would be required to comply with the requirements listed in CARB's Asbestos Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. These CARB requirements mandate that all construction occurring in an area with NOA-containing soils prepare and submit an Asbestos Dust Mitigation Plan for approval by the local air district. The Asbestos Dust Mitigation Plan must identify asbestos dust mitigation measures that would include, but would not be limited to, the following (CARB 2008):

- Construction vehicle speed at the work site must be limited to 15 miles per hour or less.
- Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line.
- Areas to be graded or excavated must be kept adequately wetted to prevent visible emissions from crossing the property line.
- Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
- Equipment must be washed down before moving from the property onto a paved public road.
- Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within 24 hours.

For these reasons, potential impacts from NOA would be less than significant.

As discussed previously, valley fever (*Coccidioidomycosis*) is found in California, including San Luis Obispo County. In about 50 to 75 percent of people, valley fever causes either no symptoms or mild symptoms and those infected never seek medical care; when symptoms are more pronounced, they usually present as lung problems (cough, shortness of breath, sputum production, fever, and chest pains). The disease can progress to chronic or progressive lung disease and may even become disseminated to the skin, lining tissue of the brain (meninges), skeleton, and other body areas.

The California Department of Public Health (2013, p. 2) considers San Luis Obispo County a highly endemic area for valley fever. When soil containing this fungus is disturbed by construction activities such as digging or grading, by vehicles raising dust, or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get valley fever. Fungal spores are small particles that can grow and reproduce in the body. The highest infection period for valley fever occurs during the dry months in California between June and November (CDPH 2013, p. 2).

Infection from valley fever during construction can be partially mitigated through the control of construction-generated dust. As noted, construction-generated dust would be controlled by adhering to the mandatory requirements of the SLOAPCD Fugitive Dust Mitigation Measures. In addition, the California Department of Public Health provides recommendations for reducing the potential for valley fever infection during construction activities. These measures are identified under Impact 3-8-2 of Section 3.8, Hazards and Hazardous Materials.

This impact is **less than significant (Class III).**

Impact 3-3-2 – Policy Changes Implementation of the proposed Program could result in changes to countywide policies and could result in the exposure of a sensitive receptor to substantial air pollution concentrations. This impact is **less than significant (Class III)**.

The implementation of the proposed policy changes to the General Plan would enable streamlined reviews and approvals of eligible SEF and WECS projects to be achieved either through the building permit process, zoning clearance process, or site plan review process. As discussed above in Impact 3-3-2 – Solar/Wind, although there are pollutant emissions associated with implementation of the Program, they would not be significant. Associated county policy

changes would be updated for consistency with the objectives of this streamlining effort. Therefore, impacts are **less than significant (Class III).**

Create or Subject Individuals to Objectionable Odors (Threshold 3)

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Impact 3-3-3 – Solar/Wind Implementation of proposed solar and wind energy facilities could result in projects that would include sources of odors which could affect surrounding land uses. This impact is **less than significant (Class III)**.

The development allowed under the proposed Program would not result in the installation of any equipment or processes that would be considered major odor emission sources. However, activities associated with construction activities would involve the use of a variety of gasoline- or diesel-powered equipment that would emit exhaust fumes. While exhaust fumes, particularly diesel exhaust, may be considered objectionable by some people, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly with increasing distance from the source. The construction phase is a short-term condition lasting a week to a year depending on the size of the facility. In addition, County Code Section 22.52.160, Construction Procedures, establishes measures to address potential impacts to sensitive receptors within 1,000 feet of most construction sites, as described under the Regulatory Setting subsection above. As a result, potential exposure of sensitive receptors to odors associated with proposed Program would be considered **less than significant (Class III).**

Impact 3-3-3 – Policy Changes Implementation of the proposed Program could result in changes to countywide policies and could result in projects that would include substantial or long-term sources of odors which could affect surrounding land uses. This is a **less than significant (Class III)** impact.

The implementation of the proposed policy changes to the General Plan would enable streamlined reviews and approvals of SEF and WECS facility projects to be achieved either through the building permit process, zoning clearance process, or site plan review process. These facilities would not require any equipment or processes that would be considered major odor emission sources. This impact is **less than significant (Class III)**.

Be Inconsistent with the District's Clean Air Plan (Threshold 4)

The SLOAPCD adopted the Clean Air Plan in January 1992; the plan was updated in 1998 and again in 2001. The Clean Air Plan is a comprehensive planning document designed to reduce emissions from traditional industrial and commercial sources, as well as from motor vehicle use. The plan's purpose is to address the attainment and maintenance of state and federal ambient air quality standards by following a comprehensive set of emission control measures within the Clean Air Plan.

Compliance with the Clean Air Plan helps to ensure that long-term trends in air quality improvements are not disrupted. The plan contains measures that local governments can implement so land use or transportation decisions do not contribute to urban sprawl or increased dependence on automobile use. According to SLOAPCD (2012), a project would conflict with or obstruct implementation of the Clean Air Plan if the proposed Program is inconsistent with the land use and transportation control measures and strategies outlined in the plan. If the project does not conflict or inhibit these measures, the project is considered consistent with the Clean Air Plan.

Impact 3-3-4 – Solar/Wind Implementation of proposed solar and wind energy facilities could conflict with the SLOAPCD 2001 Clean Air Plan. This is a **less than significant (Class III)** impact.

Air pollutants emitted into the ambient air of the county are emitted primarily by mobile sources (traffic) during construction and operational activities. As stated under Threshold 1, while there would be some air pollutant emissions generated during the operations of renewable energy facilities from worker trips and equipment usage associated with ongoing operations, maintenance, repair, and security, such emissions would be negligible. This is because it is likely that up to 3 personnel would be required to service and maintain each Tier 1 SEF, Tier 2 SEF, and Tier 3 SEF facility, which represents a level of activity that would result in negligible air pollutant emissions.

As also stated under Threshold 1, the SLOAPCD has developed construction mitigation measures, including off-site mitigation, which are designed to reduce air pollutant emissions from construction activities and associated construction worker commutes (for a Tier 3 SEF project, construction personnel would average approximately 40 personnel, and Tier 1 and Tier 2 SEF projects would average fewer personnel depending on the construction schedule and phasing) and can be applied as necessary to reduce construction impacts below the significance thresholds. For these reasons, future construction of renewable energy facilities under the proposed Program would be less than significant in terms of air quality. In addition, the renewable energy-generating facilities allowed under the proposed Program produce energy that is largely emissions-free. One of the obvious benefits of solar and wind energy is that the production of electricity from these sources involves almost no direct air pollutant emissions, with the exception of negligible emissions from worker trips and equipment usage associated with ongoing operations, maintenance, repair, and security. By nature, these facilities do not produce air pollutant emissions; regionally speaking, they reduce emissions by decreasing the need for energy from fossil fuel–based power plants, which is considered a beneficial impact.

For these reasons the proposed Program would not conflict with or inhibit the Clean Air Plan measures that address state and federal ambient air quality standards. Additionally, **Table 3.3-8** presents a comparison of the proposed Program (SEF facilities and wind energy conversion systems) to the specific Clean Air Plan policy provisions intended to address air quality standards. As shown in **Table 3.3-8**, the proposed Program would not conflict with the SLOAPCD Clean Air Plan.

TABLE 3.3-8
PROPOSED PROGRAM COMPARISON WITH CLEAN AIR PLAN POLICIES

Clean Air Plan Policies (Policy Reference)	Proposed Program
Campus Trip Reduction Program: This control measure requires the development of individual programs tailored to meet the trip reduction needs of the California Polytechnic State University, San Luis Obispo (Cal Poly) and Cuesta College campuses.	Not applicable.
Voluntary Commute Options Program: This measure is designed to reduce the number of commute and other trips made with single-occupant vehicles through an outreach effort to employers to encourage voluntary participation in a worksite trip reduction program.	Not applicable. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, construction of SEF and WECS facilities would vary in size resulting in a maximum 40 construction personnel during a Tier 3 SEF project (Tier 1 and Tier 2 SEF projects would average fewer personnel depending on the construction schedule and phasing). This limited amount of additional traffic would not result in significant impacts on local roadways and furthermore would be temporary and cease once construction is complete. Similarly, ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies. However, given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations.
Local Transit System Improvements: This measure focuses on improving local transit service and infrastructure. These improvements can encourage individuals to use public transit instead of private automobiles.	Not applicable. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, construction of SEF and WECS facilities would vary in size resulting in a maximum 40 construction personnel during a Tier 3 SEF project and fewer for all other renewable energy projects. This limited amount of additional traffic would not result in significant impacts on local roadways and furthermore would be temporary and cease once construction is complete. Similarly, ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies. However, given the small number of traffic trips generated by operations of renewable energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations.
Regional Public Transit Improvements: The focus of this measure is on service and facility improvements for commuters, including intercity rail improvements as a trip reduction strategy.	Not applicable. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, construction of SEF and WECS facilities would vary in size resulting in a maximum 40 construction personnel during a Tier 3 SEF project and fewer for all other renewable energy projects. This limited amount of additional traffic would not result in significant impacts on local roadways and furthermore would be temporary and cease once construction is complete. Similarly, ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies. However, given the small number of traffic trips generated by operations of renewable energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations.

Clean Air Plan Policies (Policy Reference)	Proposed Program
Bicycling and Bikeway Enhancements: The goal of this measure is to achieve a countywide average bicycle modal share of 5 percent.	Not applicable. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, construction of SEF and WECS facilities would vary in size resulting in a maximum 40 construction personnel during a Tier 3 SEF project and fewer for all other renewable energy projects. This limited amount of additional traffic would not result in significant impacts on local roadways and furthermore would be temporary and cease once construction is complete. Similarly, ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies. However, given the small number of traffic trips generated by operations of renewable energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations.
Park & Ride Lots: The goal of this measure is to improve the trip reduction potential of park-and-ride lots by providing commuter transit service and adequate bicycle storage to existing and future park-and-ride lots in the county.	Not applicable. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, construction of SEF and WECS facilities would vary in size resulting in a maximum 40 construction personnel during a Tier 3 SEF project and fewer for all other renewable energy projects. This limited amount of additional traffic would not result in significant impacts on local roadways and furthermore would be temporary and cease once construction is complete. Similarly, ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies. However, given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations.
Motor Vehicle Inspection and Control Programs: Vehicle inspection and maintenance programs, otherwise known as "smog-check" programs, are designed to ensure that emission control devices on motor vehicles continue to function properly.	Not applicable.
Traffic Flow Improvements: This control measure focuses on traffic flow improvements and "traffic calming." A strategy to directly benefit non-motorized forms of transportation, traffic calming refers to a range of methods designed to improve the flow of non-motorized transportation modes by slowing down the speed of motorized traffic.	Traffic calming is generally used in residential areas on non-arterial local streets and roads (SLOAPCD 2012). Ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies; however, transportation activities during operations would be limited to a small number of trips by personal vehicles and a few truck shipments. Given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic facility operations. While construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific renewable energy project site, increases of traffic due to construction would be temporary and cease once construction is complete.
Teleworking, Teleconferencing, and Telelearning: The objective of this measure is to reduce the number of trips and vehicle miles traveled by employees and students by promoting telecommuting, teleconferencing, and telelearning. Telecommuting is usually accomplished with a computer and modem, and allows the worker to be "connected" to the	Not applicable.

Clean Air Plan Policies (Policy Reference)	Proposed Program
worksite in order to access files and receive and send e-mail. Video services available at the worksite or at a teleconferencing center can reduce the need for business-related travel.	
Planning Compact Communities: The objective of this measure is to regulate growth to densities that reduce trips, travel distances, and encourage the use of alternative forms of transportation, restrict urban growth within the urban reserve lines of cities and unincorporated communities, and maintained rural areas of the county as open space, agricultural lands and very low density residential development (20 acre or larger parcel size).	The proposed project would not introduce a new land use or substantial population or employment growth; therefore, the project would not be likely to contribute to urban sprawl or increased dependence on automobile use. While rural areas of the county could potentially be developed with SEFs, these facilities would not be located in urban areas and eventually would be decommissioned. Decommissioning of facilities would involve removal of all aboveground facilities and gravel work pads and roads. While ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies, given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadways and highways would not adversely affect planned compact communities.
Providing for Mixed Land Use: The mixing of compatible commercial and residential land uses should be encouraged when it will reduce dependence on the automobile or improve the balance between jobs and housing without creating incompatible land use relationships.	Not applicable.
Balancing Jobs and Housing: Within cities and unincorporated communities, the gap between the availability of jobs and housing should be narrowed and should not be allowed to expand.	Not applicable. The project does not include a residential component that would directly induce new population growth. In fact, during construction of the SEFs and WECS facilities associated with implementation of the RESP, short-term employment could result in a beneficial impact on the local economy due to an increase in demand for products, services, and supplies found in the county.
Circulation Management: The primary goal of the recommended Circulation Management Policies and Programs is to encourage the design and construction of the county's transportation system in a manner that supports alternative travel modes and decreases reliance on single occupant motor vehicles. To this end, improving accessibility for all travelers, not just drivers, is the primary transportation objective.	Not applicable. While ongoing operations and maintenance of SEF and WECS facilities would require worker commutes and deliveries of supplies, given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadways and highways would not adversely affect planned compact communities.
Communication, Coordination, and Monitoring: Local jurisdictions, the APCD and the Council of Governments should coordinate actions and cooperate in pursuing the implementation of the land use and circulation management programs proposed in this document. The countywide Congestion Management Plan, the Clean Air Plan, and local General Plans should be used as a means to achieve coordinated implementation of these programs.	Not applicable.

As stated, construction of SEF and WECS facilities would vary in size; however, the maximum size and magnitude of projects permitted under the RESP (160-acre SEFs maximum) would not result in significant impacts on local roadways. Furthermore, given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on

local roadways and highways would not adversely impact the local transportation system or otherwise degrade traffic operations, and thus would not result in the generation of a substantial amount of mobile source air pollutants. Additionally, solar and wind energy facilities produce emissions-free energy and by their nature do not produce air pollutant emissions. Instead they reduce emissions by decreasing the need for energy from fossil fuel–based power plants, which is considered a beneficial impact regionally and statewide. Also, as shown in **Table 3.3-8,** no aspect of the proposed Program would conflict with the specific policy provisions contained in the SLOAPCD 2001 Clean Air Plan. This is a **less than significant (Class III)** impact**.**

Impact 3-3-4 – Policy Changes Implementation of the proposed Program could result in changes to countywide policies that could indirectly conflict with the SLOAPCD 2001 Clean Air Plan. This is a **less than significant (Class III)** impact.

The implementation of the proposed policy changes to the General Plan would enable streamlined reviews and approvals of SEF and WECS facility projects to be achieved either through the building permit process, zoning clearance process, or site plan review process. These facilities produce energy that is largely emissions-free and by their nature do not produce air pollutant emissions. Instead they reduce emissions by decreasing the need for energy from fossil fuel–based power plants, which is considered a beneficial impact regionally and statewide. Therefore, the proposed Program would not conflict with the SLOAPCD 2001 Clean Air Plan, which is intended to address state and federal air quality standards and ensure that long-term trends in air quality improvements are not disrupted. This is a **less than (Class III)** impact.

CUMULATIVE IMPACTS

The cumulative setting for air quality is the SCCAB, which includes San Luis Obispo, Santa Barbara, and Ventura counties. As stated under Threshold 1, while there would be some air pollutant emissions generated during the operation of renewable energy facilities from worker trips and equipment usage associated with ongoing operations, maintenance, repair, and security, such emissions would be negligible. This is because it is likely that up to 3 personnel would be required to service and maintain each Tier 1 SEF, Tier 2 SEF, and Tier 3 SEF facility, which represents a level of activity that would result in negligible air pollutant emissions. As also stated under Threshold 1, County Code Sections 22.10.030 and 22.60.050 mandates that a copy of any development application be forwarded to the SLOAPCD for review with the intent to enable the SLOAPCD to determine whether the proposed construction exceeds the district's significance thresholds and provide a basis for the type mitigation measures to apply.

The SLOAPCD has developed construction mitigation measures, including off-site mitigation, which are designed to reduce air pollutant emissions from construction activities and associated construction worker commutes (for a Tier 3 SEF project, construction personnel would average approximately 40 personnel, and Tier 1 and Tier 2 SEF projects would average fewer personnel depending on the construction schedule and phasing) and can be applied as necessary to reduce construction impacts below the significance thresholds. For these reasons, future construction of renewable energy facilities under the proposed Program would be less than significant in terms of air quality.

The SLOAPCD's approach to evaluating cumulative air quality impacts is project consistency with the SLOAPCD 2001 Clean Air Plan. As identified under Threshold 4, no aspect of the proposed Program would conflict with the specific policy provisions contained in the SLOAPCD 2001 Clean Air Plan. As a result, the project would be considered to be less than cumulatively considerable.

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