

## 3.4 Air Quality

This section includes an overview of the existing air quality within the project area and identifies applicable local, state, and federal policies related to air quality. The impact assessment provides an evaluation of potential adverse effects on air quality based on criteria derived from the CEQA Guidelines and Imperial County Air Pollution Control District's (ICAPCD) Air Quality Handbook in conjunction with actions proposed in Chapter 2, Project Description, of this EIR. Information contained in this section is summarized from the *Air Quality and Greenhouse Gas Technical Report* prepared by Catalyst Environmental Solutions. This report is included in Appendix D of this EIR.

### 3.4.1 Existing Conditions

#### Regional Setting

The proposed project is located in Imperial County within the Salton Sea Air Basin (SSAB). The SSAB consists of all of Imperial County and a portion of Riverside County. Both the ICAPCD and South Coast Air Quality Management District (SCAQMD) have jurisdiction within the SSAB. The ICAPCD has full jurisdiction within all Imperial County and SCAQMD only has jurisdiction within Riverside County.

The climate of Imperial County is governed by the large-scale sinking and warming of air in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in the winter, when it is weakest and located farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal areas. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The sun shines, on the average, more in Imperial County than anywhere else in the United States.

The lack of clouds and atmospheric moisture creates strong diurnal and seasonal temperature variations ranging from an average summer maximum of 108 degrees Fahrenheit (° F) down to a winter morning minimum of 38° F. The most pleasant weather occurs from about mid-October to early May when daily highs are in the 70s and 80s with very infrequent cloudiness or rainfall. Imperial County experiences rainfall on an average of only four times per year (>0.10 inches in 24 hours). The local area usually has three days of rain in winter and one thunderstorm day in August. The annual rainfall in this region is less than three inches per year.

Humidity is low throughout the year, ranging from an average of 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day.

The wind in Imperial County follows two general patterns. Wind statistics indicate prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles per hour (mph), and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than one-half of the observed wind measurements.

## Major Air Pollutants

### Criteria Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone, coarse particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), and sulfur dioxide (SO<sub>2</sub>) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 3.4-1.

**Table 3.4-1. Criteria Air Pollutants – Summary of Common Sources and Effects**

Pollutant	Major Manmade Sources	Human Health and Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO <sub>2</sub>	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O <sub>3</sub>	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N <sub>2</sub> O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM <sub>10</sub> and PM <sub>2.5</sub>	Power plants, steel mills, chemical plants, unpaved roads and parking lots, woodburning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO <sub>2</sub>	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: CARB 2023

### Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals.

Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

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

### Attainment Status

The U.S. Environmental Protection Agency (EPA) and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than ozone [O<sub>3</sub>], PM<sub>10</sub> and PM<sub>2.5</sub> and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period.

The attainment status for the portion of the SSAB encompassing the project site is shown in Table 3.4-2. As shown, the Imperial County portion of the SSAB is currently designated as nonattainment for O<sub>3</sub> and PM<sub>10</sub> under State standards. Under federal standards, the Imperial County portion of the SSAB is in nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The area is currently in attainment or unclassified status for CO, NO<sub>2</sub>, and SO<sub>2</sub>.

**Table 3.4-2. Attainment Status of Criteria Pollutants in the Imperial County Portion of the Salton Sea Air Basin**

Pollutant	State Designation	Federal Designation
O <sub>3</sub>	Nonattainment	Nonattainment
PM <sub>10</sub>	Nonattainment	Attainment
PM <sub>2.5</sub>	Attainment	Nonattainment
CO	Attainment	Unclassified/attainment
NO <sub>2</sub>	Attainment	Unclassified/attainment
SO <sub>2</sub>	Attainment	Unclassified/attainment
Sulfates	Attainment	Unclassified

Pollutant	State Designation	Federal Designation
Lead	Attainment	Unclassified/attainment
Hydrogen Sulfide	Unclassified	Unclassified

Source: CARB 2022a

### Sensitive Receptors

High concentrations of air pollutants pose health hazards for the general population, but particularly for the young, the elderly, and the sick. Typical health problems attributed to smog include respiratory ailments, eye and throat irritations, headaches, coughing, and chest discomfort. Certain land uses are considered to be more sensitive to the effects of air pollution. Schools, hospitals, residences, and other facilities where people congregate, especially children, the elderly and infirm, are considered particularly sensitive to air pollutants.

There are numerous sensitive receptors in proximity to the project components. Table 3.4-3 summarizes the sensitive receptors in the vicinity of the project site and distance to the nearest project components.

**Table 3.4-3. Sensitive Receptors in Proximity to Project Components**

Sensitive Receptor	Nearest Project Component	Distance to Nearest Project Component (Feet)
Residence (104 Jasper Rd.)	Heber 2 Solar Facility	540
Residence (600 Dogwood Rd.)	Dogwood Solar Facility	2,900
Residential Area (E. Fawcett Rd.)	Production Well	2,985
Heber Elementary School	Production Well	3,400
Residences (153, 175, 195 E. Cole Blvd.)	Dogwood Solar Facility	3,825

### 3.4.2 Regulatory Setting

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

#### Federal

##### *Clean Air Act*

The CAA, passed in 1970 and last amended in 1990, is the primary federal law that governs air quality. The Federal CAA delegates primary responsibility for clean air to the U.S. EPA. The U.S. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the act, the U.S. EPA has established the NAAQS for six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. Ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, Pb, and PM (including both PM<sub>10</sub>, and PM<sub>2.5</sub>) are the six criteria air pollutants. Ozone is a secondary pollutant, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC) are of particular interest as they are precursors to ozone formation. In addition, national standards exist for Pb. The NAAQS standards are

set at levels that protect public health with a margin of safety and are subject to periodic review and revision.

The Federal CAA requires U.S EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in Table 3.4-4.

## State

### *California Clean Air Act*

The California Clean Air Act (CCAA) was adopted by CARB in 1988. The CCAA is responsible for meeting the state requirements of the Federal CAA and for establishing the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The CCAA, as amended in 1992, requires all air districts of the state to achieve and maintain the CAAQS by the earliest practical date.

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous 3 calendar years. As shown in Table 3.4-4, the CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

### *California State Implementation Plan*

The CAA mandates that the state submit and implement a SIP for areas not meeting the NAAQS. These plans must include pollution control measures that demonstrate how the standards will be met. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP.

### *Toxic Air Contaminants Regulation*

TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources. The TACs that are relevant to the implementation of the project include DPM and airborne asbestos.

In August 1998, CARB identified DPM emissions from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel fueled engines and vehicles. The goal of the plan is to reduce diesel PM<sub>10</sub> (inhalable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identified 14 measures that target new and existing on-road vehicles (e.g., heavy duty trucks and buses, etc.), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps, etc.), and stationary engines (e.g., stand-by power generators, etc.).

**Table 3.4-4. Ambient Air Quality Standards**

Air Pollutant	Averaging Time	California Standard	National Standard
O <sub>3</sub>	1-hour	0.09 ppm	--
	8-hour	0.070 ppm	0.070 ppm
PM <sub>10</sub>	24-hour Mean	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
		20 µg/m <sup>3</sup>	--
PM <sub>2.5</sub>	24-hour Mean	--	35 µg/m <sup>3</sup>
		12 µg/m <sup>3</sup>	9 µg/m <sup>3</sup>
CO	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
NO <sub>2</sub>	1-hour Mean	0.18 ppm	100 ppb
		0.030 ppm	0.053 ppm
SO <sub>2</sub>	1-hour	0.25 ppm	75 ppb
	24-hour	0.04 ppm	--
Pb	30-day Rolling 3-month	1.5 µg/m <sup>3</sup>	-- 0.15 µg/m <sup>3</sup>
Sulfates	24-hour	25 µg/m <sup>3</sup>	No federal standard
Hydrogen Sulfide	1-hour	0.03 ppm	
Vinyl Chloride	24-hour	0.01 ppm	
Visibility-reducing particles	8-hour	Extinction coefficient of 0.23 kilometer, visibility of 10 miles or more because of particles when relative humidity is less than 70 percent	

Source: CARB 2016

Notes:

CO – carbon monoxide; mean – annual arithmetic mean; NO<sub>2</sub> – nitrogen dioxide; O<sub>3</sub> – ozone; Pb – lead; PM<sub>2.5</sub> – particulate matter less than 2.5 microns in diameter; PM<sub>10</sub> – particulate matter less than 10 microns in diameter; ppb – parts per billion; ppm – parts per million; SO<sub>2</sub> – sulfur dioxide; µg/m<sup>3</sup> – micrograms per cubic meter

### *Tanner Air Toxics Act & Air Toxics “Hot Spots” Information and Assessment Act*

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

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

## Regional

### *Imperial County Air Pollution Control District*

The ICAPCD is the agency responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. ICAPCD is responsible for regulating stationary sources of air emissions in Imperial County. Stationary sources that have the potential to emit air pollutants into the ambient air are subject to the Rules and Regulations adopted by ICAPCD. ICAPCD is responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases. Monitoring of ambient air quality in Imperial County began in 1976. Since that time, monitoring has been performed by ICAPCD, CARB, and by private industry. There are six monitoring sites in Imperial County from Niland to Calexico. The ICAPCD has developed the following plans to achieve attainment for air quality ambient standards.

- **2009 Imperial County Plan for PM<sub>10</sub>.** Imperial Valley is classified as nonattainment for federal and state PM<sub>10</sub> standards. As a result, ICAPCD was required to develop a PM<sub>10</sub> Attainment Plan. The final plan was adopted by ICAPCD on August 11, 2009 (ICAPCD 2009).
- **2013 Imperial County Plan for 2006 24-hour PM<sub>2.5</sub> for Moderate Nonattainment Area.** U.S. EPA designated Imperial County as nonattainment for the 2006 24-hr PM<sub>2.5</sub> standard, effective December 14, 2009. The 2013 PM<sub>2.5</sub> SIP demonstrates attainment of the 2006 PM<sub>2.5</sub> NAAQS “but-for” transport of international emissions from Mexicali, Mexico. The City of Calexico, California shares a border with the City of Mexicali. Effective July 1, 2014, the City of Calexico was designated nonattainment, while the rest of the SSAB was designated attainment (ICAPCD 2014).
- **2017 Imperial County Plan for 2008 8-hour Ozone Standard.** Because of Imperial County's “moderate” nonattainment status for 2008 federal 8-hour O<sub>3</sub> standards, ICAPCD was required to develop an 8-hour Attainment Plan for Ozone (ICAPCD 2017a). The plan includes control measures which are an integral part of how the ICAPCD currently controls the ROG and NO<sub>x</sub>

emissions within the O<sub>3</sub> nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of Reasonable Available Control Technology (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions.

- **2018 Imperial County Plan for PM<sub>10</sub>.** Imperial Valley is classified as nonattainment for federal and state PM<sub>10</sub> standards. The 2018 SIP maintained previously adopted fugitive dust control measures (Regulation VIII) that were approved in the Imperial County portion of the California SIP in 2013 (see above) (ICAPCD 2018a).
- **2018 Imperial County Plan for PM<sub>2.5</sub>.** U.S. EPA designated Imperial County as nonattainment for the 2018 24-hr PM<sub>2.5</sub> standard. The 2018 PM<sub>2.5</sub> SIP concluded that the majority of the PM<sub>2.5</sub> emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 PM<sub>2.5</sub> NAAQS “but for” transport of international emissions from Mexicali, Mexico. In accordance with the CCAA, the PM<sub>2.5</sub> SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA (ICAPCD 2018b).

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

#### *Imperial County Air Pollution Control District Rules and Regulations*

ICAPCD has the authority to adopt and enforce regulations dealing with controls for specific types of sources, emissions or hazardous air pollutants, and New Source Review. The ICAPCD Rules and Regulations are part of the SIP and are separately enforceable by the EPA.

**Rule 106 – Abatement.** The Board may, after notice and a hearing, issue, or provide for the issuance by the Hearing Board, of an order for abatement whenever the District finds that any person is in violation of the rules and regulations limiting the discharge of air contaminants into the atmosphere.

**Rule 107 – Land Use.** The purpose of this rule is to provide ICAPCD the duty to review and advise the appropriate planning authorities within the District on all new construction or changes in land use which the Air Pollution Control Officer believes could become a source of air pollution problems.

**Rule 201 – Permits Required.** The construction, installation, modification, replacement, and operation of any equipment which may emit or control Air Contaminants require ICAPCD permits.

**Rule 207 – New and Modified Stationary Source Review.** Establishes preconstruction review requirements for new and modified stationary sources to ensure the operations of equipment does not interfere with attainment or maintenance of ambient air quality standards.

**Rule 208 – Permit to Operate.** The ICAPCD would inspect and evaluate the facility to ensure the facility has been constructed or installed and will operate to comply with the provisions of the Authority to Construct permit and comply with all applicable laws, rules, standards, and guidelines.



**Rule 310 – Operational Development Fee.** The purpose of this rule is to provide ICAPCD with a sound method for mitigating the emissions produced from the operation of new commercial and residential development projects throughout the County of Imperial and incorporated cities. All project proponents have the option to either provide off-site mitigation, pay the operational development fee, or do a combination of both. This rule will assist ICAPCD in attaining the state and federal ambient air quality standards for PM<sub>10</sub> and O<sub>3</sub>.

**Rule 401 – Opacity of Emissions.** Sets limits for release or discharge of emissions into the atmosphere, other than uncombined water vapor, that are dark or darker in shade as designated as No.1 on the Ringelmann Chart<sup>1</sup> or obscure an observer's view to a degree equal to or greater than smoke does as compared to No.1 on the Ringelmann Chart, for a period or aggregated period of more than three minutes in any hour.

**Rule 403 – General Limitations on the Discharge of Air Contaminants.** Rule 403 sets forth limitations on emissions of pollutants, including particulate matter, from individual sources.

**Rule 407 – Nuisance.** Rule 407 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

**Rule 801 – Construction and Earthmoving Activities.** Rule 801 aims to reduce the amount of PM<sub>10</sub> entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM<sub>10</sub> emissions. This rule applies to any construction and other earthmoving activities, including, but not limited to, land clearing, excavation related to construction, land leveling, grading, cut and fill grading, erection or demolition of any structure, cutting and filling, trenching, loading or unloading of bulk materials, demolishing, drilling, adding to or removing bulk of materials from open storage piles, weed abatement through disking, back filling, travel on-site and travel on access roads to and from the site.

**Regulation VIII – Fugitive Dust Rules.** Regulation VIII sets forth rules regarding the control of fugitive dust, including fugitive dust from construction activities. The regulation requires implementation of fugitive dust control measures to reduce emissions from earthmoving, unpaved roads, handling of bulk materials, and control of track-out/carry-out dust from active construction sites. Best Available Control Measures to reduce fugitive dust during construction and earthmoving activities include but are not limited to:

- Phasing of work in order to minimize disturbed surface area
- Application of water or chemical stabilizers to disturbed soils
- Construction and maintenance of wind barriers
- Use of a track-out control device or wash down system at access points to paved roads.

Compliance with Regulation VIII is mandatory for all construction sites, regardless of size; however, compliance with Regulation VIII does not constitute mitigation under the reductions attributed to environmental impacts. In addition, compliance for a project includes: (1) the development of a dust control plan for the construction and operational phase; and (2) notification to the Air District is required

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<sup>1</sup> The Ringelmann scale is a scale for measuring the apparent density or opacity of smoke.

10 days prior to the commencement of any construction activity. Furthermore, any use of engine(s) and/or generator(s) of 50 horsepower or greater may require a permit through ICAPCD.

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

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

On September 3, 2020, SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2020). The RTP/SCS or “Connect SoCal” includes a strong commitment to reduce emissions from transportation sources to comply with Senate Bill 375, improve public health, and meet the NAAQS as set forth by the federal CAA. The following SCAG goal is applicable to the project:

- Reduce greenhouse gas emissions and improve air quality.

*Imperial County General Plan*

The Imperial County General Plan serves as the overall guiding policy for the County. The Conservation and Open Space Element includes objectives for helping the County achieve the goal of improving and maintaining the quality of air in the region. Table 3.4-5 summarizes the project’s consistency with the applicable air quality goal and objectives from the Conservation and Open Space Element. While this EIR analyzes the project’s consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**Table 3.4-5. Project Consistency with Applicable General Plan Policies**

Applicable Policies	Consistency Determination	Analysis
<b><i>Conservation and Open Space Element</i></b>		
Protection of Air Quality and Addressing Climate Change Goal 7: The County shall actively seek to improve the quality of air in the region.	Consistent	The proposed project would be required to comply with all applicable ICAPCD rules and requirements during construction and operation to reduce air emissions. Overall, the proposed project would improve air quality and reduce GHG emissions by reducing the amount of emissions that would be generated in association with electricity production from fossil fuel burning facilities. Therefore, the proposed project is consistent with this goal.



Applicable Policies	Consistency Determination	Analysis
Objective 7.1: Ensure that all project and facilities comply with current Federal, State and local requirements for attainment of air quality objectives.	Consistent	The proposed project would comply with current federal and State requirements for attainment for air quality objectives through conformance with all applicable ICAPCD rules and requirements to reduce fugitive dust and emissions. Further, the project would comply with the ICAPCD Air Quality CEQA Handbook’s Mandatory Standard Measures (Mitigation Measure AQ-1). Therefore, the proposed project is consistent with this objective.
Objective 7.2: Develop management strategies to mitigate fugitive dust. Cooperate with all federal and state agencies in the effort to attain air quality objectives.	Consistent	The Applicant would cooperate with all federal and State agencies in the effort to attain air quality objectives through compliance with the ICAPCD Air Quality CEQA Handbook’s Mandatory Standard Measures (Mitigation Measure AQ-1). Therefore, the proposed project is consistent with this objective.

Source: County of Imperial 2016

### 3.4.3 Impacts and Mitigation Measures

#### Thresholds of Significance

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

- Conflict with or obstruct implementation of the applicable air quality plan
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O<sub>3</sub> precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

#### *Imperial County Air Pollution Control District*

ICAPCD amended the Air Quality Handbook: Guidelines for the Implementation of CEQA on December 12, 2017 (ICAPCD 2017b). ICAPCD established significance thresholds based on the state CEQA thresholds. The handbook was used to determine the proper level of analysis for the proposed project.

#### **OPERATIONS**

Air quality analyses should compare all operational emissions of a project, including motor vehicle, area source, and stationary or point sources to the thresholds in Table 3.4-6. Projects can be classified as either Tier 1 or Tier 2 projects, depending on the project’s operational emissions. As shown in Table 3.4-6, Tier 1 projects are projects that emit less than 137 pounds per day of nitrogen oxide (NO<sub>x</sub>) or reactive organic gases (ROGs); less than 150 pounds per day of PM<sub>10</sub> or SO<sub>x</sub>; or less than 550 pounds per day of CO or PM<sub>2.5</sub>.

Tier 1 projects are not required to develop a Comprehensive Air Quality Analysis Report or an EIR and require the implementation of all feasible mitigation measures listed in Section 7.2 of the ICAPCD’s Air Quality Handbook (ICAPCD 2017b). Alternatively, Tier 2 projects are projects that emit 137 pounds per day of NO<sub>x</sub> or ROG or greater; 150 pounds per day of PM<sub>10</sub> or SO<sub>x</sub> or greater; or 550 pounds per day of CO or PM<sub>2.5</sub> or greater. Tier 2 projects are required to develop a Comprehensive Air Quality Analysis Report at a minimum and are required to implement all standard mitigation measures as well as all feasible discretionary mitigation measures listed in Sections 7.2 and 7.3 of the ICAPCD’s Air Quality Handbook (ICAPCD 2017b).

**Table 3.4-6. Imperial County Air Pollution Control District Significance Thresholds for Operation**

Criteria Pollutant	Tier 1 Thresholds	Tier 2 Thresholds
NO <sub>x</sub> and ROG	Less than 137 pounds per day	137 pounds per day and greater
PM <sub>10</sub> and SO <sub>2</sub>	Less than 150 pounds per day	150 pounds per day and greater
CO and PM <sub>2.5</sub>	Less than 550 pounds per day	550 pounds per day and greater
<b>Level of Significance</b>	<b>Less than Significant</b>	<b>Significant Impact</b>

Source: ICAPCD 2017b

CO – carbon monoxide; NO<sub>x</sub> – nitrogen oxide; O<sub>3</sub> – ozone; Pb – lead; PM<sub>2.5</sub> – particulate matter less than 2.5 microns in diameter; PM<sub>10</sub> - particulate matter less than 10 microns in diameter; ROG - reactive organic gas; SO<sub>x</sub> – sulfur oxide.

**CONSTRUCTION**

For construction projects, the Air Quality Handbook indicates that the significance threshold for NO<sub>x</sub> is 100 pounds per day and for ROG is 75 pounds per day. As discussed in the ICAPCD’s Air Quality Handbook, the approach to evaluating construction emissions should be qualitative rather than quantitative. In any case, regardless of the size of the project, the standard mitigation measures for construction equipment and fugitive PM<sub>10</sub> must be implemented at all construction sites. The implementation of discretionary mitigation measures, as listed in Section 7.1 of the ICAPCD’s Air Quality Handbook, apply to those construction sites that are 5 acres or more for non-residential developments or 10 acres or more in size for residential developments. The mitigation measures found in Section 7.1 of the ICAPCD’s handbook are intended as a guide of feasible mitigation measures and are not intended to be an all-inclusive comprehensive list of all mitigation measures. Table 3.4-7 presents the construction emission thresholds that are identified by ICAPCD.

**Table 3.4-7. Imperial County Air Pollution Control District Significance Thresholds for Construction Activities**

Pollutant	Thresholds
PM <sub>10</sub>	150 pounds per day
ROG	75 pounds per day
NO <sub>x</sub>	100 pounds per day
CO	550 pounds per day

Source: ICAPCD 2017b

CO – carbon monoxide; NO<sub>x</sub> – nitrogen oxide; PM<sub>10</sub> - particulate matter less than 10 microns in diameter; ROG - reactive organic gas.

## Methodology

Construction of the project was assumed to commence in the first quarter of 2025 and was estimated to take up to 35 months to complete. The project would result in both short-term and long-term emissions of air pollutants associated with construction and operations. Construction emissions would include exhaust from the operation of conventional construction equipment, on-road emissions from employee vehicle trips and haul truck trips, fugitive dust as a result of grading and vehicle travel on paved and unpaved surfaces.

Construction and operational emissions were estimated using the latest version of California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operation of a variety of land use projects. The model utilizes widely accepted federal and state models for emission estimates and default data from sources such as U.S. EPA AP-42 emission factors, CARB vehicle emission models, and studies from California agencies such as the California Energy Commission (CEC). Default CalEEMod inputs were used for modeling where project-specific details were not readily ascertainable (e.g., fleet mix and trip length).

In addition, the power generating unit will generate power by taking geothermal energy (e.g., heat) to vaporize liquid isopentane, which is the motive fluid that powers the turbines to create electricity. Accordingly, the primary air pollutant from the facility operations is isopentane, which is a VOC. Specifically, isopentane would be the motive fluid used to drive the turbines for the project. Although the motive fluid system is a “closed loop” with no routine emissions into the atmosphere, nearly all of the project’s operational ROG emissions comes from fugitive emissions of isopentane that leaks from pipes, seals, flanges, valves, and other connections and the vapor recovery system. Accordingly, the isopentane emissions due to maintenance, purging, and fugitive leaks are summarized as follows:

- **Maintenance Isopentane Emissions** - Occasionally, isopentane must be evacuated from a portion of an OEC for maintenance or repair. The OECs are divided into zones that can be isolated and evacuated for maintenance while the isopentane remains in the rest of the system. To evacuate the isopentane from a zone for maintenance, the isopentane liquid and vapor are removed using the VRMU (with a 95 percent control efficiency) and held in the storage tanks. Any remaining vapors are purged from the zone using nitrogen and passes through the VRMU. The unit is not opened to the atmosphere until the vapor concentration is less than 20 percent of the lower explosion limit for isopentane. Maintenance isopentane emissions are estimated based on site-specific emission factors derived from previous actual emissions data.
- **Purging Isopentane Emissions** - Over time impurities build up in the motive fluid (MF). These impurities include non-condensable gases (NCG’s) which decrease the operating efficiency of the units. NCGs are purged from the system using the existing VRMU. During the purging, vapors from the OECs pass through a knock-out drum and chiller to separate the condensable gases from the NCGs. The remaining gases are passed through an activated carbon bed to collect hydrocarbons before being vented to the atmosphere. The facility’s current air permit requires the VRMU to achieve 95 percent hydrocarbon capture efficiency.
- **Fugitive Isopentane Emissions** - Fugitive isopentane emissions occur from leaks in seals, flanges, pumps, valves, and other components. It is not feasible to measure fugitive emissions directly, but fugitive emissions leaks can be quantified based on the addition of isopentane to

the system to make up for the lost fluid. ORMAT tracks fluid additions, and the fluid additions that are not attributed to known non-fugitive cause are counted as fugitive emissions.

Per the Heber 2 Authority to Construct (ATC) #2217A-6 issued by the ICAPCD, site specific isopentane maintenance, purging, and fugitive emissions were calculated based on worst-case quarterly emissions from the years 2019 and 2020. Maintenance and fugitive emissions were also adjusted for the decreased complexity of the new units as compared to the existing units associated with the 2019 and 2020 reported emissions (i.e., the number of seals, flanges, pumps, valves, etc. associated with the project equipment is significantly less than the existing equipment). As such, the ICAPCD applies a 50 percent reduction factor to 50 percent emission reduction factor to account for the approximately 50 percent fewer potential sites for leaks and equipment failure. The emissions have been converted into a per 1,000-gallon factor by using the existing system volume. As summarized in Table 3.4-8, the resulting project-specific emission factors are 0.23 lbs/day/1,000 gallons for maintenance,  $1.45 \times 10^{-5}$  lbs/day/1,000 gal for purging and 0.60 lbs/day/1,000 gal for fugitive. These emission factors are assumed to be consistent with project operations.

**Table 3.4-8. Project-Specific Isopentane Emission Factors**

Emission Category	Site-Specific Emissions Factor Based on 2019 and 2020 Emissions (lbs/day/1,000 gallons)	Emissions Reductions Due to Reduced Complexity	Project-Specific Emission Factor (lbs/day/1,000 gallons)
Maintenance	0.45	50%	0.23
Purging	$2.9 \times 10^{-5}$	0%	$1.45 \times 10^{-5}$
Fugitive	1.20	50%	0.60

Source: ICAPCD ATC #2217A-6

The proposed OEC and ITLU have a combined volume of approximately 82,140 gallons, and the two isopentane storage tanks have a total capacity of 40,000 gallons. Isopentane emissions are related to the size of the system, so emissions were estimated by multiplying the total isopentane volume at the facility (i.e., 122,140 gallons) by the emission factors detailed in Table 3.4-8.

Emissions associated with the auxiliary emergency diesel generator and emergency diesel fire pump are estimated using CalEEMod 2022.1 default emission factors for diesel emergency generators and fire pumps.

The project site will be staffed with 1-2 onsite employees. Accordingly, annual operation and maintenance trips to the site are conservatively assumed to be up to six one-way trips during weekdays and three one-way trips during weekends. Such visits to the site include inspections, equipment servicing, site maintenance, and periodic washing of the photovoltaic modules at the solar plants. A 85 percent paved roads is utilized in the project CalEEMod emissions model to account for fugitive dust generated on paved surfaces throughout Imperial County. Indirect sources of emissions include those associated with energy consumption, water use, wastewater treatment, and solid waste disposal.

## Impact Analysis

### **Impact 3.4-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?**

The air quality attainment plan (AQAP) for the SSAB, through the implementation of the air quality management plan (AQMP) (previously AQAP) and SIP for PM<sub>10</sub>, sets forth a comprehensive program that will lead the SSAB into compliance with all federal and state air quality standards. A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. The 2017 Clean Air Plan strategy is based on projections from local general plans. Projects that are consistent with the local general plan are considered consistent with the regional air quality plan. In addition, AQMP control measures and related emission reduction estimates are based upon emissions projections for future development scenarios derived from land use, population, and employment characteristics defined in consultation with local governments. Conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections, meeting the land use designation set forth in the local General Plan, and comparing assumed emissions in the AQMP to proposed emissions.

The proposed project must demonstrate compliance with all ICAPCD applicable rules and regulations, as well as local land use plans and population projections. As the project does not contain a residential component, the project would not result in an increase in the regional population. While contributions to energy supply may induce population growth, the proposed geothermal and solar energy project would not significantly increase employment or growth within the region. Moreover, development of the proposed project would increase the amount of renewable energy and help California meet its RPS.

As shown in Table 3.4-5, the project is consistent with the applicable air quality goal and objectives from the General Plan. The proposed project would be required to comply with all applicable ICAPCD rules and requirements during construction and operation to reduce air emissions. Overall, the proposed project would improve air quality by reducing the amount of emissions that would be generated in association with electricity production from fossil fuel burning facilities.

Furthermore, the thresholds of significance adopted by the air district (ICAPCD), determine compliance with the goals of the attainment plans in the region. As such, emissions below the ICAPCD regional mass daily emissions thresholds presented in Table 3.4-6 and Table 3.4-7 would not conflict with or obstruct implementation of the applicable air quality plans. The following analysis is broken out by a discussion of potential impacts during construction of the project followed by a discussion of potential impacts during operation of the project.

**Construction.** The proposed project would emit criteria pollutants from the use of combustion sources such as diesel off-road equipment (e.g., tractors, cranes, generators, etc.), and on-road mobile sources associated with construction-related vehicle travel. Impacts to air quality would also occur during project construction as a result of soil disturbance and fugitive dust emissions. Construction emissions vary from day-to-day depending on the number of workers, number, and types of active heavy-duty vehicles and equipment, level of activity, the prevailing meteorological conditions, and the length over which these activities occur.

Project construction is anticipated to occur over an approximate two-year period. Construction is anticipated to begin in late 2024. Project emissions were calculated in accordance with the ICAPCD's Air Quality Handbook (ICAPCD 2017). For the purposes of this analysis, short-term construction emissions were determined utilizing the latest version of the CalEEMod model (version 2022.1) based on the assumptions described in the Methodology section and utilizing CalEEMod defaults for calendar year average equipment emission factors as opposed to tier-specific rates (e.g., Tier 3) (refer to

Appendix D of this EIR for emission model results). The total unmitigated emissions generated within each year of project construction are shown in Table 3.4-9.

**Table 3.4-9. Unmitigated Project Construction-Generated Emissions (lbs/day)**

Construction Year	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2025	27.52	246.06	268.98	0.80	2,243.9	231.29
2026	29.55	272.17	307.92	0.84	2,356.6	242.47
<i>ICAPCD Significance Threshold</i>	<b>75</b>	<b>100</b>	<b>550</b>	--	<b>150</b>	--
Exceed Threshold?	No	Yes	No	--	[Yes] <sup>1</sup>	--

Source: Appendix D of this EIR

Notes:

<sup>1</sup> Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided.

As shown in Table 3.4-9, the proposed project’s daily unmitigated construction emissions would exceed the ICAPCD thresholds for NO<sub>x</sub> and PM<sub>10</sub>. Pursuant to ICAPCD, the project must comply with the requirements of ICAPCD Regulation VIII for the control of fugitive dust. In addition, the ICAPCD’s Air Quality Handbook lists additional feasible mitigation measures that may be warranted to control emissions of fugitive dust and combustion exhaust. Therefore, implementation of Mitigation Measures AQ-1 and AQ-2 would provide additional reduction strategies to ensure that the construction emissions of NO<sub>x</sub> remain below the applicable thresholds as shown in Table 3.4-10.

**Table 3.4-10. Mitigated Project Construction-Generated Emissions (lbs/day)**

Construction Year	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2025	9.90	83.42	466.38	1.12	2,238.7	226.62
2026	10.72	87.08	520.46	1.30	2,351.7	238.04
<i>ICAPCD Significance Threshold</i>	<b>75</b>	<b>100</b>	<b>550</b>	--	<b>150</b>	--
Exceed Threshold?	No	No	No	--	[Yes] <sup>1</sup>	--

Source: Appendix D of this EIR

Notes:

<sup>1</sup> Guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. As such, further analysis of construction-related fugitive particulate matter is provided.

Specifically, Mitigation Measure AQ-2 requires that all off-road construction diesel engines not registered under CARB’s Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines as specified in CCR, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NO<sub>x</sub> and particulate matter emissions that are equivalent to Tier 4 engine.





Due to the assumption of 85 percent paved roads built into the project CalEEMod model, construction activities are shown to exceed the ICAPCD threshold for PM<sub>10</sub>. Specifically, CalEEMod results for the maximum daily emissions of PM<sub>10</sub> attributed to fugitive dust is estimated at 2,349.4 lbs/day whereas the PM<sub>10</sub> attributed to combustion engine emissions is 2.27 lbs/day (which is below the ICAPCD threshold for PM<sub>10</sub>).

However, guidance provided in the ICAPCD CEQA Air Quality Handbook (2017) specifies that the approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative. Further, the ICAPCD recommends the implementation of effective and comprehensive mitigation inclusive of standard mitigation measures for construction equipment and fugitive PM<sub>10</sub> in accordance with ICAPCD Regulation VIII for the control of fugitive dust as detailed in Mitigation Measure AQ-1. Regulation VIII requires all unpaved roadways, on- and off-site, to be conditioned and maintained with soil stabilizers to reduce dust opacity to no more than 20 percent; all unpaved disturbed surfaces, on- and off-site, to be stabilized with a dust suppressant, watering, or soil stabilizers to reduce opacity to no greater than 20 percent. Compliance with Regulation VIII dust control measures as detailed in Mitigation Measure AQ-1 would further minimize air quality impacts. In addition, the ICAPCD recommends implementation of additional discretionary mitigation measures for fugitive PM<sub>10</sub> control as applicable. Accordingly, implementation of Mitigation Measure AQ-3 would require additional dust suppression methods (such as water or chemical stabilization) on all unpaved roads associated with construction activities, Mitigation Measure AQ-4 requires development and implementation of a dust suppression management plan prior to any earthmoving activity, and Mitigation Measure AQ-6 limits the speed of all vehicles operating onsite on dirt roads to 15 miles per hour or less. Accordingly, with implementation of Mitigation Measures AQ-1 through AQ-4 and Mitigation Measure AQ-6, the project would not exceed the ICAPCD's thresholds of significance during construction. As described above, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections and comparing assumed emissions in the AQMP to proposed emissions. Because the proposed project complies with local land use plans and population projections and would not exceed ICAPCD's regional mass daily emissions thresholds, construction of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. After implementation of applicable mitigation measures, impacts would be considered less than significant.

**Operations.** Implementation of the project would result in long-term operational emissions of criteria air pollutants. Specifically, isopentane emissions will occur due to maintenance, purging, and fugitive leaks. Operation of auxiliary engines including the emergency diesel generator and emergency diesel fire pump will also result in emissions of criteria pollutants. Table 3.4-11 summarizes the estimated emissions of isopentane at the facility.

**Table 3.4-11. Isopentane Emission Estimate**

Emission Category	System Motive Fluid Volume (Gallons)	Project-Specific Emission Factor (lbs/day/1000 gallons)	Isopentane Emissions (lbs/day)
Maintenance	82,140 (OEC/ITLU)	0.23	18.48
Purging	82,140 (OEC/ITLU)	1.45 x 10 <sup>-5</sup>	0.001
Fugitive	122,140 (OEC/ITLU & Tanks)	0.60	49.28
		<b>TOTAL</b>	<b>67.7</b>

Source: Appendix D of this EIR

Note that emissions are representative of the maximum daily output (i.e., maximum of summer or winter results)

With the exception of isopentane emissions detailed in Table 3.4-11, all other operational emissions were modeled utilizing CalEEMod 2022.1. Accordingly, long-term combined operational emissions attributable to the project are summarized in Table 3.4-12 and compared to the operational significance thresholds promulgated by the ICAPCD.

**Table 3.4-12. Unmitigated Project Operational Emissions (lbs/day)<sup>1</sup>**

Emission Source	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area <sup>2</sup>	38.54	1.98	234.89	0.01	0.42	0.32
Mobile <sup>3</sup>	0.03	0.03	0.28	<0.005	0.49	0.06
Energy <sup>4</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Stationary <sup>5</sup>	0.12	0.34	0.31	<0.005	0.02	0.02
Fugitive Isopentane <sup>6</sup>	67.77	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>	<b>106.46</b>	<b>2.35</b>	<b>235.47</b>	<b>0.02</b>	<b>0.93</b>	<b>0.39</b>
<i>Threshold</i>	<b>137</b>	<b>137</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>550</b>
Exceed Threshold?	No	No	No	No	No	No

Source: Appendix D of this EIR

Notes:

<sup>1</sup> Daily emissions are representative of the maximum daily output (i.e., maximum of summer or winter results).

<sup>2</sup> Area emissions are inclusive of landscape maintenance equipment using CalEEMod default factors.

<sup>3</sup> Mobile emissions are inclusive of daily estimate vehicle miles travels associated with operations (i.e., average of 6 one-way trips per weekday and 3 one-way trips per day on Saturdays and Sundays with an estimated trip length of 10.2 miles).

<sup>4</sup> The project is a renewable energy project and does not require energy from the grid.

<sup>5</sup> Stationary emissions are associated with operation of emergency diesel generator (50 hours/year amortized over 365 days/year) and emergency diesel fire pump (40 hours/year amortized over 365 days/year)

<sup>6</sup> Isopentane emissions are reported as ROG.

Project-generated increases in emissions would be predominately associated with isopentane emissions and emissions related to landscape equipment use for routine maintenance work. As shown in Table 3.4-12, the proposed project’s combined operational emissions would not exceed the ICAPCD thresholds for CO, ROG, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub>. Although no significant air quality impact would occur during operation, the project would be required to comply with Regulation VIII that would further reduce fugitive dust emissions associated with the project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and operate stationary sources. Although no significant air quality impact would occur during operation, the project applicant is required to submit a Dust Suppression Management Plan for both construction and operation in order to reduce fugitive dust emissions. Implementation of Mitigation Measures AQ-3 through AQ-5 would ensure that a Dust Suppression Management Plan is implemented, thereby ensuring that this potential impact would remain less than significant. To further reduce dust emissions during operation of the project, the project applicant will implement Mitigation Measure AQ-6, which limits the speed of all vehicles operating onsite on dirt roads to 15 miles per hour or less.

As described above, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections and comparing assumed emissions in the AQMP to proposed emissions. Because the proposed project complies with local land use plans and population projections and would not exceed ICAPCD's regional mass daily emissions thresholds during construction and operation, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. This is considered a less than significant impact.

*Mitigation Measure(s)*

**AQ-1 Fugitive Dust Control.** Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. ICAPCD will verify implementation and compliance with these measures as part of the grading permit review/approval process.

**ICAPCD Standard Measures for Fugitive Dust (PM<sub>10</sub>) Control**

- All disturbed areas, including bulk material storage, which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.
- All on-site and offsite unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants, and/or watering.

**Standard Mitigation Measures for Construction Combustion Equipment**

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

**AQ-2 Construction Equipment.** All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in CCR, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NO<sub>x</sub> and particulate matter emissions that are equivalent to Tier 4 engine. Drill rig engines shall meet a minimum of Tier 4 Interim California Emission Standards. A list of the construction equipment, including all off-road equipment utilized at the project site by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. The equipment list shall be submitted periodically to ICAPCD to perform a NO<sub>x</sub> analysis. ICAPCD shall utilize this list to calculate air emissions to verify that equipment use does not exceed the significance thresholds. The Planning and Development Services Department and ICAPCD shall verify implementation of this measure.

**AQ-3 Dust Suppression.** The project applicant shall employ a method of dust suppression (such as water or chemical stabilization) approved by ICAPCD. All unpaved roads associated with construction shall be effectively stabilized of dust emissions using stabilizers/suppressant before the commencement of all construction phases. This will be conducted monthly at a rate of 0.1 gallon/ square yard of chemical dust suppressant. The project applicant shall apply chemical stabilization as directed by the product manufacturer to control dust between the panels as approved by ICAPCD, and other non-used areas (exceptions will be the paved entrance and parking area, and Fire Department access/emergency entry/exit points as approved by Fire/Office of Emergency Services [OES] Department).

**AQ-4 Dust Suppression Management Plan.** Prior to any earthmoving activity, the applicant shall submit a construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

**AQ-5 Operational Dust Control Plan.** Prior to issuance of a Certificate of Occupancy, the applicant shall submit an operations dust control plan and obtain ICAPCD and ICPDS approval. ICAPCD Rule 301 Operational Fees apply to any project applying for a building permit. At the time that building permits are submitted for the proposed project, ICAPCD shall review the project to determine if Rule 310 fees are applicable to the project.

**AQ-6**      **Speed Limit.** During construction and operation of the proposed project, the applicant shall limit the speed of all vehicles operating onsite on unpaved roads to 15 miles per hour or less.

*Mitigation Measure(s)*

Although the proposed project would not exceed ICAPCD’s significance thresholds, Mitigation Measures AQ-1 through AQ-6 would provide additional reduction strategies to further improve air quality and reductions in criteria pollutants and ensure that this potential impact would remain less than significant impact.

**Impact 3.4-2**    ***Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O<sub>3</sub> precursors)?***

As shown in Table 3.4-2, the criteria pollutants for which the project area is in State non-attainment under applicable air quality standards are O<sub>3</sub> and PM<sub>10</sub>. The ICAPCD’s application of thresholds of significance for criteria air pollutants is relevant to the determination of whether a project’s individual emissions would have a cumulatively significant impact on air quality.

**Construction.** As discussed above in Impact 3.4-1, the project’s daily construction emissions would exceed the ICAPCD thresholds for NO<sub>x</sub> and PM<sub>10</sub>. As discussed above, with implementation of Mitigation Measures AQ-1 through AQ-4 and Mitigation Measure AQ-6, the project’s daily mitigated construction emissions would not exceed the ICAPCD thresholds (note that although the CalEEMod results for PM<sub>10</sub> emissions are shown to exceed the ICAPCD threshold, the ICAPCD recommends analyzing construction particulate matter qualitatively rather than quantitatively). Additionally, pursuant to ICAPCD, the project must comply with the requirements of ICAPCD Regulation VIII for the control of fugitive dust. In addition, the ICAPCD’s Air Quality Handbook lists additional feasible mitigation measures that may be warranted to control emissions of fugitive dust and combustion exhaust. Implementation of Mitigation Measures AQ-1 and AQ-2 would provide additional reduction strategies to further improve air quality. Therefore, the project’s potential to result in a cumulatively considerable net increase of any criteria pollutant during construction is considered less than significant.

**Operations.** As discussed above in Impact 3.4-1 and summarized in Table 3.4-12, the project’s daily operations emissions would not exceed the ICAPCD thresholds. Although no significant air quality impact would occur during operation, the project applicant is required to submit a Dust Suppression Management Plan for both construction and operation in order to reduce fugitive dust emissions. Implementation of Mitigation Measures AQ-3 through AQ-5 would ensure that a Dust Suppression Management Plan is implemented, thereby ensuring that this potential impact would remain less than significant. To further reduce dust emissions during operation of the project, the project applicant will implement Mitigation Measure AQ-6, which limits the speed of all vehicles operating onsite on dirt roads to 15 miles per hour or less. Therefore, the project’s potential to result in a cumulatively considerable net increase of any criteria pollutant during operations is considered less than significant.

*Mitigation Measure(s)*

No mitigation measures are required.

**Impact 3.4-3**    ***Would the project expose sensitive receptors to substantial pollutant concentrations?***

## CONSTRUCTION

As summarized in Table 3.4-3, there are numerous sensitive receptors in proximity to the project components. The nearest sensitive land use to the project site is a single-family residence located approximately 540 feet from the proposed Heber 2 solar facility. Construction of the proposed project would result in temporary, short-term project-generated emissions of DPM, ROG, NO<sub>x</sub>, CO, and PM<sub>10</sub> from the exhaust of off-road, heavy-duty diesel equipment and construction-related truck traffic. The portion of the SSAB which encompasses the project site is designated as a nonattainment area for federal O<sub>3</sub> and PM<sub>2.5</sub> standards and is also a nonattainment area for the state standards for O<sub>3</sub> and PM<sub>10</sub>. Thus, existing O<sub>3</sub> and PM<sub>10</sub> levels in the SSAB are at unhealthy levels during certain periods. However, as shown in Table 3.4-9, the project would not exceed the ICAPCD significance thresholds for construction emissions. The health effects associated with O<sub>3</sub> are generally associated with reduced lung function. Because the project would not involve construction activities that would result in O<sub>3</sub> precursor emissions (ROG or NO<sub>x</sub>) in excess of the ICAPCD thresholds, the project is not anticipated to substantially contribute to regional O<sub>3</sub> concentrations and the associated health impacts.

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

Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by CARB in 1998. For construction-type activity, DPM is the primary TAC of concern. PM<sub>10</sub> exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As with O<sub>3</sub> and NO<sub>x</sub>, the project would not generate emissions of PM<sub>10</sub> or PM<sub>2.5</sub> that would exceed the ICAPCD's thresholds, and thus are not expected to cause any increase in related health effects for these pollutants.

Project construction would not result in a significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant.

## OPERATIONS

Operation of the proposed project would not result in the development of any substantial sources of air toxics. Stationary sources associated with the project include limited use of an emergency diesel generator and emergency diesel fire pump. Further, operation of the project would not attract additional mobile sources that spend long periods queuing and idling at the site. With respect to isopentane, according to the Clean Air Act Section 112(b), Hazardous Air Pollutants, isopentane is not listed or considered a hazardous air pollutant. As such, onsite combined project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors as the predominant operational emissions associated with the project would be routine maintenance work. Therefore, the project would not be a substantial source of TACs. The project would not result in a high carcinogenic or non-carcinogenic risk during operation.

CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Areas of high CO concentrations, or “hot spots,” are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. CO concentration in the SSAB is designated as an attainment area. Detailed modeling of project-specific CO “hot spots” is not necessary and thus this potential impact is addressed qualitatively. The project is anticipated to result in no more than six daily traffic trips. Thus, the project would not generate traffic volumes at any intersection that would result in a likelihood of the project traffic contributing to CO “hot spots.”

Project operations would not result in a significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant.

#### *Mitigation Measure(s)*

No mitigation measures are required.

#### ***Impact 3.4-4 Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

##### **CONSTRUCTION**

Geothermal fluid can release various non-condensable gases such as H<sub>2</sub>S. Hot water, steam, particulate, and/or gases that could emanate from a typical geothermal well during drilling, testing, and cleanout could contain several minerals and other naturally occurring chemicals. However, most of these chemicals are present only in trace amounts and would not pose a health hazard to the surrounding environment. H<sub>2</sub>S emissions would be the most important non-condensable gas from a health-risk and odor nuisance standpoint. The potential exists that this gas and other non-condensable gases may be emitted intermittently on a short-term and temporary basis during drilling. During well cleanout and flow testing, geothermal fluids would likely be pumped into large tanks. H<sub>2</sub>S may temporarily be released from the geothermal fluid for several hours to up to 30 days during these activities. The local H<sub>2</sub>S emissions during these activities could exceed the ICAPCD sulfur compound emission standard (Rule 405) of 0.2 percent by volume (calculated as SO<sub>2</sub> and measured at a point of discharge) and could produce an objectionable “rotten egg” odor in the immediate vicinity of each well. However, these concentrations would not be expected to pose a health hazard and would not reach far beyond the vicinity of the wells under normal conditions. In addition, potential H<sub>2</sub>S emissions resulting from these activities would be temporary at each well development site and would occur for a relatively short period of several hours to up to 45 days at each well site.

Construction of the project components would also result in short-term diesel exhaust emissions from on-site heavy-duty equipment and from material deliveries and debris removal, which could result in the creation of objectionable odors. These activities would be temporary or periodic, and spatially dispersed, and any associated odors would dissipate quickly from the sources.

The closest sensitive receptor to the project site is a residence located off Jasper Road, approximately 540 feet from the proposed Heber 2 solar facility and approximately 1,000 feet from the nearest producing well site. Therefore, given the temporary nature of construction activities and the lack of sensitive receptors in the immediate vicinity of project components, odor nuisances that would be associated with project construction activities are expected to be negligible and impacts would be less than significant.

## OPERATIONS

According to ICAPCD's Air Quality Handbook, land uses associated with odor complaints include wastewater treatment plants, sanitary landfills, composting stations, feedlots, asphalt plants, painting/coating operations (auto body shops), and rendering plants (ICAPCD 2017). The proposed project does not include any of these types of operations and would not be expected to be a major source of odor impacts. During normal operations, geothermal fluid would be contained within a closed-loop heat exchanger system and reinjected back into the geothermal reservoir. Thus, odors associated with geothermal fluids would not be expected during normal operations. Isopentane has a gasoline-like odor which could be considered objectionable. However, the closest residential sensitive receptors are located more than 3,000 feet from the proposed Dogwood geothermal plant. Any associated odors would dissipate quickly from the sources and is not expected to affect a substantial number of people. As such impacts during operations would be less than significant.

### *Mitigation Measure(s)*

No mitigation measures are required.

## 3.4.4 Decommissioning/Restoration and Residual Impacts

### Decommissioning/Restoration

At the end of the project's useful life, all equipment and facilities will be properly abandoned and dismantled. Similar to construction activities, decommissioning and restoration of the project would generate air emissions. The proposed project's daily unmitigated construction emissions are provided in Table 3.4-9.

The emissions from on- and off-road equipment during decommissioning are expected to be significantly lower than project construction emissions, as the overall activity would be anticipated to be lower than project construction activity. No significant air quality impacts are anticipated during decommissioning and restoration of the project site. However, all construction projects within Imperial County must comply with the requirements of ICAPCD Regulation VIII for the control of fugitive dust. In addition, the ICAPCD's Air Quality Handbook lists additional feasible mitigation measures that may be warranted to control emissions of fugitive dust and combustion exhaust. Mitigation Measures AQ-1 through AQ-6 would provide additional reduction strategies to further improve air quality. Therefore, a less than significant impact is identified during decommissioning and site restoration of the project site.

### Residual

The proposed project would not result in short-term significant air quality impacts during construction. Implementation of Mitigation Measures AQ-1 and AQ-2 would provide additional reduction strategies to further improve air quality. Although no significant air quality impact would occur during operation, the project applicant is required to submit a Dust Suppression Management Plan for both construction and operation in order to reduce fugitive dust emissions. Implementation of Mitigation Measures AQ-3 through AQ-5 would ensure that a Dust Suppression Management Plan is implemented, thereby ensuring that this potential impact would remain less than significant. The project would not result in any residual operational significant and unavoidable impacts with regards to air quality.