

D.11 Air Quality – Contents

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D.11 Air Quality

This section addresses the Proposed Project and alternatives as they would affect air quality. Section D.11.1 provides a description of the environmental setting, and the applicable air quality management plans, regulations, and requirements are introduced in Section D.11.3. An analysis of the Proposed Project impacts is provided in Sections D.11.5 through D.11.13, and the air quality impacts related to the project alternatives are described in Sections D.11.14 and D.11.19. Climate change and greenhouse gases (GHG) are relevant to the overall project (Section D.11.13), specifically in Section D.11.13.3.

Appendix 2 (Policy Screening Report) lists all plans and policies applicable to the Proposed Project, and presents a preliminary screening evaluation of these policies. The consistency of the Proposed Project with applicable plans and policies is addressed in Section D.16, where there is specific discussion of each item that was determined in the Appendix 2 screening process to warrant further evaluation.

D.11.1 Regional Setting and Approach to Data Collection

D.11.1.1 Climate and Meteorology

Climate affects air quality in the movement of air from source to receptor as well as the formation of ozone and the effect of rain on airborne dust. High temperature and sunlight typical of summer days throughout the project area are prime conditions for ground-level ozone formation. If ozone precursors, discussed below, are present and air movement is slight, high ozone levels may result in source areas or areas downwind. Similarly, particulate matter builds up in and washes out of the air partly in response to wind and rain conditions (CARB, 2006a). Natural emissions sources in the project area are dust from windstorms especially in Imperial County and wildfires, which can cause spikes in particulate matter levels downwind and are most severe in the late summer.

The project area spans two air basins with diverse climates. Imperial County has a desert climate while San Diego County has a subtropical climate. In coastal San Diego County summers are typically cool and winters are mild in comparison to locations further inland. Ambient temperatures occasionally occur below freezing throughout the project area. Peak temperatures increase away from the coast, averaging 106°F in the summer months in El Centro. The semi-permanent Pacific High pressure cell over the eastern Pacific Ocean dominates the climate in the project area. During the winter months, the Pacific High weakens and migrates to the south, allowing Pacific storms into California. The average annual rainfall, most of which occurs between November and April, is 26 inches at Julian while that of the desert is 2.6 inches at El Centro.

The western portion of the project would traverse all but the maritime climate zones of San Diego County. Decreasing humidity levels toward the eastern regions prevents some air quality problems associated with mold spores but increases the amount of dust and particulate matter in the air. In central San Diego County, elevation replaces the ocean's cloud-forming effects as the dominant influence on climate, creating a rain shadow that dramatizes the transition across the mountains to the eastern San Diego County desert and Imperial County. Elevation also influences pollutant-trapping atmospheric inversion, common in Ramona (1,600 feet) but rare in Julian (4,200 feet). The inversion layer typically traps pollution at about 2,000 feet and below. The prevailing winds through central San Diego County are generally westerly from the Pacific Ocean, but are greatly influenced by local topography. Occasional winter storms and offshore flows reverse the winds so that they flow from the east.

D.11.1.2 Existing Air Quality

Criteria Air Pollutants

With the assistance of the local air quality districts, the California Air Resources Board (CARB) compiles inventories and projections of emissions of the major pollutants and monitors air quality conditions. The Imperial County portion of the Salton Sea Air Basin is administered by the Imperial County Air Pollution Control District (ICAPCD) and the San Diego Air Basin, by the San Diego Air Pollution Control District (SDAPCD). The boundaries of these local air districts are shown on Figure D.11-1.

Ambient air quality is characterized in terms of the “criteria air pollutants,” which refer to a group of pollutants for which regulatory agencies have adopted ambient standards and region-wide pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter, and lead. Volatile organic compounds (VOC) or reactive organic gases (ROG) and nitrogen oxides (NO_x) are also regulated as criteria pollutants because they are precursors to ozone formation. Certain VOCs also qualify as toxic air contaminants. Two subsets of particulate matter are inhalable particulate matter less than ten microns in diameter (PM₁₀) and fine particulate matter less than 2.5 microns in diameter (PM_{2.5}). Sulfur oxides (SO_x) and NO_x are also precursors to particulate matter formation in the atmosphere.

The primary health effects of the criteria air pollutants are as follows:

- **Ozone:** aggravation of respiratory and cardiovascular diseases; impairment of cardiopulmonary function; and eye irritation.
- **Particulate matter:** increased risk of chronic respiratory disease; reduced lung function; increased cough and chest discomfort; and particulates may lodge in and/or irritate the lungs.
- **Carbon monoxide:** impairment of oxygen transport in the bloodstream; aggravation of cardiovascular disease; impairment of central nervous system function; fatigue, headache, confusion, dizziness; death at high levels of exposure; and aggravation of some heart diseases (angina).
- **Nitrogen dioxide:** risk of acute and chronic respiratory disease.
- **Sulfur dioxide:** aggravation of respiratory diseases (asthma, emphysema); reduced lung function; and irritation of eyes.

Ambient Air Quality

Violations of federal and State ambient air quality standards for ozone, particulate matter, and CO have occurred historically in the project area. Since the early 1970s, substantial progress has been made toward controlling these pollutants. Although improvements have occurred, violations of ambient air quality standards for ozone and particulate matter are persistent in southern California. The frequency of the violations and the current air quality conditions are summarized for ozone, PM₁₀, and PM_{2.5} in Table D.11-1. (The standards are discussed in more detail under Section D.11.3, Applicable Regulations, Plans, and Standards.)

Figure D.11-1. Air Quality Management Districts and Class I Areas
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Table D.11-1. Local Ambient Air Quality Monitoring Data

Monitoring Location	Year	Ozone	Ozone	PM10	PM10	PM2.5	PM2.5
		Days Over 8-hr Nat'l Standard	Max 8-hr (ppm)	Est Days Over 24-hr Nat'l Standard	Max 24-hr ($\mu\text{g}/\text{m}^3$)	Est Days Over 24-hr Nat'l Standard	Max 24-hr ($\mu\text{g}/\text{m}^3$)
Calexico, Ethel Street	2006	1	0.087	6.6	164	1	68.8
	2005	1	0.093	6.1	188	0	67.6
	2004	0	0.077	6.1	161	0	48.5
El Centro, 9th Street	2006	9	0.101	0	146	0	33.8
	2005	5	0.097	0	81	0	57.9
	2004	0	0.080	0	135	3.8	74.2
Westmorland, W. 1st St	2006	5	0.088	—	118	—	—
	2005	10	0.100	0	54	—	—
	2004	0	0.083	—	201	—	—
Alpine, Victoria Drive	2006	14	0.100	—	—	—	—
	2005	5	0.089	—	—	—	—
	2004	2	0.090	—	—	—	—
El Cajon, Redwood Ave	2006	1	0.090	0	47	0	37.6
	2005	0	0.073	0	48	0	40.9
	2004	0	0.078	6.1	55	0	44.4
San Diego, Overland Ave	2006	1	0.091	0	42	0	26.3
	2005	0	0.072	0	44	0	29
	2004	2	0.087	0	44	0	28.5
Escondido, E Valley Pkwy	2006	2	0.096	0	51	0	40.6
	2005	0	0.079	0	42	0	43.1
	2004	2	0.086	0	57	6.1	67.3
Chula Vista	2006	0	0.068	0	50	0	30.2
	2005	0	0.081	0	52	0	34.3
	2004	1	0.087	0	44	0	32.7

Source: CARB Air Quality Data CD-R, 2006b; and CARB Air Quality Data Website, 2006.

Notes: State Standard = California Ambient Air Quality Standard (CAAQS). "—" = Insufficient or unavailable data.

ppm = parts per million

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; days over PM10 CAAQS is calculated based on monitoring every sixth day.

Toxic Air Contaminants

Toxic air contaminants (TACs) refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria air pollutants. Toxic air contaminants are regulated because they are suspected or known to cause cancer, birth defects, neurological damage, or death. The U.S. EPA manages a list of hazardous air pollutants (HAPs) and the CARB oversees contaminants defined in California's AB 1807 and/or AB 2588. Diesel particulate matter, benzene, and 1,3-butadiene are the three pollutants, all largely from mobile sources, that contribute most to baseline ambient risks.

There are no established ambient air quality standards for TACs. Instead they are managed on a case-by-case basis depending on the quantity and type of emissions and proximity of potential receptors. Programs focus on categories of industrial and commercial emitters (e.g., engines emitting diesel particulate matter) of toxic air contaminants and require reductions that are tailored to the source category. There are also federal programs that require control of certain categories of sources of TACs.

Baseline ambient risk levels can be roughly estimated from data gathered at TAC monitoring stations. Concentrations of TACs are highly localized and monitored at select locations. In San Diego County at Chula Vista and El Cajon, approximately 150 excess cancer cases occur per one million people as a result of TACs excluding diesel particulate matter (SDC, 2007), and diesel particulate matter exposure in San Diego County could add 420 cases per million (CARB, 2006a). Less data is available in Imperial County, but at Calexico ambient risk levels caused by benzene and 1,3-butadiene are higher than in San Diego County (CARB, 2006b), probably due to the influence of pollutants transported from Mexico. Statewide population-weighted exposure to diesel particulate matter in the background ambient air adds an additional 540 excess cancer cases per one million people (CARB, 2006a).

Greenhouse Gases

Greenhouse gases (GHG) that contribute to global climate change are carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF₆). In response to Executive Order S-3-05 (June 2005), which declared California's particular vulnerability to climate change, the California Global Warming Solutions Act of 2006, Assembly Bill 32 (AB32), was signed into effect on September 27, 2006. In passing the bill, the California Legislature found that:

“Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems” (California Health & Safety Code, Sec. 38500, Division 25.5, Part 1).

Emissions of CO₂ occur largely from combustion of fossil fuels. The major categories of fossil fuel combustion CO₂ sources can be broken into sectors for residential, commercial, industrial, transportation, and electricity generation. The transportation sector includes all motor gasoline and diesel fuel combustion, and the GHG emissions of this sector are not split into activities or uses (i.e., there is no separate estimate for the level of GHG emissions caused by gasoline or diesel fuel combustion-related to statewide construction activities). Other GHG emissions such as methane (CH₄) and nitrous oxide (N₂O) are also tracked by State inventories but occur in much smaller quantities. The global warming potential of methane is about 21 times that of CO₂. When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO₂ emission rate (CO₂ Eq.).

California's greenhouse gas emissions are large in a world-scale context and growing over time (CEC, 2007). The State is responsible for approximately 500 million metric tons of CO₂ equivalent (MMT CO₂ Eq.) or more than one percent of the 49,000 MMT CO₂ Eq. emitted globally (IPCC, 2007). Electricity generation within California is responsible for about 50 million metric tons of CO₂ (depending on yearly variations) or 15 percent of the total statewide CO₂ emissions and about one percent of statewide methane emissions. Electricity generation in other states delivered to California over high-voltage transmission lines also causes a substantial quantity of GHG emissions, about 10 percent more than the amount from in-state electricity generation. The use of sulfur hexafluoride (SF₆) in power transformers and circuit breakers at power plants and along transmission lines also poses a concern, because this pollutant can slowly escape from the equipment, and it has an extremely high global warming potential (one ton of SF₆ is equivalent to approximately 23,900 tons of CO₂).

Statewide emissions of greenhouse gases from relevant source categories in 1990 and later years are summarized in Table D.11-2.

The California Climate Action Registry (CCAR) offers protocols to facilitate preparing inventories of GHG emissions. The registry is a non-profit public corporation that records greenhouse gas emissions inventories that California entities voluntarily report. SDG&E is a member in the CCAR, and provides voluntary reports of “entity-wide” GHG emissions. For 2005, SDG&E reported the following levels of GHG emissions from all of its activities (CCAR, 2007):

- Stationary source (commercial) fuel combustion: 0.0147 MMTCO₂ Eq.
- Mobile source (transportation) fuel combustion: 0.0181 MMTCO₂ Eq.
- Fugitive emissions: 0.0054 MMTCO₂ Eq.
- Energy source emissions for SDG&E use (indirect emissions): 0.384 MMTCO₂ Eq.

Table D.11-2. California Greenhouse Gas Emissions (million metric tons CO₂ Eq.)

Emission Inventory Category	1990	2000	2001	2002	2003	2004	2005
Residential Fuel Combustion (CO ₂)	29.7	30.25	27.21	27.32	26.40	27.86	—
Commercial Fuel Combustion (CO ₂)	14.4	15.63	12.04	17.84	15.06	12.1	—
Industrial Fuel Combustion (CO ₂)	103.0	76.17	80.48	71.53	65.47	67.1	—
Transportation Fuel Combustion (CO ₂)	150.7	181.68	182.49	190.19	180.64	187.95	—
Electricity Generation, In-State (CO ₂)	49.0	55.87	61.35	47.78	45.92	55.10	49.0
Elec. Generation Subtotal, Natural Gas (CO ₂)	—	49.71	55.48	41.98	40.56	48.94	43.0
Elec. Generation Subtotal, Coal (CO ₂)	—	2.26	2.13	2.39	2.17	2.58	2.2
Elec. Generation Subtotal, Petroleum (CO ₂)	—	3.90	3.74	3.41	3.20	3.59	3.7
Methane (all CH ₄ shown as CO ₂ Eq.)	—	26.32	26.62	27.07	27.49	27.80	—
Nitrous Oxide (all N ₂ O shown as CO ₂ Eq.)	—	31.43	30.76	34.48	33.85	33.34	—
Electricity Transmission and Distribution (SF ₆ shown as CO ₂ Eq.)	2.6	1.14	1.10	1.04	1.01	1.02	—
Total California Greenhouse Gas Emissions without Electricity Imports	371.7	440.47	446.35	444.86	423.20	439.19	—
Electricity Imports (CO ₂ Eq.)	61.6	40.48	47.37	51.73	56.44	60.81	—
Total California Greenhouse Gas Emissions with Electricity Imports	433.29	480.94	493.72	496.59	479.64	500.00	—

Source: CARB, 2007a for 1990 and California Energy Commission, 2007 for all other years. (Totals include source categories not shown. CEC data reflect changes in memo from CEC to CARB dated January 23, 2007.) “—” means subtotal not provided in this format by citation.

D.11.1.3 Existing Emission Inventory

Existing emission sources in the project area include a diverse range of stationary sources, mobile sources, and smaller sources that are distributed area-wide. Rural and undeveloped areas may experience natural sources such as windstorms or wildfires and emissions from off-road or off-highway vehicle (ORV or OHV) use especially on BLM lands. Mobile sources are commonplace throughout the developed areas, including on-highway motor vehicles, heavy mobile equipment used for off-road purposes (e.g., construction equipment), aircraft, and railroad locomotives. CARB compiles region-wide emission inventories that include planning and forecast estimates for each of these groups of sources.

The inventory of California greenhouse gas emissions is summarized in Section D.11.1.2 (see Table D.11-2). Table D.11-3 summarizes the existing emissions of the criteria pollutants for all of Imperial County, and Table D.11-4 summarizes the emissions of criteria pollutants in San Diego County.

Table D.11-3. Existing Emissions from Selected Source Categories, Imperial County

Emission Inventory Category	NOx (ton/day)	VOC (ton/day)	PM10 (ton/day)	PM2.5 (ton/day)	CO (ton/day)	SOx (ton/day)
Electric Utilities	1.04	0.05	0.11	0.11	0.20	0.06
Manufacturing and Industrial	4.83	0.05	0.27	0.26	0.51	0.06
Construction and Demolition	—	—	1.95	0.40	—	—
Paved Road Dust	—	—	4.20	0.71	—	—
Unpaved Road Dust	—	—	33.67	7.14	—	—
Fugitive Windblown Dust	—	—	172.70	37.51	—	—
On-Road Motor Vehicles	13.93	7.10	0.38	0.28	68.00	0.10
Off-Road Equipment	1.54	0.54	0.11	0.10	5.47	0.00
Grand Total, Imperial County	33.71	31.18	231.87	55.77	110.16	1.21

Source: CARB, Almanac Emission Projection Data (published in 2006). <http://www.arb.ca.gov/app/emsmv/emssumcat.php>. Reports run May 9, 2007.

Table D.11-4. Existing Emissions from Selected Source Categories, San Diego County

Emission Inventory Category	NOx (ton/day)	VOC (ton/day)	PM10 (ton/day)	PM2.5 (ton/day)	CO (ton/day)	SOx (ton/day)
Electric Utilities	0.61	0.04	0.32	0.32	0.18	0.01
Manufacturing and Industrial	0.95	0.06	0.08	0.08	0.74	0.06
Construction and Demolition	—	—	27.34	5.68	—	—
Paved Road Dust	—	—	36.56	6.17	—	—
Unpaved Road Dust	—	—	22.20	4.71	—	—
Fugitive Windblown Dust	—	—	0.33	0.07	—	—
On-Road Motor Vehicles	112.97	60.32	4.55	3.09	626.31	1.02
Off-Road Equipment	34.51	15.39	2.60	2.32	145.07	0.10
Wildfires	4.22	9.26	13.94	11.83	137.58	1.30
Grand Total, San Diego County	209.85	263.03	127.70	50.93	1078.27	14.40

Source: CARB, Almanac Emission Projection Data (published in 2006). <http://www.arb.ca.gov/app/emsmv/emssumcat.php>. Reports run May 9, 2007.

Most of the power for the existing electrical system is provided by generators within San Diego County, southern California, Arizona, and Mexico. Although power plants are an easily recognizable source of pollution, they represent only a small fraction of the California emission inventory for NOx and PM10 (CEC, 2003). Generation is provided by power plants that range in age and technology. Most recent additions to the in-State power plant fleet generally feature combined-cycle combustion turbines or simple-cycle combustion turbines (examples of both types have recently been approved or are already operating in Otay Mesa and Escondido). Table D.11-5 summarizes the emissions from sources that provide power to the electrical system.

Table D.11-5. Emissions from Statewide and Area Generation Sources

Power Plant	Type of Facility	Type of Fuel	CO ₂ Emissions (lb/MW-hr)	NO _x Emissions (lb/MW-hr)	PM ₁₀ Emissions (lb/MW-hr)
Existing Statewide Performance					
2003 Statewide Performance	Steam Boilers	Natural Gas	1320 to 1440	0.25 to 0.35	0.02 to 0.05
2003 Statewide Performance	Combined Cycle CT	Natural Gas	1100 to 1400	0.20 to 0.30	0.05 to 0.06
2003 Statewide Performance	Cogeneration	Varies	1600 to 1660	0.60 to 0.64	0.14 to 0.16
2003 Statewide Performance	Simple Cycle CT	Natural Gas	1300 to 1500	0.33 to 0.55	0.10 to 0.25
2003 Statewide Performance	IC Engines	Varies	1200 to 2000	2.0 to 10.0	0.10 to 0.18
2003 Statewide Performance	Waste to Energy	Waste/Biogas	500 to 700	3.5 to 4.0	0.26 to 0.30
Statewide Average for 2003	All Generation	All Fuels	600 to 800	0.33 to 0.40	0.05 to 0.06
Statewide Average for 2001	All Generation	All Fired Fuels	—	0.45	0.29
Statewide Average for 2001	Peaking	All Fired Fuels	—	0.38	—
Limits for New Sources					
CPUC Performance Standard	Baseload	All Fired Fuels	1100	—	—
CARB Recommendations	Combined Cycle CT	Natural Gas	—	0.10	—
CARB Recommendations	Simple Cycle CT	Natural Gas	—	0.20	—
CARB Recommendations	IC Engines	Natural Gas	—	0.50	0.06
CARB Recommendations	IC Engines	Waste/Biogas	—	1.90	—
SDAPCD Retrofit Requirements	Steam Boilers	Natural Gas	—	0.15	—
SDAPCD Retrofit Requirements	Steam Boilers	Liquid Fuel	—	0.40	—
Imperial-Mexicali Imports					
Intergen-La Rosita Power Complex	Combined Cycle CT	Natural Gas	Estd. 1160	0.09	-0.19
Sempra-Termoelectrica de Mexicali	Combined Cycle CT	Natural Gas	Estd. 970	0.07	-0.09

Sources: CEC Environmental Performance Report, June 23, 2005; CEC Environmental Performance Report, August 7, 2003; and CARB Guidance for the Permitting of Electrical Generation Technologies, July 2002; U.S. DOE, Environmental Assessment (EA-1391), December 2004.
Note: CT = Combustion Turbine, and IC Engine = Internal Combustion Engine

D.11.1.4 Border Region Air Quality

The California-Mexico border region is characterized by air quality conditions that tend to be worse than in coastal, suburban San Diego County. Imperial County (Calexico) persistently violates ambient air quality standards for PM₁₀ and CO. Calexico is the only area of the State that does not meet the CO standards, apparently due to motor vehicle emissions and pollution transported from Mexico (CARB, 2006a). Concentrations of particulate matter in Mexico also exceed the U.S. EPA standards in Tijuana (approximately 12 times per year) and Mexicali (more than 150 times per year) (CARB, 2002). Air quality problems in both Mexico and the United States can be attributed to a combination of local emissions and emissions from the opposite side of the border (CARB, 2001).

D.11.1.5 Sensitive Receptors

Some land uses are considered more sensitive to substantial pollutant concentrations 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 cardio-respiratory diseases. Residential areas are also considered to be sensitive 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 pol-

lutants present. Recreational land uses can also be moderately sensitive to localized elevated concentrations of air pollution. The land use survey that identifies sensitive receptors (e.g., residences, schools, hospitals, recreational facilities) in the general vicinity of the Proposed Project can be found in Section D.4, Land Use.

D.11.2 Environmental Setting for the Proposed Project

D.11.2.1 Imperial Valley Link

The Imperial Valley Link crosses BLM lands and various private properties before entering Anza-Borrego Desert State Park. These areas are largely agricultural and private undeveloped land. The proposed route would be west of El Centro and Calexico, where ozone, particulate matter, and carbon monoxide levels violate ambient standards, despite the very low population density compared to coastal southern California. Most of the Imperial Valley Link is within the Salton Sea Air Basin, administered by the ICAPCD. A small portion of this link occurs in San Diego County.

D.11.2.2 Anza-Borrego Link

The Anza-Borrego Link crosses the ABDSP surrounded by open space, recreational, and wilderness lands. The nearby Tamarisk Grove and Yaqui Well campgrounds would be sensitive to dust or other air pollution nuisances. Low humidity helps to provide clear vistas and relatively low haze within ABDSP, although blowing dust and wildfires are sources that occasionally reduce visibility within ABDSP. The administering local air district in the Anza Borrego Link is the SDAPCD.

D.11.2.3 Central Link

The Central Link spans rural and largely open mountainous lands south of Palomar Mountain from ABDSP to Santa Ysabel. Elevations are over 2,000 feet and generally higher than pollution-trapping thermal inversion layer of the coast. The administering local air district in the Central Link is the SDAPCD.

D.11.2.4 Inland Valley Link

The Inland Valley Link spans terrain generally at 2,000 feet elevation and below. In these west-facing mountain slopes of San Diego County, ozone levels are normally higher than in the populated coastal areas because of the prevailing onshore winds that bring ozone precursors to the western slopes. The Inland Valley Link includes rural residential areas, the Mount Gower Open Space, and suburban lands within San Diego Country Estates. Residences and other land uses along the route would be sensitive to dust or other air pollution nuisances. The administering local air district in the Inland Valley Link is the SDAPCD.

D.11.2.5 Coastal Link

The Coastal Link is urbanized with a broad mix of land uses including residences and schools within the City of San Diego and the City of Poway. The relatively dense population along this portion of the route would be sensitive to dust or other air pollution nuisances. Diverse pollution sources occur in this area from the stationary sources related to industry to all types of mobile sources. The administering local air district in the Coastal Link is the SDAPCD.

D.11.3 Applicable Regulations, Plans, and Standards

D.11.3.1 Ambient Air Quality Standards

Air quality is determined by measuring ambient concentrations of criteria pollutants, which are air pollutants for which acceptable levels of exposure can be determined and for which standards have been set. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Because of unique meteorological conditions in California, and because of differences of opinion by medical panels established by CARB and the U.S. EPA, there is diversity between State and federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. Table D.11-6 shows the standards currently in effect in California.

Air quality standards are designed to protect those people most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise, including outdoor recreational activity.

Table D.11-6. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour	0.09 ppm	—
	8-hour	0.07 ppm	0.08 ppm
PM10	24-hour	50 µg/m ³	150 µg/m ³
	Annual	20 µg/m ³	—
PM2.5	24-hour	—	35 µg/m ³
	Annual	12 µg/m ³	15 µg/m ³
CO	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9.0 ppm
NO ₂	1-hour	0.18 ppm	—
	Annual	0.030 ppm	0.053 ppm
SO ₂	1-hour	0.25 ppm	—
	24-hour	0.04 ppm	0.14 ppm
	1-year	—	0.03 ppm
Visibility-Reducing Particles	8-hour	Extinction coefficient 0.23/km, visibility of 10 miles due to particles when relative humidity < 70%	—

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; "—" = no standard
Source: CARB Ambient Air Quality Standards Table, February 2007

D.11.3.2 Attainment Status

Each geographic area is designated by either the U.S. EPA or CARB as a nonattainment area if violations of the ambient air quality standards are persistent. Both Imperial and San Diego Counties are classified as nonattainment areas for the State ozone standard, and like nearly every other area in the State of California, they are nonattainment areas with respect to the PM10 CAAQS. San Diego was successfully designated as an attainment area for the federal 1-hour ozone standard in 2003, but since the U.S. EPA established designations for the 8-hour ozone standard, both air basins have been designated nonattainment areas NAAQS. Since 1994, the U.S. EPA has found Imperial Valley to be in serious nonattainment for PM10. Federal PM2.5 standards are relatively recent, and although there is insufficient data to

determine attainment status of either air basin as a whole under the federal PM2.5 standards, the City of Calexico is designated nonattainment for State-level CO and PM2.5. A summary of attainment status within the project area is provided in Table D.11-7.

Table D.11-7. Attainment Status of Project Area Air Basins

Air Basin	Ozone		PM10		PM2.5		CO		NO ₂		SO ₂	
	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal
Salton Sea, Imperial County	N	N (Marginal)	N	N (Serious)	U/A	U/A	A	A	A	A	A	A
San Diego County	N	N (Subpart1)	N	U/A	N	U/A	A	A	A	A	A	A

Note: A = Attainment of Ambient Air Quality Standards; U/A = Unclassified/Attainment; N = Nonattainment.
"Subpart1" areas are subject to general, less-prescriptive requirements than "classified" nonattainment areas.
Source: CARB, 2006 (<http://www.arb.ca.gov/design/design.htm>) and U.S. EPA, 2006 (<http://www.epa.gov/region09/air/>).

D.11.3.3 Air Quality Plans and Regulations

Federal and State

The federal Clean Air Act, as amended in 1990, and the California Clean Air Act both require that air quality management plans be formulated demonstrating how the ambient air quality standards will be achieved in non-attainment areas. These laws also provide the basis for the implementing agencies to develop mobile and stationary source performance standards for permitting purposes. Certain ICAPCD rules and regulations are included in CARB's State Implementation Plan (SIP) for emissions reductions in Imperial Valley federal non-attainment areas. The SIP also sets deadlines for attainment of federal 8-hour ozone standards in both air management districts in the project area.

Emissions limitations are imposed upon sources of air pollutants by rules and regulations promulgated by the federal, State, or local agencies. Mobile sources of air pollutants and exhaust from off-road equipment are managed by federal and State agencies through emission performance standards and fuel formulation requirements and are exempt from SDAPCD and ICAPCD rules and regulations (e.g., SDAPCD Regulation XIV, Appendix A – Insignificant Units and ICAPCD Regulation II, Rule 202). Combustion and Heat Transfer Equipment). Portable sources and temporary activities that cause emissions of air contaminants are also managed through federal, State, and local programs mentioned below.

- **42 USC Section 7606(c), Title 40 CFR Section 51, Subpart W - Determining Conformity of General Federal Actions to State or Federal Implementation Plans and Title 40 CFR Section 93, Subpart B - Determining Conformity of General Federal Actions to State or Federal Implementation Plans.** These regulations ensure that federal actions conform to State and local plans for attainment. The BLM as federal lead agency must complete a conformity determination for the Proposed Project before it can be approved. The General Conformity rule prohibits federal agency approval of activities that conflict with an applicable implementation plan.
- **New Source Review Programs.** The U.S. EPA and local air districts administer the Prevention of Significant Deterioration (PSD) program (40 CFR 52.21) which prohibits new stationary sources from causing significant ambient impacts or adverse impacts to air quality related values (AQRV). Federal Land Managers (FLM), including the BLM, tribes, and the Cleveland National Forest, determine the relevant AQRVs for federal Class I areas. Federal Class I areas are national parks, national wilderness areas, and national monuments that are afforded special protection under federal Clean Air Act. The federal Class I areas administered by Cleveland National Forest within 100

kilometers the Proposed Project, including Future Transmission System Expansion, Connected Actions, Indirect Effects, or alternatives include: Agua Tibia Wilderness Area (7 miles, 11 km), San Jacinto Wilderness Area (40 miles, 64 km), and San Gorgonio Wilderness Area (50 miles, 80 km) shown on Figure D.11-1. The AQRVs that land managers have authority to protect are visibility, vegetation, fauna, soils, and water quality especially as it may be degraded by acid deposition from the atmosphere. The PSD program also ensures that new stationary sources do not cause air quality to deteriorate to a level that would violate the NAAQS for any area. Nonattainment New Source Review similarly applies to stationary sources that contribute pollutants to existing non-attainment areas, which can trigger requirements for the new emissions to fully offset with emission reductions that demonstrate progress towards achieving the NAAQS. Mobile sources and portable equipment typically used in construction activities are not subject to NSR, but power plants are examples of stationary sources that require preconstruction NSR permits.

- **U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program.** The California Clean Air Act mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the State ambient air quality standards. Off-road mobile sources include construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996. The standards require historically-unregulated construction equipment of model year 2000 and later to achieve NO_x, VOC, CO, and PM₁₀ exhaust standards, and for later model years Tier 2 (generally 2003 and later) and Tier 3 (generally 2007 and later) the standards are increasingly stringent. These standards and ongoing rulemaking jointly address emissions of NO_x and toxic particulate matter from diesel combustion. CARB is also developing a control measure to reduce diesel particulate matter emissions as well as NO_x from in-use (existing) off-road diesel equipment throughout the State. Owners and operators of off-road diesel equipment and vehicles would need to begin reporting to CARB in 2008 and meet fleet emissions targets in 2009. Public agencies and utilities are also subject to fleet rules to reduce diesel particulate matter. Construction contractors and SDG&E must register and track the use of this equipment, and if fleet-wide emission targets are not achieved, the highest-emitting equipment must either be retrofit with exhaust control devices, repowered with cleaner engines, or retired. This rule helps to ensure that relatively low emitting equipment would be used for construction activities.
- **CARB Portable Equipment Registration Program and Airborne Toxic Control Measure (ATCM) for Diesel Particulate Matter from Portable Engines.** The Portable Equipment Registration Program (PERP) allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate throughout California without having to obtain individual permits from multiple local air districts. The Portable Engine Airborne Toxic Control Measure (ATCM) requires all portable diesel engines to meet the most stringent of the federal or California emission standards for particulate matter from non-road engines in effect at the time of registration. Portable engines include those designed to be moveable and do not propel a vehicle. Concrete batch plants, standby and portable generators, compressors, and water pumps are examples of equipment that would be powered by portable engines. The ATCM applies to all diesel-fueled portable engines that are 50 horsepower and larger. Included are engines that are registered under CARB's PERP, engines with local air district permits, and engines that were historically exempt from district permits.

Salton Sea Air Basin

The Imperial County Air Pollution Control District is the primary agency responsible for planning, implementing, and enforcing federal and State air quality standards in Imperial County. The following rules and regulations apply to all sources in the jurisdiction of ICAPCD:

- **ICAPCD Regulation II – Rule 202, Exemptions.** Portable equipment holding a valid registration under the Statewide Portable Equipment Registration Program is not required to obtain a permit from the ICAPCD.
- **ICAPCD Regulation IV – Rule 401, Opacity of Emissions.** Prohibits any activity causing emissions dark or darker in shade as that designated as Number 1 on the Ringlemann Chart (20 percent opacity) for a period or periods aggregating more than three minutes in any hour.
- **ICAPCD Regulation IV – Rule 407, Nuisances.** Prohibits any activity that emits pollutants 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.
- **ICAPCD Regulation VIII – Rule 800, General Requirements for Control of Particulate Matter.** Limits emissions from construction and earthmoving activities (Rule 801). Requires dust control along unpaved access roads and unpaved staging areas or yards (Rule 805), for handling of materials (Rule 802), and for any material deposited on a paved surface (Rule 803). Dust control plans must be filed and approved by the ICAPCD.

Air Quality Management Plans. The ICAPCD established an attainment plan for PM10 in 1993 (PM10 SIP) and updated the plan in 2005 with the Regulation VIII rules that include the “best available control measures” for control of windblown particulate matter and particulate matter from travel on unpaved roads across Imperial County. The ICAPCD also oversees a Natural Events Action Plan that allows the ICAPCD to document and take into account high PM10 concentrations caused by qualified natural events, such as windstorms and wildfires. The Regulation VIII Rules and the Natural Events Action Plan are part of the regional plan to comply with PM10 standards. ICAPCD also maintains and implements an ozone attainment plan that depends on the CARB’s SIP to achieve reductions of ozone precursors from mobile sources.

San Diego Air Basin

The San Diego County Air Pollution Control District is the primary agency responsible for planning, implementing, and enforcing federal and State ambient standards in San Diego County. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD:

- **SDAPCD Regulation II – Permits, Rules 26 and 27 – Banking of Emission Reduction Credits and Mobile Source Emission Reduction Credits.** Allows creation of emission reduction credits for actual emission reductions that satisfy the criteria for being real, surplus, enforceable, federally enforceable, and quantifiable. Credits may be permanent or temporary in duration.
- **SDAPCD Regulation IV – Prohibitions, Rule 50 – Visible Emissions.** Prohibits any activity causing air contaminant emissions darker than 20 percent opacity for more than an aggregate of three minutes in any consecutive 60 minute time period.
- **SDAPCD Regulation IV – Prohibitions, Rule 51 – Nuisance.** Prohibits any activity causing the discharge of air contaminants that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- **SDACPD Rule XV – Federal Conformity.** Prohibits any federal actions that may be inconsistent with SDAPCD efforts to achieve the National Ambient Air Quality Standards.

Air Quality Management Plans, Ozone. The SDAPCD SIP of May 2007 indicates that local controls and State programs will allow the region to reach attainment of the federal 8-hour ozone standard by

2009. To demonstrate how the area will eventually meet the State ozone standards, the SDAPCD maintains the Regional Air Quality Strategy, most recently revised in 2004. The Regional Air Quality Strategy (RAQS) is the applicable air quality management plan that shows the measures and regulations that govern how the region will manage and reduce ozone precursors (NO_x and volatile organic compounds or VOCs). The RAQS control measures focus on stationary sources that are under the SDAPCD's authority. However, the emission inventories and emission projections in the RAQS consider all emission sources and all control measures, including those under the jurisdiction of the CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products) and the U.S. EPA (e.g., aircraft, ships, trains, and pre-empted off-road equipment). In the 2004 RAQS, SDAPCD proposed to evaluate new requirements addressing high emission rates from older peaking power plants and stationary reciprocating internal combustion engines. The RAQS also includes incentive programs (e.g., Carl Moyer Program) for reductions from heavy-duty diesel vehicles, off-road equipment, and school buses, etc.

Air Quality Management Plans, Particulate Matter. The California Clean Air Act does not require local districts to establish an air quality management plan for State PM₁₀ nonattainment, but the SDAPCD prepared a report on Measures to Reduce Particulate Matter in San Diego County, in response to 2003 Senate Bill 656 (SDAPCD, 2005). SDAPCD is considering rulemaking for source category-specific particulate matter control measures for emissions from residential wood combustion and fugitive dust from construction sites and unpaved roads.

City of San Diego

The City of San Diego does not allow air contaminants such as smoke, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, and any emissions that endanger human health, to emanate beyond the boundaries of the premises of the source (see 2006 San Diego Municipal Code, Chapter 14, Article 2, Division 7, "Off-Site Development Impact Regulations" paragraph 142.0710, "Air Contaminant Regulations").

Climate Change Policies and Regulations

California Global Warming Solutions Act of 2006 (AB32). This law requires CARB to adopt a statewide greenhouse gas emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. To achieve this, CARB has a mandate to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

CARB established the statewide emissions limit for 2020 at the December 6, 2007 meeting. At the same time, CARB also adopted regulations requiring mandatory GHG emissions reporting. The remainder of the timeline for AB32 implementation has CARB adopting a plan by January 1, 2009 that would indicate how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanisms, and other actions. Then, during 2009, CARB staff would draft rule language to implement its plan and hold public workshops on each measure including market mechanisms (CARB, 2006c).

Strategies that the State should pursue for managing GHG emissions in California are identified in the California Climate Action Team's Report to the Governor (CalEPA, 2006). Many focus on generally reducing consumption of petroleum across all areas of the California economy. Improvements in transportation energy efficiency (fuel economy) and alternatives to petroleum-based fuels are slated to provide substantial reductions by 2020 (CalEPA, 2006).

The CARB is also identifying “Discrete Early Actions” that can be implemented to reduce GHG emissions in the 2007 to 2012 timeframe. Initially, the three Early Actions approved by CARB in June 2007 were: the Low Carbon Fuel Standard; reduction of refrigerant losses from motor vehicle air conditioning maintenance; and increased methane capture from landfills. The Early Action list presently includes 44 measures (CARB, 2007b). One Early Action measure that has been approved by the CARB for further investigation is directly relevant to the Proposed Project:

- **Early Action # C17, 2-8: Reduce sulfur hexafluoride (SF₆) from electrical generation.** The U.S. EPA estimates that cost-effective SF₆ emissions reductions can be achieved by the electric power industry through operational improvements and equipment upgrades. Options to reduce SF₆ emissions include: leak detection and repair, SF₆ recycling, and employee education and training through a corporate policy of managing SF₆ (U.S. EPA, 2007). CARB staff will further investigate this measure to determine the quantity of SF₆ emissions attributed to the California electric power industry and the most appropriate and effective emission reduction equipment and practices. CARB consideration of this item is tentatively scheduled for 2011 (CARB, 2007b).

CPUC GHG Emissions Performance Standard. The Electricity GHG Emission Standards Act (SB1368) was enacted in 2006, and at its January 25, 2007 meeting, the CPUC adopted GHG requirements in the form of an Emissions Performance Standard for any long-term power commitments made by the State’s electrical utilities. Utilities are not allowed to enter into a long-term commitment to buy baseload power from power plants that have CO₂ emissions greater than 1,100 pounds (0.5 metric tons) per megawatt-hour (MWh), which is roughly the amount emitted by a combined cycle turbine fueled with natural gas. The GHG Emissions Performance Standard applies to new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or more, including contracts with power plants located outside of California.¹ On May 23, 2007, the CEC also adopted a performance standard consistent with that adopted by the CPUC.²

IPCC Key Mitigation Technologies and Practices for Energy Supply. In the absence of explicit State or federal GHG requirements at this time, international literature also provides policy direction. The Intergovernmental Panel on Climate Change provides a broad overview of climate change mitigation strategies that are available to policy-makers and decision-makers. The following strategies are identified by IPCC for decisions related to energy supply (IPCC, 2007).

- **Key mitigation technologies and practices currently commercially available.** Improved energy supply and distribution efficiency; fuel switching from coal to gas; nuclear power; renewable heat and power (hydropower, solar, wind, geothermal, and bioenergy); combined heat and power; early applications of Carbon Capture and Storage (e.g., storage of removed CO₂ from natural gas).
- **Key mitigation technologies and practices projected to be commercialized before 2030.** Carbon capture and storage for gas, biomass and coal-fired electricity generating facilities; advanced nuclear power; advanced renewable energy, including tidal and waves energy, concentrating solar, and solar photovoltaic.

¹ See Rule at http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm

² See CEC Docket # 06-OIR-1, <http://www.energy.ca.gov/ghgstandards/index.html>.

Environmental Impacts and Mitigation Measures for the Proposed Project

D.11.4 Significance Criteria and Approach to Impact Assessment

D.11.4.1 Significance Criteria

Air quality impacts are characterized using location-specific criteria. Each local air quality management or air pollution control district establishes the criteria to be used to assess impacts of a project on air quality. Air quality impacts of the Proposed Project would be considered significant if:

- The Proposed Project would be inconsistent with the applicable air quality plan.
- Activities associated with the Proposed Project would generate emissions of air pollutants that would exceed local air district CEQA thresholds (see Table D.11-8), or exceed federal General Conformity *de minimis* thresholds (see Table D.11-9), cause any adverse impact to air quality related values (AQRV) in a federal Class I area or State wilderness area, or create annual emissions within an attainment area greater than the U.S. EPA basic Prevention of Significant Deterioration emission thresholds of 250 tons per year of any pollutant.
- Activities associated with the Proposed Project would cause or contribute to any new violation of NAAQS or CAAQS in the project area; or interfere with the maintenance or attainment of NAAQS or CAAQS; or increase the frequency or severity of any existing violations of NAAQS or CAAQS; or delay the timely attainment of any standard, interim emission reduction, or other air quality milestone promulgated by the U.S. EPA, CARB, or local air quality agency.
- The Proposed Project would expose a substantial number of people to objectionable odors.
- The Proposed Project would expose sensitive receptors to substantial pollutant concentrations.

There are no State or local air district criteria for assessing the climate change impacts of projects, but for this project, climate change impacts would be considered significant if:

- Activities associated with the Proposed Project would result in greenhouse gas emissions substantially exceeding baseline greenhouse gas emissions. Consistent with the aim of AB32 to provide GHG reductions, overall Proposed Project GHG emissions would “substantially exceed” baseline emissions if the total effect of all project activities causes a net increase of GHG emissions over the baseline.
- The Proposed Project would increase the delivery of power produced at levels exceeding the CPUC Greenhouse Gas Emissions Performance Standard of 0.5 metric tons (1,100 lb) of CO₂ per megawatt-hour.

In this analysis, activities are project-specific effects that may cause a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. The following describes in more detail how these criteria are used.

Local Air District CEQA Thresholds. The ICAPCD CEQA Air Quality Handbook identifies thresholds of significance for projects in its jurisdiction (ICAPCD, 2005). The ICAPCD guidelines do not emphasize quantification of construction emissions, and the SDAPCD does not maintain guidelines for characterizing impacts from construction activity. In order to determine whether a significant impact would occur during construction, construction emissions are quantified because the Sunrise Powerlink would be a large project. Absent formal CEQA guidelines on construction thresholds from ICAPCD and SDAPCD, construction emissions greater than those that would trigger an air quality impact analysis, as found in the SDAPCD

regulations for stationary sources, are considered potentially significant. The trigger levels taken from the SDAPCD regulations are in the form of both daily peak and annual averages, which enables characterization of high levels of short-term activity common during construction. For simplicity, these thresholds are applied to construction activities regardless of the air basin. If construction-phase emissions exceed these thresholds for a stationary source air quality impact analysis, then construction activities have the potential to violate air quality standards or contribute substantially to existing violations. Emissions from long-term project operations in all locations are compared to thresholds defined in the ICAPCD CEQA Air Quality Handbook, which are more stringent than the stationary source trigger levels in the SDAPCD regulations. The significance thresholds are shown in Table D.11-8.

Table D.11-9. General Conformity Thresholds

Area	NOx or VOC	PM10	CO
Salton Sea Air Basin	100 ton/year	70 ton/year	n/a
San Diego Air Basin	100 ton/year	n/a	n/a
South Coast Air Basin	25 ton/year	70 ton/year	100 ton/year

n/a = not applicable.
Source: 40 CFR 93.153.

Table D.11-8. Air Quality Significance Thresholds

Significance Thresholds	NOx	VOC	PM10	PM2.5	CO	SOx
Construction Significance	250 lb/day	75 lb/day	100 lb/day	55 lb/day	550 lb/day	250 lb/day
Construction Significance	40 ton/year	14 ton/year	15 ton/year	10 ton/year	100 ton/year	40 ton/year
Operation Significance	55 lb/day	55 lb/day	150 lb/day	55 lb/day	550 lb/day	150 lb/day

Source: SDAPCD, Rule 20.2(d)(2) for construction; ICAPCD CEQA Air Quality Handbook, 2005 for operation; SDC, 2007 for VOC and PM2.5.

Ozone is not shown as a significance criterion because ozone is not directly emitted from stationary or mobile sources; rather it is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants, specifically NOx and VOCs. Therefore, it cannot be directly regulated. Local air districts have not established separate significance thresholds for PM2.5, but the recommendations of the San Diego County Department of Planning and Land Use are used here (SDC, 2007).

Federal General Conformity Rule Thresholds. In federal nonattainment areas, the federal General Conformity rule would provide additional significance criteria. In Imperial County and San Diego County, there are no applicable General Conformity thresholds for pollutants other than ozone precursors and PM10 because these areas attain the federal ambient air quality standards for all other pollutants. The General Conformity applicability thresholds for the nonattainment areas along the project route are given in Table D.11-9.

The General Conformity rule *de minimis* emission thresholds shown in Table D.11-9 apply to emissions in a federal nonattainment area caused by a federal action. Per Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the BLM must make a determination of whether the Proposed Project (i.e., federal action) “conforms” to the applicable State Implementation Plan (i.e., the ICAPCD 1993 PM10 SIP and ozone SIP or the SDAPCD ozone SIP, see Section D.11.3.3). However, if the total direct and indirect emissions caused by a Proposed Project are less than the General Conformity rule *de minimis* emission thresholds, the Proposed Project would be exempt from performing a comprehensive Air Quality Conformity Analysis, because it would be presumed to conform to the SIP within the nonattainment areas.

The final General Conformity determination will be made by the BLM prior or to or in conjunction with project approval. The estimated nonattainment area pollutant emissions, the preliminary findings with regards to the General Conformity *de minimis* levels, and the applicability of a full conformity

determination are described in this EIR/EIS as part of the Overall Impacts of Proposed Project (Section D.11.13).

D.11.4.2 Applicant Proposed Measures

Table D.11-10 shows SDG&E’s Applicant Proposed Measures for air quality.

APM No.	Description
AQ-APM-1	For activities in Imperial County, the Project will comply with ICAPCD Rule 800 (Fugitive Dust Requirement for Control of Fine Particulate Matter [PM10]). A Dust Control Plan for construction activities would be filed with the ICAPCD.
AQ-APM-2	Prohibit construction grading on days when the wind gusts exceed 25 mph to the extent feasible to control fugitive dust. All trucks hauling soil and other loose material will be covered or maintain at least two feet of freeboard. Snow fence-type windbreaks will be erected in areas identified as needed by SDG&E. Vehicle speeds will be limited to 15 mph on unpaved (no gravel or similar surfacing material) roads. Unpaved roads will be treated by watering as necessary. Soil stabilizers will be applied to inactive construction areas on an as-needed basis. Exposed stockpiles of soil and other excavated materials will be contained within perimeter silt fencing, watered, treated with soil binders, or covered as necessary.
AQ-APM-3	To minimize mud and dust from being transported onto paved roadway surfaces, pave or gravel, use rattle plates, or apply water at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface. SDG&E will implement this measure where applicable and not conflicting with other requirements.
AQ-APM-4	If suitable park-and-ride facilities are available in the Project vicinity, construction workers will be encouraged to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker show-up time and the Project’s construction schedule.
AQ-APM-5	To the extent feasible, unnecessary construction vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a “common sense” approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as a part of pre-construction conferences. Those briefings will include discussion of a “common sense” to vehicle use.

Source: SDG&E, PEA, 2006.

D.11.4.3 Impacts Identified

Table D.11-11 lists the impacts identified for the Proposed Project and alternatives, along with the significance of each impact. Detailed discussions of each impact and the specific locations where each is identified are presented in the following sections. Impacts are classified as Class I (significant, cannot be mitigated to a level that is less than significant), Class II (significant, can be mitigated to a level that is less than significant), Class III (adverse, but less than significant), and Class IV (beneficial).

Table D.11-11. Impacts Identified – Proposed Project – Air Quality

Impact No.	Description	Impact Significance
Proposed Project, Future Transmission System Expansion, and Connected Actions		
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Class I
AQ-2	Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Class III
AQ-3	Power generated during transmission line operation would cause emissions from power plants.	Class III & IV
AQ-4	Project activities would cause a net increase of greenhouse gas emissions.	Class I

Overall air quality impacts are described in Section D.11.13. These are characterized separately because they require consideration of the aggregate impacts of the project, including construction and operation of all project components, and the impacts extend beyond each link. Section D.11.13 describes the overall impacts related to power generated during transmission line operation (Impact AQ-3) and the overall “net increase” of GHG emissions (Impact AQ-4).

D.11.5 Imperial Valley Link Impacts and Mitigation Measures

Environmental Impacts and Mitigation Measures

Construction Impacts

Construction activities would cause emissions of criteria pollutants, odors, toxic air contaminants, and greenhouse gases in all areas of the project. The criteria pollutant impacts for each link are described below, and the overall impacts of criteria pollutants, odors, TACs, and GHGs are described in Section D.11.13.

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

During the anticipated nine months necessary to build the Imperial Valley Link, concurrent construction activity would be necessary with multiple crews at separate locations. During construction, emissions that would be generated within the project ROW and substation boundaries would principally consist of exhaust emissions from heavy-duty diesel and gasoline-powered construction equipment and fugitive particulate matter (dust) from travel on unpaved surfaces. Beyond the boundaries of the ROW and substations, exhaust emissions would also be caused by workers commuting to and from the project sites, from trucks hauling conductor, pole segments, and other equipment and supplies to the construction sites, dump trucks hauling away dirt or vegetation debris, and trucks delivering fresh concrete to pole sites along the corridor.

Construction activities would also lead to an increased risk of accidental wildfire, which would substantially increase the adverse air quality impacts caused by construction, but the probability of a large-scale wildfire is generally low in the Imperial Valley Link (see Section D.15.5).

Diesel-fired portable engines and equipment would be used to provide temporary power during construction. Concrete batch plants, standby and portable generators, compressors, and water pumps are examples of equipment that would be powered by portable engines. Because all of these engines that are 50 horsepower or greater will require registration under the Statewide Portable Equipment Registration Program and the ATCM, they will meet exhaust emission limits established by CARB and the local air districts.

General construction, structure foundation excavation, structure delivery and setup, wire installation, fugitive dust from travel along the ROW, and substation work could each occur simultaneously on any given day of construction. To characterize the air quality impact, SDG&E prepared an estimate of maximum daily construction activity that is duplicated in Appendix 10 of this EIR/EIS. Several different activities could occur simultaneously, and the activities in the emission calculations assume implementation of APMs in Table D.11-10. Based on emission factors established by U.S. EPA, CARB, and the South Coast Air Quality Management District, independent emission calculations and the emission estimation methodology for all construction-related activities are provided in Appendix 10 of this EIR/EIS.

The estimated construction emissions, which include the emission reduction strategies of air quality APMs in Table D.11-10, are shown in Table D.11-12.

Table D.11-12. Daily Emissions from Construction of Transmission Line in the Imperial Valley Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	1,026.0	139.2	54.6	54.6	418.2	24.3	95,980.3
Off-Road Equipment (Substation Modifications)	109.7	11.4	4.1	4.1	31.0	0.1	10,181.7
On-Road Vehicles	364.4	46.7	16.7	16.7	344.5	0.5	51,967.1
Fugitive Dust	—	—	2,000.9	221.3	—	—	—
Daily Activity Totals	1,500.1	197.2	2,076.3	296.7	793.7	25.0	158,129.1
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Dust and exhaust emissions generated during construction could create nuisance conditions and contribute to violations of the ambient air quality standards. In Imperial County, the ICAPCD requires that visible plumes of fugitive dust be less than 20 percent opacity. The ICAPCD also requires adoption of a Dust Control Plan, which would be met with implementation of AQ-APM-1.

Many of the strategies that can be used to reduce emissions during project construction would be implemented through the APMs and compliance with ICAPCD dust control requirements. Dust suppression would avoid nuisances in areas with nearby sensitive receptors (identified in Section D.4, Land Use). Additionally, strategies minimizing individual commuter trips (AQ-APM-4) and unnecessary idling of equipment (AQ-APM-5) would conserve fuel, avoid nuisance conditions, and reduce emissions. The APMs listed in Table D.11-10 would reduce the impact of construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. The following recommendations shown in Mitigation Measures AQ-1a and AQ-1b, which are recommended as part of the ICAPCD CEQA Air Quality Handbook (ICAPCD, 2005), would reduce construction emissions. The ICAPCD also recommends implementing off-site mitigation measures in order to offset emissions from large projects. The off-site mitigation options recommended in the ICAPCD CEQA Air Quality Handbook are discussed in Overall Impacts of Proposed Project (Section D.11.13). With implementation of the APMs in conjunction with the identified mitigation measures, this impact would remain significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads. SDG&E shall: (a) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas if construction activity causes persistent visible emissions of fugitive dust beyond the work area; (b) pre-water sites for 48 hours in advance of clearing; (c) reduce the amount of disturbed area where possible; (d) all dirt stock-pile areas should be sprayed daily as needed; (e) cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads; (f) pre-moisten, prior to transport, import and export dirt, sand, or loose materials; (g) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets or wash trucks and equipment before entering public streets; (h) plant vegetative ground cover in disturbed areas as soon as possible following construction; (i) apply chemical soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days); and (j) prepare and file with the ICAPCD, SDAPCD, BLM, and CPUC a Dust Control Plan that describes how these measures would be implemented and monitored at all locations of the project.

AQ-1b Use low-emission construction equipment. SDG&E shall maintain construction equipment per manufacturing specifications and use low-emission equipment described here. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Sec. 2423(b)(1) unless that engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. If any engine larger than 100 hp does not meet Tier 1 standards, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless the engine manufacturer indicates that the use of such devices is not practical for that particular engine type. SDG&E shall substitute small electric-powered equipment for diesel- and gasoline-powered construction equipment where feasible.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the project components. Maintenance and inspections activities would be similar throughout the project area and would create the only notable direct air quality impact related to the project. Operation of the Proposed Project would not require a substantial number of new vehicle trips compared to the existing conditions. No new permanent employees would be needed to operate the Proposed Project, which means that the change in emissions from worker commute trips would be minor. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

The Imperial Valley Link would facilitate transmission of power from power plants, including those within and near Imperial County. Existing fossil fuel-fired plants in Imperial County could increase operation (CAISO, 2007), but the power plant emissions would not significantly change because they would need to comply with previously permitted limits. For the Imperial Valley Link, this impact would be adverse but less than significant impact (Class III). See also the discussion in Overall Impacts of Proposed Project (Section D.11.13.2).

Modifications to Imperial Valley Substation

Construction to install additional equipment at this substation would occur within the existing substation boundaries. There are no sensitive receptors within 1,000 feet of the existing substation. The air quality impacts associated with the construction of the Imperial Valley Substation modifications would be similar to the construction impacts of the remainder of the transmission line. The APMs listed in Table D.11-10 would reduce these impacts, but as described for the remainder of the Imperial Valley Link, the construction-phase emissions (Impact AQ-1) would exceed the significance thresholds. With Mitigation Measures AQ-1a and AQ-1b, the impact would remain significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified substation (Impact AQ-2, Class III).

D.11.6 Anza-Borrego Link Impacts and Mitigation Measures

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

During the anticipated nine months necessary to build the Anza-Borrego Link, concurrent construction activity would be necessary with multiple crews at separate locations. Emissions would occur from construction equipment and activities that would be similar along the entire proposed 500 kV segment and from trenching and excavating activities to locate lower voltage circuits underground. For excavation of trenches, dust control is usually appropriate in order to avoid a local nuisance. Air quality impacts in the Anza-Borrego Link would be similar to those of the Imperial Valley Link, with the addition of the trenching and excavating equipment.

Construction equipment and vehicle emissions would result in temporary air quality impacts as a result of dust and exhaust. To characterize the air quality impact, independent emission calculations for all construction-related activities are provided in Appendix 10 of this EIR/EIS. The Anza-Borrego Link emissions are shown in Table D.11-13.

Table D.11-13. Daily Emissions from Construction of Transmission Line in the Anza-Borrego Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	1,026.0	139.2	54.6	54.6	418.2	24.3	95,980.3
Off-Road Equipment (Substation Modifications)	—	—	—	—	—	—	—

Table D.11-13. Daily Emissions from Construction of Transmission Line in the Anza-Borrego Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
On-Road Vehicles	125.8	15.9	5.8	5.8	116.6	0.2	17,746.6
Fugitive Dust	—	—	699.1	81.6	—	—	—
Daily Activity Totals	1,151.8	155.1	759.5	141.9	534.8	24.5	113,727.0
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

State wilderness occurs near the Anza-Borrego Link. The main concerns in these areas would be the potential impact of the project on visibility and damage to vegetation primarily due to fugitive dust and equipment exhaust emissions. New stationary sources that emit at high elevations and from stacks with high flow rates can adversely affect visibility and vegetation at distant areas. Construction activities would not involve major stationary sources that could permanently affect air quality and visibility in a federal Class I area, but federal Class I areas or State wilderness areas would be exposed to construction emissions for the two-year duration of construction. Construction emissions would be dispersed across two counties and would occur near the ground level, which means they would have limited ability to cause notable changes at distant wilderness areas. Over large areas, project construction emissions would combine with large quantities of existing contaminants carried by the ambient air. Although construction contaminants emitted over the project area could affect long-range visibility and increase haze during the two years of construction, the diffuse and intermittent nature of the sources, and the short-term nature the activities, ensure that construction would not significantly affect visibility and vegetation.

Construction activities would also lead to an increased risk of accidental wildfire with the highest probability in the Ranchita Fireshed west of ABDSP. If a wildfire is ignited by construction activities, vastly increased combustion contaminants especially particulate matter, increased adverse health effects, and diminished visibility would be among the air quality impacts (described in Section D.15.6). If triggered by construction activities, wildfire emissions would be naturally unpredictable but likely significant over a short-term. Wildfire emissions are included in the regional inventory for attainment planning (Table D.11-4). Vegetation lost during a wildfire would eventually regenerate which would replace any carbon sink lost in a wildfire. Mitigation identified in Section D.15 would mitigate adverse air quality impacts by reducing the likelihood of construction triggering a wildfire.

Many of the strategies that can be used to reduce construction emissions would be implemented through the APMs. The APMs listed in Table D.11-10 would reduce the impact of dust and exhaust emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. The SDAPCD would not require preparation of a dust control plan, but the SDAPCD requires that visible plumes of fugitive dust be less than 20 percent opacity. Mitigation Measure AQ-1a would force SDG&E to develop a plan similar to that required in Imperial County for dust control along all links. This mitigation would be consistent with the SDAPCD report titled Measures to Reduce Particulate Matter in San Diego (SDAPCD, 2005). Mitigation Measures AQ-1a and AQ-1b would reduce the impacts of dust and exhaust emissions further, but as with the Imperial Valley Link, the construction-phase emissions would be significant and unavoidable (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation, maintenance, and inspection activities in the Anza-Borrego Link would be similar to those of the Imperial Valley Link. The Proposed Project would not require a substantial number of new vehicle trips compared to the existing conditions. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Section D.15). Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

D.11.7 Central Link Impacts and Mitigation Measures

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

During the anticipated 13 to 14 months necessary to build the Central Link, concurrent construction activity would be necessary with multiple crews at separate locations. General construction, structure foundation excavation, structure delivery and setup, wire installation, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction. To characterize the air quality impact, independent emission calculations for all construction-related activities are provided in Appendix 10 of this EIR/EIS. The estimated Central Link construction emissions are compared with the thresholds in Table D.11-14.

Use of construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary air quality impacts. Accidental wildfire could cause adverse air quality impacts that would be avoided by reducing the likelihood of construction triggering a wildfire (described further in Sections D.15.7 and D.15.8). The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce the impacts of dust and exhaust emissions further, but as described for the Imperial Valley and Anza-Borrego Links, the construction-phase emissions would be significant and unavoidable (Class I).

Table D.11-14. Daily Emissions from Construction of Transmission Line in the Central Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Off-Road Equipment (Substation Modifications)	—	—	—	—	—	—	—
On-Road Vehicles	146.7	18.8	6.7	6.7	138.3	0.2	20,894.4
Fugitive Dust	—	—	856.2	102.3	—	—	—
Daily Activity Totals	1,122.2	152.8	915.6	161.6	542.1	24.5	112,444.1
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation, maintenance, and inspection activities of the Central Link would be similar to those of the Imperial Valley Link, except because vegetation typical in the Central Link has a taller mature height, vegetation clearing activity would be more frequent. This may result in nominally more emissions in the Central Link, but vegetation clearing would occur only occasionally, and the associated emissions would not contribute to a potentially significant impact. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Sections D.15.7 and D.15.8). Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Proposed Central East Substation

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities at the proposed Central East Substation would involve many of the same types of construction equipment that would be associated with construction of the transmission line, and the resulting air quality impacts would be similar. Table D.11-15 shows the maximum emissions from all activities related to substation work. Construction of the proposed Central East Substation, as part of the overall proposed construction activities, would cause significant air quality impacts. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust

emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions would be significant and unavoidable (Class I).

Table D.11-15. Daily Emissions from Construction of the Central East Substation

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	—	—	—	—	—	—	—
Off-Road Equipment (Substation Modifications)	764.8	80.9	30.7	30.7	270.1	0.7	70,104.6
On-Road Vehicles	2.0	1.9	0.2	0.2	20.5	0.0	1,844.7
Fugitive Dust	—	—	627.5	80.5	—	—	—
Daily Activity Totals	766.8	82.9	658.3	111.4	290.6	0.8	71,949.3
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation of the proposed Central East Substation would cause minor vehicular traffic for maintenance and inspections, and the substation would be remotely operated. Direct emissions from occasional vehicular traffic to the substation would cause an adverse but less than significant impact (Class III).

D.11.8 Inland Valley Link Impacts and Mitigation Measures

Environmental Impact and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities, especially site preparation, excavation of trenches, and installing structure foundations, would involve travel on unpaved roads and surfaces and material handling that would create fugitive dust and other criteria pollutant emissions from equipment. Material loading, unloading, and piling for trenching and excavation can cause varying emissions depending on soil conditions, wind, and moisture, and dust control is usually appropriate to avoid local nuisances. During the anticipated 12 months necessary to build the Inland Valley Link, concurrent construction activity would be necessary with multiple crews at separate locations. Emissions from construction of the Inland Valley Link are shown in Table D.11-16 below.

Table D.11-16. Daily Emissions from Construction of Transmission Line in the Inland Valley Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Off-Road Equipment (Substation Modifications)	96.8	10.1	3.7	3.7	27.5	0.1	8,991.0
On-Road Vehicles	134.5	17.7	6.2	6.2	132.6	0.2	19,639.0
Fugitive Dust	—	—	800.0	94.5	—	—	—
Daily Activity Totals	1,206.8	161.8	862.5	157.0	563.9	24.6	120,179.6
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Use of construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary air quality impacts. Accidental wildfire could cause adverse air quality impacts that would be avoided by reducing the likelihood of construction triggering a wildfire (described further in Sections D.15.9 and D.15.10). The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce the dust and exhaust impacts further, but as described for other links, the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation, maintenance, and inspection activities of the Inland Valley Link would be similar to those of the Imperial Valley Link. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Section D.15). Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

D.11.9 Coastal Link Impacts and Mitigation Measures

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities, especially site preparation, excavation of trenches, and installing structure foundations, would involve travel on unpaved roads and surfaces and material handling that would create fugitive dust. Material loading, unloading, and piling for trenching and excavation can cause varying emissions depending on soil conditions, wind, and moisture, and dust control is usually appropriate to avoid local nuisances. During the anticipated 12 months necessary to build the Coastal Link, concurrent construction activity would be necessary with multiple crews at separate locations. Emissions from construction of the Coastal Link are shown in Table D.11-17 below.

Table D.11-17. Daily Emissions from Construction of Transmission Line in the Coastal Link

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment (Transmission Line)	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Off-Road Equipment (Substation Modifications)	170.1	18.9	6.8	6.8	51.6	0.2	15,647.6
On-Road Vehicles	71.5	10.3	3.3	3.3	79.8	0.1	11,220.6
Fugitive Dust	—	—	479.0	59.2	—	—	—
Daily Activity Totals	1,217.1	163.2	541.8	122.0	535.2	24.5	118,417.9
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Use of construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary air quality impacts. Accidental wildfire could cause adverse air quality impacts that would be avoided by reducing the likelihood of construction triggering a wildfire (described further in Section D.15.11). The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce the dust and exhaust impacts further, but as described for other links, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation, maintenance, and inspection activities of the Coastal Link would be similar to those of the Imperial Valley Link. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Section D.15). Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Modifications to Sycamore Canyon Substation

All necessary upgrades to the existing Sycamore Canyon Substation would be conducted within the fenced area of the facility. Construction activities would involve similar construction equipment as proposed for the remainder of the transmission line, and the resulting air quality impacts would be similar. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified substation (Impact AQ-2, Class III).

Modifications to Peñasquitos Substation

All necessary upgrades to the existing Peñasquitos Substation would be conducted within the fenced area of the facility. Emissions from activities to modify the substation would be similar to the construction impacts of the remainder of the transmission line. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified substation (Impact AQ-2, Class III).

D.11.10 Other System Upgrades – Impacts and Mitigation Measures

Reconductor Sycamore Canyon to Elliot 69 kV Line

The reconductor of existing facilities within the existing Sycamore-Elliot ROW would use equipment and construction methods similar to those of the proposed new transmission lines in the vicinity of the Sycamore Canyon Substation. The air quality impacts associated with the construction, operation, and maintenance of the reconductor would be similar to those of the Proposed Project. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified line (Impact AQ-2, Class III).

Modifications to San Luis Rey Substation

As with proposed modifications to Peñasquitos Substation, all upgrades to the existing San Luis Rey Substation would be conducted within the fenced area of the facility, and construction-phase impacts would be similar to those of other construction activities for the Proposed Project. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified substation (Impact AQ-2, Class III).

Modifications to South Bay Substation

As with proposed modifications to Peñasquitos Substation, all necessary upgrades to the existing South Bay Substation would be conducted within the fenced area of the facility, and construction-phase impacts would be similar to those of other construction activities for the Proposed Project. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but the construction-phase emissions (Impact AQ-1) would be significant and unavoidable (Class I). No notable source of emissions would be associated with operation of the modified substation (Impact AQ-2, Class III).

D.11.11 Future Transmission System Expansion

The Proposed Project would facilitate the possible future construction of additional 230 kV and 500 kV transmission lines. These lines are not proposed at this time, but because the construction of the Proposed Project would include a substation and create new transmission corridors that could be used by these additional circuits, impact analysis is presented in this EIR/EIS.

D.11.11.1 Environmental Setting – 230 kV Future Transmission System Expansion

As described in Section B.2.7, the Central East Substation that would be built as a part of the Proposed Project would accommodate up to six 230 kV circuits. Only two circuits are proposed by SDG&E at this time, but construction of additional 230 kV circuits out of the Central East Substation may be required within the next 10 years. This section considers the impacts of construction and operation of these potential future transmission lines. Based on information provided by SDG&E, there are four substation endpoints and five routes that would be most likely for these future lines; each is addressed below. Figure B-12a illustrates the potential routes of each of the 230 kV transmission lines.

Central East Substation to Sycamore Canyon or Peñasquitos Substation

The new 230 kV line would most likely follow the proposed SRPL project route from the Central East Substation to Sycamore Canyon Substation or Peñasquitos Substation. Therefore, the environmental setting for the new 230 kV line would be the same as for the proposed SRPL project.

Central East Substation to Mission Substation

The new 230 kV line would most likely follow the proposed SRPL project route from the Central East Substation to the Sycamore Canyon Substation. Therefore, the environmental setting for the future 230 kV line would be the same as for the proposed SRPL project from these locations. From the Sycamore Canyon Substation to the Mission Substation, the environmental setting would be the same as the Coastal Link described above. The administering local air district is the SDAPCD.

Central East Substation to Los Coches Substation

The future 230 kV line would most likely follow the proposed SRPL project route from the Central East Substation to 1.0 mile south of the Creelman Substation (MP 122.2) in the Town of Ramona. Therefore, the environmental setting for the future 230 kV transmission line would be the same as for the proposed SRPL project from these locations. From the Creelman Substation to the Los Coches Substation, the environmental setting would be the same as the Inland Valley Link described above. The administering local air district is the SDAPCD.

Central East Substation to Escondido Substation

Northern Route. From the proposed Central East Substation, the future 230 kV transmission line route would travel west through Vista Irrigation District land paralleling the proposed SRPL route for approximately 6.6 miles to its intersection with SR79. At SR79 the line would diverge from the proposed SRPL route and would head north parallel to SR79 for approximately 1.2 miles to the intersection of Highway S2 with SR79 at the existing Warner Substation. From there the route would parallel the existing 69 kV corridor west across open space owned by Vista Irrigation District north of Lake Henshaw and then it would turn southwest, following the northwest edge of the lake to SR76.

At SR76 the route would turn west-northwest paralleling SR76 for 13.3 miles following the existing Warners-Rincon 69 kV transmission corridor across and/or bordering parcels of the Cleveland National Forest for approximately 4 miles and across La Jolla Reservation for 6 miles, crossing Cedar Creek, Plaisted Creek and Potrero Creek, and then into Rincon Substation, which is just north of the Rincon Reservation at the Highway S6 intersection with SR76. The hilly route along SR76 is primarily agricultural/open space with scattered rural residences.

At Rincon Substation the route would diverge from SR76 and would follow the existing Rincon-Escondido 69 kV corridor, generally parallel to Highway S6 south, crossing Potrero Creek, San Luis Rey River and a tributary to Paradise Creek, through the Rincon Reservation for 3 miles passing through some medium density single family residential and commercial land uses. South of the Rincon Reservation, the route would turn west in the Valley Center Substation area generally paralleling Highway S6, passing on the west side of Hellhole Canyon County Open Space Preserve (approximately 0.30 miles from the ROW), and then would turn south on the east side of Highway S6 for 1.6 miles before turning southwest, crossing Highway S6, and entering the City of Escondido after approximately 0.75 miles. The new line could run adjacent to or cross Daley Ranch near Escondido. In the City of Escondido, the route would turn south and then southwest for approximately 8 miles following the existing 69 kV corridor into Escondido Substation.

For this Future Expansion line, the environmental setting would be the same or similar to the Central Link, Imperial Valley Link, and Coastal Link described above. The administering local air district is the SDAPCD.

Southern Route. This route would follow the “Central East Substation to Peñasquitos Substation” route described above, diverging from the proposed route at the Chicarita Substation. From the existing Chicarita Substation, the route would turn north along existing 230 kV and 69 kV transmission lines for approximately 6.2 miles, then it would jog west-northwest for one mile (following the existing lines), then follow the existing 69 kV line east and north along the west bank of Lake Hodges. It would continue north, in and out of the City of Escondido for another 7.2 miles to terminate at Escondido Substation. The environmental setting this segment is the same as for the Northern Route, above.

D.11.11.2 Environmental Impacts – 230 kV Future Transmission System Expansion

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities, especially site preparation, excavation of trenches, and installing structure foundations, would involve travel on unpaved roads and surfaces and material handling that would create fugitive dust. Use of construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary air quality impacts from dust and equipment exhaust. Accidental wildfire could cause adverse air quality impacts that would be avoided by reducing the likelihood of construction triggering a wildfire (described further in Section D.15). As with the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

All future 230 kV transmission lines that are part of the Future Expansion would require new applications by SDG&E, followed by preparation of project-level environmental documents and separate approvals from the CPUC prior to permitting and construction. During the environmental review process for the Future Expansion transmission lines, detailed mitigation measures would be identified to minimize the construction impacts. Implementation of Mitigation Measures AQ-1a (suppress dust at all work or staging areas and on public roads) and AQ-1b (use low-emission construction equipment), as well as mitigation measures containing provisions similar to those identified in the APMs identified for the remainder of the Proposed Project (Mitigation Measures AQ-1c through AQ-1g) would reduce the impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

AQ-1c Comply with Imperial County dust control requirements. For activities in Imperial County, the project will comply with ICAPCD Rule 800 (Fugitive Dust Requirement for Control of Fine Particulate Matter [PM10]). A Dust Control Plan for construction activities would be filed with the ICAPCD. [AQ-APM-1]

AQ-1d Implement dust reduction measures. The following measures shall be implemented. [AQ-APM-2]

- Prohibit construction grading on days when the wind gusts exceed 25 mph to the extent feasible to control fugitive dust.
- All trucks hauling soil and other loose material will be covered or maintain at least two feet of freeboard.

- Snow fence-type windbreaks will be erected in areas identified as needed by SDG&E.
- Vehicle speeds will be limited to 15 mph on unpaved (no gravel or similar surfacing material) roads.
- Unpaved roads will be treated by watering as necessary.
- Soil stabilizers will be applied to inactive construction areas on an as-needed basis.
- Exposed stockpiles of soil and other excavated materials will be contained within perimeter silt fencing, watered, treated with soil binders, or covered as necessary.

AQ-1e Prevent transport of mud and dust. To minimize mud and dust from being transported onto paved roadway surfaces, pave or gravel, use rattle plates, or apply water at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface. SDG&E will implement this measure where applicable and not conflicting with other requirements. [AQ-APM-3]

AQ-1f Encourage carpooling. If suitable park-and-ride facilities are available in the project vicinity, construction workers will be encouraged to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker show-up time and the project's construction schedule. [AQ-APM-4]

AQ-1g Minimize vehicle idling. To the extent feasible, unnecessary construction vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as a part of pre-construction conferences. Those briefings will include discussion of a "common sense" to vehicle use. [AQ-APM-5]

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the 230 kV Future Expansion. Maintenance and inspections activities would be similar throughout the project area and would be the only notable direct air quality impact related to the project. Once operational, the Future Expansion would require few new vehicle trips compared to the existing conditions. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Section D.15). Direct emissions from project vehicular traffic for maintenance activities would cause a negligible, less than significant impact, and mitigation measures are not required (Class III).

D.11.11.3 Environmental Setting – 500 kV Future Transmission System Expansion

As described in Section B.7.2 and illustrated in Figure B-12b, the potential Future 500 kV Circuit would connect the proposed Central East Substation to the Southern California Edison (SCE) transmission system at a new substation north of Interstate 15 (I-15), about 20 miles west of SCE’s Valley Substation.

The 500 kV Future Expansion would occur partially in San Diego County, where the air quality setting would be the same or similar to the Central Link, Imperial Valley Link, and Coastal Link described above. The administering local air district in San Diego County is the SDAPCD.

Attainment Status. The northern portion of the 500 kV Future Expansion would be in Riverside and Orange Counties, which are administered by the South Coast Air Quality Management District (SCAQMD). A summary of the air quality status of the South Coast Air Basin, relative to the National and State Ambient Air Quality Standards is provided in Table D.11-18.

Table D.11-18. Attainment Status for Riverside and Orange Counties

Air Basin	Ozone		PM10		PM2.5		CO		NO ₂		SO ₂	
	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal
Riverside County	N	N (Extreme)	N	N (Serious)	N	N	A	N	A	A	A	A
Orange County	N	N (Severe)	N	N (Serious)	N	N	A	N	A	A	A	A

Note: A = Attainment of Ambient Air Quality Standards; U/A = Unclassified/Attainment; N = Nonattainment.
Source: CARB, 2006 (<http://www.arb.ca.gov/design/design.htm>) and U.S. EPA, 2006 (<http://www.epa.gov/region09/air/>).

South Coast Air Basin Regulations. Activities in Riverside and Orange Counties would be subject to SCAQMD rules and regulations. Applicable regulations for visible emissions, nuisances, and fugitive dust include:

- SCAQMD Rule 401 – Visible Emissions
- SCAQMD Rule 402 – Nuisance
- SCAQMD Rule 403 – Fugitive Dust
- SCAQMD Rule 403.1 – Supplemental Fugitive dust control requirements for Coachella Valley Sources

These rules limit the visible dust emissions from construction sites, prohibit emissions that can cause a public nuisance, and require the prevention and reduction of fugitive dust emissions. Additionally, depending on the location and size of the construction site(s) fugitive dust control plan(s) may be required to be submitted to SCAQMD for approval before initiating construction. The fugitive dust rules include measures that aim to reduce fugitive dust emissions from specific dust causing activities. These measures may include, adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities (such as during periods of high winds).

Local Air District CEQA Thresholds. The SCAQMD recommends regional and localized significance thresholds be used to characterize air quality impacts in project-level CEQA documents. Characterizing the impacts of the 500 kV Future Expansion in the SCAQMD is based on a qualitative analysis of the emissions relative to the emissions of the remainder of the Proposed Project. Any significant impact under the regional thresholds is presumed to also cause a significant localized impact.

Federal General Conformity Rule Thresholds. The Riverside County and Orange County portions of the South Coast Air Basin are federal nonattainment areas, and the federal General Conformity rule provides significance criteria for ozone precursors, PM10, and carbon monoxide. The General Conformity applicability thresholds for the South Coast Air Basin are given in Table D.11-9.

D.11.11.4 Environmental Impacts – 500 kV Future Transmission System Expansion

Environmental Impact and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities, especially site preparation, excavation of trenches, and installing structure foundations, would involve travel on unpaved roads and surfaces and material handling that would create fugitive dust. Use of construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary air quality impacts from dust and equipment exhaust. Accidental wildfire could cause adverse air quality impacts that would be avoided by reducing the likelihood of construction triggering a wildfire (described further in Section D.15). Construction emissions would not permanently affect visibility or vegetation in a federal Class I wilderness area, but federal Class I areas or State wilderness areas would temporarily be exposed to construction emissions duration of construction. The potential to deteriorate visibility and vegetation would be as described in Section D.11.6. As with the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

All future 500 kV transmission lines that are part of the Future Expansion would require new applications by SDG&E, followed by preparation of project-level environmental documents and separate approvals from the CPUC prior to permitting and construction. During the environmental review process for the Future Expansion transmission lines, detailed mitigation measures would need to be identified to minimize the construction impacts. In addition to the conformity analysis that must be completed by the BLM for the Proposed Project, the 500 kV Future Expansion into Riverside and Orange Counties would also require the Cleveland National Forest to either complete a full conformity determination for the 500 kV Future Expansion or adopt mitigation to reduce project emissions to below the federal General Conformity *de minimis* levels for the South Coast Air Basin. South Coast Air Basin NOx, PM10, and CO reductions may need to occur, but the ultimate level of additional mitigation should be based on a refined estimate of construction-phase emissions, depending on the ultimate engineering, design, and phasing of the projects (see Section D.11.13). Implementation of Mitigation Measures AQ-1a (suppress dust at all work or staging areas and on public roads) and AQ-1b (use low-emission construction equipment), as well as measures incorporating the APMs identified for the remainder of the Proposed Project (Mitigation Measures AQ-1c through AQ-1g) would reduce the impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**

- AQ-1e Prevent transport of mud and dust.** [AQ-APM-3]
- AQ-1f Encourage carpooling.** [AQ-APM-4]
- AQ-1g Minimize vehicle idling.** [AQ-APM-5]

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the 500 kV Future Expansion. Maintenance and inspections activities would be similar throughout the project area and would be the only notable direct air quality impact related to the project. Once operational, the Future Expansion would require few new vehicle trips compared to the existing conditions. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor. The air quality effects of potential wildfire related to the operation and the presence of the line including emissions of particulate matter, increased adverse health effects, and diminished visibility would be adverse but short-term (see discussion in Section D.15). Direct emissions from project vehicular traffic for maintenance activities would cause a negligible, less than significant impact, and mitigation measures are not required (Class III).

D.11.12 Connected Actions and Indirect Effects

Section B.6 describes the other projects that have been found to be related to the Sunrise Powerlink Project. They fall into two categories:

- **Connected Actions.** The four projects found to be connected to the Sunrise Powerlink Project are the Stirling Energy Systems solar facility, two components of the IID 230 kV transmission system upgrades, the Esmeralda–San Felipe Geothermal Project, and the Jacumba Substation. Those projects are addressed in Sections D.11.12.1 through D.11.12.4.
- **Indirect Effects.** One project, the SCE La Rumorosa Wind Project, would create effects as a result of the construction and operation of the Sunrise Powerlink Project. That project is addressed in Section D.11.12.5.

D.11.12.1 Stirling Energy Systems Solar Two LLC Project

As agreed in a Power Purchase Agreement (PPA) approved by the CPUC, SDG&E would purchase up to 900 MW of solar power produced at a proposed 8,000-acre Concentrating Solar Power (CSP) facility in the Imperial Valley (see Section B.6.1). At least 600 MW of this total would be transmitted via the SRPL. Stirling Energy Systems (SES) Solar Two, LLC would construct, own and operate the CSP facility and an associated 230 kV transmission line. The CSP site would be leased by SES from BLM, and additional individual private parcels within the site boundaries would be acquired. The transmission line would be constructed within a new ROW easement just north of and adjacent to the SWPL.

As described in Section B.6, the CPUC and BLM have determined that the Stirling CSP facility and associated 230 kV transmission line are so closely related to the Proposed Project as to be considered “connected actions” under the National Environmental Policy Act (NEPA). Therefore, the Stirling site and transmission line are discussed in this EIR/EIS in order to fully disclose the potential for this project to be constructed as a result of the presence of the SRPL (if it is approved and constructed).

Approval of the SRPL would not result in automatic approval of the Stirling CSP facility or transmission line discussed below, and the project would require SES permit applications to CEC and BLM and compliance with CEQA and NEPA, followed by approvals from the CEC and BLM prior to construction on BLM lands.

Environmental Setting

The air quality setting for the Stirling Energy Systems Solar Two LLC Project is described in Section D.11.2.1. This project would occur within the vicinity of the proposed Imperial Valley Link and is wholly within the Salton Sea Air Basin, administered by the ICAPCD.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction of the Stirling CSP facility and associated 230 kV transmission line would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the proposed Imperial Valley Link (Section D.11.5). This connected action would substantially increase the emissions of Proposed Project construction by developing 8,000 acres of additional land, 525 miles of new gravel access roads, telecommunications facilities, and operations and maintenance facilities. The construction phase activity would also cause emissions while installing 36,000 solar concentrating devices, delivering the structural material and devices, and mobilizing up to 500 construction-related workers. As a connected action with the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant impacts from dust and equipment exhaust. As described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Toxic air contaminants and odors would be emitted as a result of fuel combustion in construction-related equipment and vehicles, but construction would involve many small sources of toxics or odors rather than individual large sources. Construction emissions would occur over a five to six year build-out, but would be distributed over a large area and would not affect a substantial number of people.

The BLM would need to either complete a full conformity determination for the Proposed Project with the Stirling CSP facility and associated 230 kV transmission line or adopt additional mitigation to reduce project and connected action emissions to below the *de minimis* levels. Because the Proposed Project would require federal approval, including the Stirling CSP facility would necessitate additional mitigation in Imperial County to reduce construction emissions of the Proposed Project plus the connected actions to below the General Conformity rule *de minimis* levels. Imperial County NO_x and/or PM₁₀ reductions may need to occur, but the ultimate level of additional mitigation should be based on a refined estimate of construction-phase emissions, depending on the ultimate engineering, design, and phasing of the projects (see Section D.11.13). Implementation of Mitigation Measures AQ-1a (suppress dust at all work or staging areas and on public roads), AQ-1b (use low-emission construction equipment), as well as mitigation measures incorporating the APMs identified for the remainder of the Proposed Project (Mitigation Measures AQ-1c through AQ-1g) would reduce the impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements.** [AQ-APM-1]
- AQ-1d Implement dust reduction measures.** [AQ-APM-2]
- AQ-1e Prevent transport of mud and dust.** [AQ-APM-3]
- AQ-1f Encourage carpooling.** [AQ-APM-4]
- AQ-1g Minimize vehicle idling.** [AQ-APM-5]

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions would be generated during operation, maintenance, and inspection activities of the Stirling CSP facility and associated 230 kV transmission line. Operation, maintenance, and inspection of the generation facility would cause travel on the gravel access roads and use of equipment for washing the mirrored surfaces of the collectors. Emissions from these new vehicle trips and additional fugitive dust would be minor and less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class IV)

The Stirling CSP facility and associated 230 kV transmission line would facilitate decreased operation of other existing power plants delivering energy to the Imperial Valley Substation, which could lead to reduced emissions from fossil fuel-fired power plants. Demand for electricity would not change as a result of the Stirling CSP facility, and power generated in response to the demand would occur regardless of whether the renewable project moves forward. With the SRPL Project, the Stirling CSP facility and associated 230 kV transmission line would enable reductions of CO₂ and other pollutant emissions that would otherwise occur from fossil fuel-fired power plants (CAISO, 2007). The Stirling CSP facility would generate electricity without burning any carbon-based fuel and would thus generate essentially no emissions per megawatt-hour of output. Reduced emissions from fossil fuel-fired power plants would be a beneficial impact of this connected action (Class IV).

D.11.12.2 IID Transmission System Upgrades

As part of Phase 2 of the Imperial Valley Study Group's development plan (see Section A.4.3), IID would construct a new 230 kV line from the Bannister Substation to a new San Felipe 500/230 kV Substation to interconnect to the proposed Imperial Valley to San Diego 500 kV line (i.e., the Sunrise Powerlink line). This San Felipe Substation could potentially provide an additional interconnection between the IID and CAISO systems, and thus another point for the delivery of renewable resources to southern California loads. IID would construct, own and operate these upgrades.

As described in Section B.6, the CPUC and BLM have determined that these IID Transmission System Upgrades are so closely related to the Proposed Project as to be considered "connected actions" under the National Environmental Policy Act (NEPA). Therefore, IID Transmission System Upgrades are dis-

cussed in this EIR/EIS in order to fully disclose the potential for a Bannister-San Felipe 230 kV transmission line and new San Felipe 500/230 kV Substation to be constructed as a result of the presence of the SRPL (if it is approved and constructed).

Approval of the SRPL would not result in automatic approval of the IID Transmission System Upgrades discussed below, and the projects would require applications by IID, compliance with CEQA and NEPA, followed by approvals from the BLM prior to construction on BLM lands.

Environmental Setting

The air quality setting for the IID Transmission System Upgrades is described in Section D.11.2.1. These upgrades would occur within the vicinity of the proposed Imperial Valley Link and would be wholly within the Salton Sea Air Basin, administered by the ICAPCD. A small portion of the 230 kV line and the new San Felipe 500/230 kV Substation would be located in San Diego County, which is administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction of the 230 kV line and new San Felipe Substation would cause dust and exhaust emissions from heavy-duty diesel and gasoline-powered construction equipment and activity on unpaved surfaces. Beyond the boundaries of the line ROW and substation, exhaust emissions would also be caused by workers commuting to and from the construction sites, from trucks hauling conductor, pole segments, and other equipment and supplies to the sites, dump trucks hauling away dirt or vegetation debris, and trucks delivering fresh concrete to pole sites. Construction activities at the San Felipe Substation would involve many of the same types of construction equipment that would be associated with construction of the 230 kV line and the SRPL transmission line, and the resulting air quality impact would be similar. The construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant impacts from dust and equipment exhaust. As described for the Proposed Project, the construction-phase emissions would remain significant and unavoidable (Class I).

Toxic air contaminants and odors would be emitted as a result of fuel combustion in construction-related equipment and vehicles, but construction would not involve large sources of toxics or odors. These emissions would be temporary, would be distributed over the entire transmission corridor, and would not affect a substantial number of people.

A full conformity determination would not be required for the IID Upgrades because they could occur without federal agency action. Because the Proposed Project would require federal approval, the IID Upgrades would trigger the need for additional mitigation in Imperial County to reduce construction emissions of the Proposed Project plus the IID Upgrades to below the General Conformity rule *de minimis* levels. Imperial County NO_x and/or PM₁₀ reductions may need to occur, but the ultimate level of additional mitigation should be based on a refined estimate of construction-phase emissions, depending on the ultimate engineering, design, and phasing of the projects (see Section D.11.13). Implementation of Mitigation Measures AQ-1a (suppress dust at all work or staging areas and on public roads), AQ-1b (use low-emission construction equipment), as well as mitigation measures incorporating the requirements of APMs identified for the remainder of the Proposed Project (Mitigation Measures AQ-1c through AQ-1g) would reduce the impact but not to a less than significant level (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**
- AQ-1e Prevent transport of mud and dust. [AQ-APM-3]**
- AQ-1f Encourage carpooling. [AQ-APM-4]**
- AQ-1g Minimize vehicle idling. [AQ-APM-5]**

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the IID Upgrades. Maintenance and inspections activities would be similar throughout the project area and would create the only notable direct air quality impact of the upgrades. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. Operation of the San Felipe Substation would also cause minor vehicular traffic for maintenance and inspections, and the substation would be remotely operated. Overall, direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

D.11.12.3 Esmeralda–San Felipe Geothermal Project

An EIS is currently being prepared by BLM to analyze the leasing of geothermal resources exploration, development, and utilization in the Truckhaven Geothermal Leasing Area (Truckhaven) located in western Imperial County, California (refer to Figure B-46 in Section B). Currently, BLM has non-competitive geothermal lease applications pending for portions of this land, including lease applications from Esmeralda Energy, LLC (Esmeralda); however, the land must first be assessed under NEPA regulations before granting leases. Under the Proposed Action analyzed in the EIS, BLM would approve the pending non-competitive leases and offer competitive leases for all other available lands at Truckhaven.

The Esmeralda–San Felipe Geothermal Project would develop 20 MW of geothermal resources within the Truckhaven Geothermal Leasing Area; however, Esmeralda is not able to submit a project application to BLM for the Esmeralda–San Felipe Geothermal Project until their pending lease applications with BLM for Truckhaven are approved. In the absence of a formal Project application, it is assumed that roughly half of the components identified under the Reasonably Foreseeable Development (RFD) scenario in BLM’s Truckhaven EIS would apply to the Esmeralda–San Felipe Geothermal Project. Additionally, the description of the environmental setting and likely impacts are partially adapted from the Draft EIS for the Truckhaven Geothermal Leasing Area (February 2007). The RFD describes the anticipated development that would occur at Truckhaven to facilitate geothermal resources exploration, development and utilization should the leases be approved by BLM and include new wells, a power plant and transmission lines, as described in Section B.6.3. Geothermal energy uses heat from the earth, extracted through geothermal wells in the form of steam or brine, which is then transported via pipeline and used to drive turbines, which drive electricity generation.

As described in Section B.6, the CPUC and BLM have determined that the Esmeralda–San Felipe Geothermal Project is so closely related to the Proposed Project as to be considered a “connected action” under the National Environmental Policy Act (NEPA). Therefore, the Esmeralda–San Felipe Geothermal Project is discussed in this EIR/EIS in order to fully disclose the potential for a new geothermal plant and associated linears to be constructed as a result of the presence of the SRPL (if it is approved and constructed).

Approval of the SRPL would not result in automatic approval of the Esmeralda–San Felipe Geothermal Project discussed below, and the project would require applications by Esmeralda Energy, LLC, compliance with CEQA and NEPA, followed by approvals from the BLM prior to construction on BLM lands.

Environmental Setting

The Esmeralda–San Felipe Geothermal Project is in Imperial County, and the air quality setting is described in Section D.11.2.1. This project would occur within the vicinity of the proposed Imperial Valley Link and is wholly within the Salton Sea Air Basin, administered by the ICAPCD.

Environmental Impacts and Mitigation Measures

As stated in BLM’s Draft EIS for the Truckhaven Geothermal Leasing Area, the following BMPs and other mitigation measures would be included/considered in Plans of Operation, which are required for surface-disturbing activities, in order to minimize adverse impacts to resources and uses in the Truckhaven Geothermal Leasing Area, which includes the Esmeralda–San Felipe Geothermal Project area:

- Hydrogen sulfide (H₂S) emissions would be abated, for example, through the injection of hydrogen peroxide and sodium hydroxide into the test line.
- Dust emissions from well testing would be reduced by injecting water into the test line.
- Dust emissions from roads would be mitigated by periodic watering.

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction of the Esmeralda–San Felipe Geothermal Project would cause dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the proposed Imperial Valley Link (Section D.11.5). This connected action would substantially increase the emissions of Proposed Project construction by developing 170 acres of additional land for wells and pipelines, the new power plant, and transmission interconnection facilities. The construction phase activity would also cause emissions during well drilling from drill diesel engine exhaust, dust from activity on unpaved surfaces, and geothermal steam from well testing. Beyond the boundaries of the project area, exhaust emissions would also be caused by workers commuting to and from the construction sites, trucks hauling equipment and supplies to the sites, dump trucks hauling away dirt or vegetation debris, and trucks delivering fresh concrete. As a connected action with the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant impacts from dust and equipment exhaust. As described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Toxic air contaminants and odors would be emitted as a result of fuel combustion in construction-related equipment and vehicles and as a result of geothermal steam released during well testing. Hydrogen sulfide in geothermal steam is a toxic air contaminant and a colorless, flammable, poisonous compound with a characteristic rotten-egg odor. Ammonia also occurs in geothermal steam and is a toxic air contaminant with a pungent, penetrating odor. Ammonia is also a precursor pollutant to particulate matter in the ambient air. Releasing geothermal steam during well testing and development would cause substantial emissions of these toxic air contaminants and odors over the construction phase. Aside from closely managing the well testing schedule, few mitigation options are available, and the impact of toxic air contaminants and odors during construction would be significant and unavoidable (Class I).

The BLM would need to either complete a full conformity determination for the Proposed Project with the Esmeralda–San Felipe Geothermal Project or adopt additional mitigation to reduce project and connected action emissions to below the *de minimis* levels. Because the Proposed Project would require federal approval, including the Esmeralda–San Felipe Geothermal Project would necessitate additional mitigation in Imperial County to reduce construction emissions of the Proposed Project plus the connected actions to below the General Conformity rule *de minimis* levels. Since the Truckhaven area is located in an area designated as nonattainment for both ozone and PM10, Imperial County and NOx and PM10 reductions may need to occur, but the ultimate level of additional mitigation should be based on a refined estimate of construction-phase emissions, depending on the ultimate engineering, design, and phasing of the projects (see Section D.11.13). Implementation of Mitigation Measures AQ-1a (suppress dust at all work or staging areas and on public roads), AQ-1b (use low-emission construction equipment), as well as mitigation measures incorporating the provisions of the APMs identified for the remainder of the Proposed Project (Mitigation Measures AQ-1c through AQ-1g) would reduce the impact but not to a less than significant level (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**
- AQ-1e Prevent transport of mud and dust. [AQ-APM-3]**
- AQ-1f Encourage carpooling. [AQ-APM-4]**
- AQ-1g Minimize vehicle idling. [AQ-APM-5]**

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Once project construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the Esmeralda–San Felipe Geothermal Project. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. Overall, direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class IV)

The Esmeralda–San Felipe Geothermal Project would provide renewable energy that would facilitate decreased operation of other existing power plants, which could lead to reduced emissions from fossil fuel-fired power plants. Demand for electricity would not change as a result of the Esmeralda–San Felipe Geothermal Project, and power generated in response to the demand would occur regardless of whether the renewable project moves forward. With the SRPL Project, the Esmeralda–San Felipe Geothermal Project would enable reductions of emissions that would otherwise occur from fossil fuel-fired power plants (CAISO, 2007). Operating a geothermal power facility generally causes very low or no emissions of CO₂ or other pollutants, except when geothermal steam escapes to the atmosphere. Geothermal steam can contain varying amounts of CO₂, methane, ammonia, and H₂S. The Esmeralda–San Felipe Geothermal Project would extract heat from the geothermal steam but the steam and condensed fluid would not routinely come in contact with the atmosphere; therefore, the geothermal project would emit no CO₂ or methane per megawatt-hour of output.

Extracting power from geothermal steam equipment can cause emissions of ammonia and H₂S, which are odors and toxic air contaminants present in the geothermal brine. Ammonia emissions also react with ambient air to form inhalable PM₁₀, and H₂S in the atmosphere will oxidize to SO₂ and sulfuric acid. Without proper control, emissions of these contaminants would cause increased health risks, create objectionable odors, and cause or substantially contribute to violations of H₂S and/or PM₁₀ ambient air quality standards. These contaminants would be emitted during any short-term commissioning activities or uncontrolled releases of geothermal steam, but these impacts would be less than significant because they would be short-term and managed in accordance with ICAPCD permitting requirements.

Ammonia and H₂S emissions could be avoided with sulfur control systems and use of an air-cooling system to reduce cooling tower drift. Commonly, water cooling causes the geothermal fluid entering the cooling tower to be emitted to the atmosphere as water vapor, which results in high levels of ammonia and H₂S in the vapor from the cooling tower. The RFD scenario in BLM’s Truckhaven EIS includes “binary cycle” geothermal power plants that use heat exchangers to transfer energy from the geothermal steam to the working fluid. A binary cycle plant emits only fresh water vapor from the cooling tower. Cool geothermal brine is injected into the ground after the energy is extracted. Offsetting the emissions from fossil fuel-fired plants with the binary cycle geothermal plants as considered in the Truckhaven EIS would result in a beneficial air quality impact (Class IV).

D.11.12.4 Jacumba Substation Project

In its testimony during the CPUC’s Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed

to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 in Section B illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The dry mountainous area in the area of by the Jacumba Substation (approximately 0.5 miles northwest of the town of Jacumba) is similar to that of the Anza-Borrego Link, which is described in Section D.11.2.2.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities for the Jacumba Substation would involve many of the same types of construction equipment that would be associated with construction of the transmission line, and the resulting air quality impacts would be similar to those shown in Table D.11-15. Please see Table D.11-15 for the maximum emissions expected from all activities related to construction of this substation.

Construction of the Jacumba Substation would cause emissions over the thresholds by itself; the air quality impact would be significant. Mitigation Measures AQ-1a through AQ-1g would reduce this impact, but exhaust emissions would exceed the significance thresholds. As such, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**
- AQ-1e Prevent transport of mud and dust. [AQ-APM-3]**
- AQ-1f Encourage carpooling. [AQ-APM-4]**
- AQ-1g Minimize vehicle idling. [AQ-APM-5]**

Operation Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation of the Jacumba Substation would cause minor vehicular traffic for maintenance and inspections, and the substation would not be permanently staffed. Direct emissions from occasional vehicular traffic to the substation would cause an adverse but less than significant impact (Class III).

D.11.12.5 SCE La Rumorosa Wind Project

Environmental Setting

United States. The air quality setting for the 1.7 miles of transmission line within the “Rumorosa Wind Developers II” (RWD) project is similar to that of the Anza-Borrego Link, which is described in Section D.11.2.2. This portion of the transmission line would be within San Diego County, administered by the SDAPCD until it reaches the U.S./Mexico Border.

Mexico. Most urban areas along the U.S./Mexico border do not meet the U.S. EPA air quality standards in ozone, carbon monoxide, and particulate matter. The contaminants in this border region come from a variety of sources such as open air burning (trash, residential heating, and brick ovens) dirt roads, energy plants, industrial sites, and transportation activities (U.S.EPA, 2003). In addition, La Rumorosa is approximately 6 miles from the La Rumorosa Substation and 20 miles from major power plants in the Mexicali area.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

United States. The RWD project would generate dust and exhaust emissions from construction activity and crews operating off-road equipment and on-road mobile sources at separate locations. General construction, structure foundation excavation, structure delivery and setup, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction.

Construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The total amount of construction, the duration of construction, and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. As exact construction scenarios are unavailable at this level of analysis, no emission forecasts are provided for the expected construction scenarios; however, it should be noted that the RWD project has only 1.7 miles of transmission line within the United States.

The construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. Excavation activities would also release emissions as a result of construction vehicle operations. Further, particulate matter would be released into the air in the form of fugitive dust. Mitigation measures to reduce construction equipment impacts include Mitigation Measures AQ-1a through AQ-1g including preparation

and implementation of a Dust Control Plan, minimize transport of mud and dust onto paved surfaces, encourage employee carpooling, and minimize idling time. While the recommended mitigation measures would reduce construction impacts, the construction-phase emissions would be significant and unavoidable (Class I).

Mexico. The RWD project in Mexico would generate similar types of emissions as from the U.S. project construction components. However, it should be noted that within Mexico, there would be a 27-mile transmission line, as well as the actual wind farm construction, and as such construction would be longer in duration and more intensive in nature. Mitigation measures to reduce construction equipment impacts include Mitigation Measures AQ-1a through AQ-1g including preparation and implementation of a Dust Control Plan, minimize transport of mud and dust onto paved surfaces, encourage employee carpooling, and minimize idling time. While the recommended mitigation measures would reduce construction impacts, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a** Suppress dust at all work or staging areas and on public roads.
- AQ-1b** Use low-emission construction equipment.
- AQ-1c** Comply with Imperial County dust control requirements. [AQ-APM-1]
- AQ-1d** Implement dust reduction measures. [AQ-APM-2]
- AQ-1e** Prevent transport of mud and dust. [AQ-APM-3]
- AQ-1f** Encourage carpooling. [AQ-APM-4]
- AQ-1g** Minimize vehicle idling. [AQ-APM-5]

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

United States and Mexico. Dust and exhaust emissions generated during operation, maintenance, and inspection activities of the RWD project would be generated by new vehicle trips to patrol and repair the transmission line and wind farm. A minor increase in dust and exhaust emissions from the mobile sources would occur when compared to the existing conditions. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class IV)

United States and Mexico. The RWD project and associated transmission line would facilitate decreased operation of other existing power plants delivering energy to San Diego County, which could lead to reduced emissions from fossil fuel-fired power plants. Demand for electricity would not change as a result of the RWD project, and power generated in response to the demand would occur regardless of whether the renewable project moves forward. The RWD project and associated transmission line would enable reductions of CO₂ and other pollutant emissions that would otherwise occur from fossil fuel-fired power plants. The RWD project would generate electricity without burning any carbon-based fuel and would thus generate essentially no greenhouse gases per megawatt-hour of output. Reduced emissions from fossil fuel-fired power plants would be a beneficial impact of the RWD project (Class IV).

D.11.13 Overall Air Quality Impacts of Proposed Project

The overall air quality impacts of the Proposed Project with Future Transmission System Expansion and Connected Actions and Indirect Effects are addressed here; however, because insufficient details are available at this time for the Future Transmission System Expansion, Connected Actions, and Indirect Effects, these emissions are not quantified.

D.11.13.1 Overall Construction Impacts

Overall construction would cause emissions of criteria pollutants that could obstruct implementation of regional air quality management plans in multiple air basins. These impacts and the overall impacts of odors and TACs are described here. See Section D.11.13.3 (Impact AQ-4) for characterization of GHG impacts.

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Criteria Air Pollutants. Overall construction emissions could obstruct implementation of regional air quality management plans by causing emissions above the *de minimis* thresholds in the General Conformity rule. A conformity determination would be required for each pollutant where the total emissions in a nonattainment area caused by the Proposed Project exceed the thresholds. Evaluating applicability of this requirement, thus, requires estimating total emissions within each nonattainment area.

Table D.11-19 summarizes the Imperial County construction-phase emissions on an annual basis, and Table D.11-20 shows annual construction emissions for San Diego County. The annual emission estimates are made assuming the current project schedule and activity forecasts, and that the majority of construction activities for the various links and substation modifications occur concurrently. These independent emission calculations for all construction-related activities are provided in Appendix 10 of this EIR/EIS. The results show that without additional mitigation, construction activities would exceed the federal General Conformity *de minimis* thresholds for NO_x and particulate matter in Imperial County and for NO_x in San Diego County.

Table D.11-19. Annual Emissions from Construction Activities in Imperial County

Construction Activity	NO _x (ton/year)	VOC (ton/year)	PM10 (ton/year)	PM2.5 (ton/year)	CO (ton/year)	SO _x (ton/year)	CO ₂ (ton/year)
Off-Road Equipment (Transmission Line)	127.1	17.4	6.8	6.8	52.2	3.1	11,907.9
Off-Road Equipment (Substation Modifications)	5.5	0.6	0.2	0.2	1.9	0.0	495.1
On-Road Vehicles	66.6	7.9	3.0	3.0	55.6	0.1	8,879.0
Fugitive Dust	—	—	335.8	38.0	—	—	—
Annual Totals (Imperial County)	199.2	25.8	345.9	48.1	109.7	3.2	21,282.0
General Conformity <i>de minimis</i> Threshold	100	100	70	70	—	—	—
Significance Criteria	40	14	15	10	100	40	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

Table D.11-20. Annual Emissions from Construction Activities in San Diego County

Construction Activity	NOx (ton/year)	VOC (ton/year)	PM10 (ton/year)	PM2.5 (ton/year)	CO (ton/year)	SOx (ton/year)	CO ₂ (ton/year)
Off-Road Equipment (Transmission Line)	198.7	27.1	10.7	10.7	81.6	4.8	18,625.2
Off-Road Equipment (Substation Modifications)	8.5	0.9	0.3	0.3	2.9	0.0	774.4
On-Road Vehicles	104.2	12.3	4.7	4.7	87.0	0.1	13,887.7
Fugitive Dust	—	—	525.2	59.4	—	—	—
Annual Totals (San Diego County)	311.5	40.4	540.9	75.2	171.5	5.0	33,287.3
General Conformity <i>de minimis</i> Threshold	100	100	—	—	—	—	—
Significance Criteria	40	14	15	10	100	40	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Implementation of Mitigation Measures AQ-1a and AQ-1b would minimize ozone precursor and particulate matter pollutant emissions but not to levels below the General Conformity *de minimis* thresholds in Imperial County or San Diego County. Additional mitigation or a full conformity determination would be necessary before the Proposed Project could be determined to conform with the State Implementation Plan (SIP).

The BLM would need to either complete a full conformity determination for the Proposed Project or adopt additional mitigation (Mitigation Measure AQ-1h) to reduce project emissions to below the *de minimis* levels. For each of the years of construction, approximately 99 tons per year of NO_x reductions and 276 tons per year of particulate matter reductions would need to occur in Imperial County, and 212 tons per year of NO_x reductions would need to occur in San Diego County based on the information in Table D.11-19 and Table D.11-20, respectively. The ultimate level of additional mitigation should be based on a refined estimate of construction-phase ozone precursor emissions within each non-attainment area, depending on the ultimate engineering, design, and phasing of the project with Future Transmission System Expansion and Connected Actions.

The ICAPCD and SDAPCD each maintain an emission reduction credit bank or inventory to offset major new sources, and SDG&E could acquire and hold emission reduction credits throughout the construction duration to offset the construction emissions. Banking of credits consistent with ICAPCD Rule 214 and SDAPCD Rules 26 and 27 would ensure that emission reductions are real, enforceable, and quantifiable. Acquiring and holding emission reduction credits would provide assurance that the ozone precursor emissions from construction are offset to a level below the *de minimis* levels. Alternatively, sponsoring or funding an incentive program consistent with the current Regional Air Quality Strategy (e.g., Carl Moyer Program) could provide emission reductions in a manner consistent with regional plans. With sufficient mitigation, a full conformity determination would not be applicable, and the Proposed Project would conform with the SIP.

Implementing Mitigation Measure AQ-1h would require SDG&E to obtain NO_x and particulate matter emission offsets or fund incentive programs in sufficient quantities to mitigate ozone and particulate matter impacts. This would ensure consistency with regional air quality plans. Due to total emissions of ozone

precursors, particulate matter, and carbon monoxide during all construction phases for the separate links including those in Imperial County, the substantial levels of emissions (Impact AQ-1) would remain significant and unavoidable (Class I).

Mitigation Measure for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1h Obtain NO_x and particulate matter emission offsets. SDG&E shall obtain and hold for the duration of construction NO_x emission reduction credits or fund incentive programs approved by ICAPCD and SDAPCD at sufficient levels to offset the construction emissions of NO_x that exceed the ozone nonattainment area federal General Conformity Rule applicability threshold. SDG&E shall secure 99 tons per year of NO_x reductions and 276 tons per year of particulate matter reductions in Imperial County, and SDG&E shall secure 212 tons per year of NO_x reductions in San Diego County to satisfy this requirement. The emission reduction credits or incentive program shall comply with ICAPCD and SDAPCD rules and regulations, and the credits or reductions shall be obtained by SDG&E prior to commencing construction.

Toxic Air Contaminants and Odors. Toxic air contaminants and odors would be emitted as a result of fuel combustion in construction-related equipment and vehicles (Impact AQ-1). Construction activities would not, however, involve large sources of toxic air contaminants or odors. Some equipment and some construction activities, such as small areas of asphalt paving, could create mildly objectionable odors. These odors would be temporary and would not affect a substantial number of people. Therefore, no odor impacts would occur. Construction does not involve any major sources of TACs but would include diesel-fueled equipment. Furthermore, the diesel equipment emissions would not occur at any one single location but would be widely distributed over the entire project corridor; therefore, no significant TAC impacts would occur at any one location or at any sensitive receptors along the transmission line ROW (Class III).

D.11.13.2 Overall Operation Impacts

This section considers two operation-phase impacts for the Proposed Project as a whole: Impact AQ-2 (Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants) and Impact AQ-3 (Power generated during transmission line operation would cause emissions from power plants). See Section D.11.13.3 (Impact AQ-4) for characterization of GHG impacts.

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Overall transmission line operation, maintenance, and inspection activities would cause minor criteria pollutant and toxic air contaminant emissions from mobile sources for inspection and maintenance activities. The operational emissions would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from project vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Indirect Emissions from Energy Imports. The Proposed Project would facilitate transmission of power from a network of existing and future power plants within and outside of Imperial and San Diego Counties. Indirect air quality impacts would be related to the project if increased power plant emissions

would occur because of the transmission line. Increased operation would occur at electrical generation facilities (including renewable energy facilities and natural gas-fired power plants) primarily outside of the region, and operation of power plants inside the region would decrease.

Demand for electricity would not change as a result of the Proposed Project, and power generated in response to the demand would occur at some location regardless of whether the Proposed Project is approved or disapproved.

Power Plant Operation Scenario With Imperial Valley Renewables. The CAISO forecasts that with the proposed Sunrise Powerlink and renewable generation projects (including Connected Actions and Indirect Effects in Section D.11.12), emissions from liquid fuel and coal-fired power plants outside of the southwestern U.S. and Mexico would generally increase, and natural-gas fired power plant emissions would generally decrease in Arizona, Mexico, and San Diego. Emission reductions are attributable to new renewable resources in the Imperial Valley if the Sunrise Powerlink is built. CAISO expects 785 MW of new Imperial Valley geothermal to be developed without the Sunrise Powerlink, and an additional 1,000 MW of new renewable geothermal energy resources with 900 MW from the Stirling Energy System project (in Section B.6.1 and Section D.11.12.1) with the Sunrise Powerlink (CAISO, 2007).

CAISO forecasts that the Sunrise Powerlink and development of new renewable generation in Imperial County would:

- Avoid 1,500 metric tons (1,650 tons) of CO₂ emissions in 2015; and
- Create 96 tons of NO_x emissions in 2015 from western U.S. power plants outside of Arizona, Mexico, and San Diego and from Canadian power plants.

Avoided emissions would otherwise occur from fossil fuel-fired power plants in 2015 in the absence of the Sunrise Powerlink and the accompanying renewable generation projects (CAISO, 2007). Similar project-related changes of other pollutants from power generation would be expected, and the trends would be expected to recur annually over the life of the new renewable energy sources.

The precise location and quantity of the emission reductions would change over time depending on the ultimate sources of power flowing into the Sunrise Powerlink and other major transmission in the western U.S. According to CAISO, about one-third of the avoided power plant CO₂ emissions in 2015 would come from each of the Arizona, Mexico, and San Diego regions, and about 56 tons of NO_x emissions would be reduced in San Diego. Additional NO_x reductions would occur in Imperial County, Arizona, and Mexico. The NO_x reductions would be a beneficial local air quality effect of developing the Proposed Project and new renewable energy sources in the border region. The level of this benefit, however, depends somewhat on the ability of the new renewable energy sources in Imperial County to be developed, and the timing of these renewable projects is uncertain (see Section B.6). Locally reduced NO_x emissions would be outweighed by increased NO_x emissions from distant power plants in northern California, the Pacific Northwest, and Colorado and in British Columbia and Alberta, Canada. The increases in Alberta and Colorado would be mainly from coal-fired power plants. Any increase in emissions from existing power plants would need to be within existing permitted emission levels that have been previously licensed by local air management agencies; as such, although some locations would experience increased emissions, no significant impact would occur at any one location.

Power Plant Operation Scenario Without Imperial Valley Renewables. In the absence of new renewable generation in the Imperial Valley, CAISO expects renewable resources to be developed elsewhere to achieve the goals of California's Renewable Portfolio Standard (RPS). With RPS compliance, regardless of where new the renewable resources are built, the Sunrise Powerlink would still be expected to reduce power plant operation. Reduced operation would occur within San Diego County and Mexico

and increased operation would occur elsewhere in the western U.S. and Canada. Without Imperial Valley renewables, Arizona and some parts of southern California including Imperial County would provide most of the power for to the Sunrise Powerlink. The CO₂ emissions increases from incremental generation outside San Diego County would be more than offset by decreased operation and emissions from in-area existing power plants, and NO_x increases from incremental generation would be less than 50 tons in 2015 from western U.S. and Canada power plants outside of Mexico and San Diego (CAISO, 2007). Any increase in emissions from existing power plants in Arizona, Imperial County, or elsewhere would need to be within existing permitted emission levels that have been previously licensed by local air management agencies, with U.S. EPA oversight; as such, although some locations would experience increased emissions, no significant impact would occur.

Summary of Indirect Emissions from Energy Imports. The Proposed Project would facilitate an overall indirect net decrease in emissions from power plants. Depending on where new renewable generators are built, existing fossil fuel-fired plants outside San Diego County, especially in Arizona and Imperial County, could increase operation with the Proposed Project, but only within previously permitted limits. This would be an adverse effect in these locations, but the local impact would be less than significant. The Proposed Project would allow existing fossil fuel-fired plants inside San Diego County to decrease operation, regardless of where new renewable generation occurs.

In summary, the Proposed Project with foreseeable new renewable generation in California would offset existing sources of power and some of their associated emissions. The location of emissions from power plants would shift as a result of the Proposed Project, causing adverse but less than significant local impacts. Therefore, Proposed Project emissions from energy imports would not cause a significant impact (Class III).

D.11.13.3 Overall Impacts to Climate Change and Greenhouse Gases (GHG)

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Construction-Phase Greenhouse Gases. Greenhouse gas emissions would occur as a result of construction activities. Construction GHGs would be above the level of GHGs that occur in the baseline conditions shown in Table D.11-2. GHG emissions from the construction activities were estimated based on the expected fuel use of equipment and vehicles needed for construction. The following GHGs would occur: CO₂ emissions from fuel combustion due to equipment and vehicle use; methane (CH₄) and nitrous oxides (N₂O) from fuel combustion. Over the entire SRPL construction phase, approximately 0.1 million metric tons of CO₂ Eq. (or about 109,000 tons of CO₂, with some CH₄ and N₂O from all construction equipment and vehicles, see Appendix 10) would occur as a result of all project-related construction. This would be a substantial increase over the baseline conditions.

Construction-phase GHG emissions could be minimized by using fuel-efficient construction equipment, conserving fuel, and minimizing individual commuter trips. Applicant Proposed Measures (AQ-APM-4, Encourage carpooling, and AQ-APM-5, Minimize vehicle idling) would reduce GHG emissions somewhat, but not substantially. Mitigation Measure AQ-1b (Use low-emission construction equipment) would provide further GHG reductions, but the increase of GHG emissions would be significant for the duration of the construction. To address the construction-phase emissions, Mitigation Measure AQ-4a would require SDG&E to enter a carbon credit trading market and secure credits for the construction GHG emissions. However carbon credit trading markets are not fully formed or regulated, and the relationship of credits to real GHG reductions is not uniformly enforceable. Carbon credits could be created by power plant operators that curtail operation as a result of the Proposed Project. However, SDG&E would

need to obtain such credits through a trading program, and such reductions would not be contemporaneous with construction-phase emissions. Thus, the impact of increased greenhouse gas emissions during construction would be significant and unavoidable (Class I).

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

AQ-4a Offset construction-phase greenhouse gas emissions with carbon credits. SDG&E shall obtain and hold for the duration of project construction sufficient carbon credits to fully offset construction-phase greenhouse gas emissions. During construction SDG&E shall report to the CPUC quarterly the status of efforts to obtain banked credits and the quantity of construction-phase greenhouse gas emissions offset by credits. At a minimum, SDG&E shall obtain and hold carbon credits to offset 55,000 tons of carbon dioxide emissions for each of the two years of construction.

Operation-Phase Greenhouse Gases. Activity necessary to support transmission line operation, maintenance, and inspection activities would cause an increase in greenhouse gas emissions due to vehicle and equipment operation for inspection and maintenance activities. The increase in direct GHG emissions from project vehicular traffic for maintenance activities would be a significant impact. Mitigation Measure AQ-4b is recommended in order that SDG&E be required to offset this impact with carbon credits. However these markets are not fully formed or regulated, and the relationship of credits to real GHG reductions is not uniformly enforceable. Thus, the impact of increased GHG emissions caused by activity necessary to support operation of the transmission line would be significant and unavoidable (Class I).

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

AQ-4b Offset operation-phase greenhouse gas emissions with carbon credits. SDG&E shall obtain and hold for the life of the project sufficient carbon credits to fully offset greenhouse gas emissions caused by activity to support transmission line operation, maintenance, and inspection activities. To determine the quantity of carbon credits that must be obtained and held each year, SDG&E must develop a complete GHG inventory annually. SDG&E shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and indirect GHG emissions from transmission and distribution losses associated with the Proposed Project. SDG&E shall report to the CPUC annually the status of efforts to obtain banked credits and the quantity of greenhouse gas emissions offset by credits.

Direct Fugitive SF₆ Emissions from Transmission System Operation. No direct criteria pollutant emissions would occur from the transmission system equipment. An unquantifiable direct air quality impact of transmission system operation would be the potential escape of sulfur hexafluoride (SF₆), a potent greenhouse gas, used in operation of the electrical switchgear equipment and circuit breakers. Sealing and leak detection for SF₆ containment ensures proper insulation of the equipment, which is essential for avoiding failures (overheating, melting, and fires), and the electric utility industry is taking steps to reduce use of SF₆ and identify alternative insulating gases. Despite these efforts, because of the high global warming potential of SF₆ even small quantities of emissions could result in a significant impact. CARB expects to adopt regulations in 2011 for detection, repair, and recycling of existing electrical equipment for SF₆ capture (CARB, 2007b). In advance of GHG regulations, other investor-owned utilities (Pacific Gas and Electric and Southern California Edison) are taking voluntary steps to

address this issue, but SDG&E does not participate in the U.S. EPA SF₆ Emissions Reduction Partnership for Electric Power Systems.³

Sulfur hexafluoride emissions are not included in the existing SDG&E GHG emission inventory of transmission system operation (CCAR, 2007). In order to avoid SF₆ impacts, SDG&E would need to complete an “entity-wide” GHG inventory, identify SF₆ leaks, and establish a strategy for replacing leaking equipment. Developing a program for avoiding and reducing SF₆ emissions would reduce the GHG emissions of the transmission system because reducing one ton of SF₆ is equivalent to avoiding approximately 23,900 tons of CO₂. An “entity-wide” GHG inventory for SDG&E would include the following components of the Proposed Project: direct fugitive emissions (emissions of SF₆ from electricity transmission and distribution systems); and indirect emissions from energy purchased and consumed (emissions associated with the portion of the electricity that is consumed by the transmission system and emissions associated with the generation of purchased electricity or steam-heating that is consumed by SDG&E equipment or facilities supporting the transmission system).

Mitigation Measure AQ-4c is required to minimize SF₆ escape and reduce the adverse impact that would occur as a result of the long-term use of SF₆ by the Proposed Project and for reporting GHG emissions related to the Proposed Project. This measure would reduce transmission system SF₆ emissions to the extent feasible, but because the proposed transmission system equipment would cause a net increase in SF₆ emissions, this impact would be significant and unavoidable (Class I).

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

AQ-4c Avoid sulfur hexafluoride emissions. SDG&E shall identify sulfur hexafluoride (SF₆) leaks and establish a strategy for replacing leaking equipment to reduce SF₆ leaks. To accomplish this, SDG&E shall develop and maintain a record of SF₆ purchases, an SF₆ leak detection and repair program using laser imaging leak detection and monitoring no less frequently than quarterly, an SF₆ recycling program, and an employee education and training program for avoiding or eliminating SF₆ emissions caused by the Proposed Project. The SF₆ leak detection and repair program shall be provided to the CPUC and BLM 90 days prior to project construction. Prior to construction, SDG&E shall also become a Partner in the U.S. EPA’s SF₆ Emissions Reduction Partnership for Electric Power Systems. SDG&E shall also report SF₆ emissions from the Proposed Project to the California Climate Action Registry according to CCAR methodologies or alternate methodology approved by the California Air Resources Board. To develop a complete GHG inventory, SDG&E shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and indirect GHG emissions from transmission and distribution losses associated with the Proposed Project.

Net Increase of Greenhouse Gas Emissions. The adverse environmental effects of increased greenhouse gases in the atmosphere are far-reaching. As illustrated in the California Health & Safety Code (Sec. 38500, Division 25.5, Part 1), the expected impacts to California include: the exacerbation of air quality problems; a reduction in the quality and supply of water to the state from the Sierra snowpack; a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences; damage to marine ecosystems and the natural environment; and an increase in the incidences of infectious diseases, asthma, and other human health-related problems. The geographic scope of global climate change impacts includes the entire planet.

³ See <http://www.epa.gov/electricpower-sf6/partner.html>.

Greenhouse gas emissions that occur as a result of project-related construction activities and activity necessary to support transmission line operation, maintenance, and inspection activities, including direct fugitive SF₆ emissions would be partially offset by the indirect net decrease in CO₂ emissions from power plants described in Impact AQ-3 (Power generated during transmission line operation would cause emissions from power plants). Over the life of the Proposed Project, high GHG emissions during the years of construction would be followed by much lower GHG emissions during the years of activity necessary to support transmission line operation. As power plant operation shifts to accommodate the new transmission line and renewable resources replace conventional power plants, indirect GHG reductions are forecasted to occur.

Construction-phase CO₂ emissions for the combination of activity in both Imperial County and San Diego County would be an increase of approximately 55,000 tons for each of the two years of construction (see Impact AQ-1 in Section D.11.13.1). Operation of the Proposed Project would enable approximately 1,650 tons of CO₂ emissions from power plants to be avoided in 2015 (Impact AQ-3). Over the life of the project, the net GHG impact would depend on the ability of the long-term avoided GHG emissions to counteract the increase caused by construction.

Assuming long-term avoided GHG emissions of 1,650 tons of CO₂ annually, based on the CAISO forecast for 2015, during every year of transmission line operation would provide 66,000 tons over 40 years. This quantity of avoided GHG emissions would not fully offset the two years of GHG emission increases caused by construction (approximately 109,000 tons). Because total construction GHG emissions exceed the GHG reductions achieved due to avoided power plant emissions over 40 years of transmission line operation, the Proposed Project would cause an overall net increase in GHG emissions and a significant climate change impact.

The adverse effects of construction-phase GHG emissions should also be balanced with the fact that the project would partially implement an IPCC strategy. By improving the distribution efficiency of the California transmission grid, the Proposed Project would partially implement one of the IPCC key strategies for mitigating climate change. Because a net decrease over the baseline power plant emissions would occur, the CPUC Greenhouse Gas Emissions Performance Standard of 0.5 metric tons (1,100 lb) of CO₂ per megawatt-hour would not be exceeded.

Fully offsetting the construction-phase and operation-phase GHG (as with Mitigation Measures AQ-4a and AQ-4b) would mitigate the climate change impact. However, the markets for carbon credits are not fully formed or regulated, and the relationship of credits to real GHG reductions is not uniformly enforceable. Thus, the impact of the project's overall net increase in GHG would be significant and unavoidable (Class I).

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Environmental Impacts and Mitigation Measures for Alternatives Along Proposed Project Route

This section provides a description of the existing setting and analyzes the air quality impacts related to the alternative transmission line routes and substations for the Sunrise Powerlink Project. Section D.11.14 describes the Imperial Valley Link Alternatives; Section D.11.15 describes the Anza-Borrego Link Alternatives; Section D.11.16 describes the Central Link Alternatives, Section D.11.17 describes the Inland Valley Alternatives and Section D.11.18 describes the Coastal Link Alternatives.

Overall air quality impacts described in Section D.11.13 would be similar for the alternatives along the Proposed Project route. Construction impacts vary somewhat per route, but impacts related to power generated during transmission line operation (Impact AQ-3) would be identical for *all* alternative transmission lines and substations along the project route. The overall net increase of GHG emissions (Impact AQ-4) would also be identical for *all* alternative transmission lines and substations along the project route. This means that mitigation measures identified for overall air quality impacts in Section D.11.13 [Mitigation Measures AQ-1h (obtain NOx and particulate matter offsets), AQ-4a (offset construction-phase greenhouse gas emissions), AQ-4b (offset operation-phase greenhouse gas emissions), and AQ-4c (avoid sulfur hexafluoride emissions)] would remain applicable to *all* route alternatives as well as the overall Proposed Project.

Table D.11-21. Impacts Identified – Alternatives – Air Quality

Impact No.	Description	Impact Significance
All Section D Alternatives		
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Class I
AQ-2	Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Class III
AQ-3	Power generated during transmission line operation would cause emissions from power plants.	Class III
AQ-4	Project activities would cause a net increase of greenhouse gas emissions	Class I

D.11.14 Imperial Valley Link Alternatives Impacts and Mitigation Measures

There are three alternatives analyzed in the Imperial Valley Link, the FTHL Eastern Alternative, the SDG&E West of Dunaway Alternative, and the SDG&E West Main Canal–Huff Road Modification Alternative.

Environmental Setting

The environmental setting would be similar for each of the Imperial Valley Link alternatives. The air quality setting for all Imperial Valley Link alternatives is described in Section D.11.2.1. Each of the Imperial Valley Link alternatives is wholly within the Salton Sea Air Basin, administered by the ICAPCD.

Environmental Impacts and Mitigation Measures

The impacts from operation, maintenance and inspections (Impact AQ-2), impacts related to power generation (Impact AQ-3), and the overall net increase of GHG emissions (Impact AQ-4) would be similar

for each of the three Imperial Valley Link alternatives. Therefore, in order to avoid repetition, the discussion provided below applies to each of these alternatives.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions generated during operation, maintenance, and inspection activities would be similar for each of the Imperial Valley Link alternatives. Operation, maintenance, and inspection of the Imperial Valley Link alternatives would not require a substantial number of new vehicle trips compared to the existing conditions. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Imperial Valley Link alternatives would facilitate transmission of power from power plants, including those within and near Imperial County. Although some existing fossil fuel-fired plants could increase operation, this would only occur within previously permitted limits. As in Overall Impacts of Proposed Project (Section D.11.13), the air quality effect of power plant operation would be adverse but less than significant (Class III).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Imperial Valley Link alternatives would cause an overall net increase of GHG emissions identical to that described in Overall Impacts of Proposed Project (Section D.11.13). Mitigation would reduce the GHG impact but not to a less than significant level (Class I).

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

- AQ-4a Offset construction-phase greenhouse gas emissions with carbon credits.**
- AQ-4b Offset operation-phase greenhouse gas emissions with carbon credits.**
- AQ-4c Avoid sulfur hexafluoride emissions.**

D.11.14.1 FTHL Eastern Alternative

This alternative was developed by the EIR/EIS team as a way to avoid almost 2 miles within the Flat-Tailed Horned Lizard (FTHL) Management Area. Instead the 500 kV overhead route would follow section lines within agricultural lands and would be approximately 1.5 miles shorter than the proposed route.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The FTHL Eastern Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Imperial Valley Link of the Proposed Project (Section D.11.5). Because it would be 1.5 miles shorter than the Proposed Project, this alternative would marginally reduce the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.14.2 SDG&E West of Dunaway Alternative

This 6.1-mile alternative was suggested by SDG&E and approved by the proposed land use developer in the area. It would be an overhead 500 kV line, and would be 2.2 miles longer than the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The SDG&E West of Dunaway Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Imperial Valley Link of the Proposed Project (Section D.11.5). Because it would be 2.2 miles longer than the Proposed Project, this alternative would marginally increase the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.14.3 SDG&E West Main Canal–Huff Road Modification Alternative

This 4.9-mile alternative would follow the IID Westside Main Canal to the east-northeast, and then turn north on Huff Road. Existing IID 92 kV transmission lines are located on the west side of Huff Road along most of this segment; however, where the IID line would turn northwest, this alternative would continue straight along Huff Road to reconnect with the Proposed Project 0.2 miles south of Wheeler Road (MP 15.9). The lengths of the alternative and the proposed routes would be essentially the same; however, this route would avoid direct effects to the Bullfrog Farms and also to the Raceway development.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The SDG&E West Main Canal–Huff Road Modification Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Imperial Valley Link of the Proposed Project (Section D.11.5). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.15 Anza-Borrego Link Alternatives Impacts and Mitigation Measures

Two alternatives are considered in the Anza-Borrego Link: the Partial Underground 230 kV ABDSP SR78 to S2 Alternative (also considered with an All Underground Option) and the Overhead 500 kV ABDSP within Existing ROW Alternative.

Environmental Setting

The environmental setting would be similar for both of the Anza-Borrego Link alternatives. The air quality setting for all Anza-Borrego Link alternatives is described in Section D.11.2.2. Each of the Anza-Borrego Link alternatives is wholly within San Diego County, administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

The impacts from operation, maintenance and inspections (Impact AQ-2), impacts related to power generation (Impact AQ-3), and the overall net increase of GHG emissions (Impact AQ-4) would be similar for both of the Anza-Borrego Link alternatives. Therefore, in order to avoid repetition, the discussion provided below applies to each of these alternatives.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions generated during operation, maintenance, and inspection activities would be similar for each of the Anza-Borrego Link alternatives. Operation, maintenance, and inspection of the Anza-Borrego Link alternatives would not require a substantial number of new vehicle trips compared to the existing conditions. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be minor and less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Anza-Borrego Link alternatives would facilitate transmission of power into San Diego County and reduce the need to generate power in San Diego County. As in Overall Impacts of Proposed Project (Section D.11.13), the air quality effect of reduced San Diego power plant operation would be less than significant (Class III).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Anza-Borrego Link alternatives would cause an overall net increase of GHG emissions identical to that described in Overall Impacts of Proposed Project (Section D.11.13). Mitigation would reduce the GHG impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

- AQ-4a** **Offset construction-phase greenhouse gas emissions with carbon credits.**
- AQ-4b** **Offset operation-phase greenhouse gas emissions with carbon credits.**
- AQ-4c** **Avoid sulfur hexafluoride emissions.**

D.11.15.1 Partial Underground 230 kV ABDSP SR78 to S2 Alternative

This alternative was developed by the EIR/EIS team and would include installation of a double-circuit bundled 230 kV line (as opposed to an overhead 500 kV with the Proposed Project) that would be installed underground in SR78 through ABDSP. The proposed Central East Substation would not be constructed with this alternative and approximately 2 miles of transmission line (one mile of 500 kV and one mile of 230 kV) to and from that substation would be eliminated. Instead a new 500 kV/230 kV substation would be constructed adjacent to the existing IID San Felipe Substation to accommodate the new transmission line.

There is also an All Underground Option considered for this alternative, in which the entire length of the 230 kV transmission line between the San Felipe Substation and the connection to the Proposed Project would be installed underground in Highways SR78 and S2.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Partial Underground 230 kV ABDSP SR78 to S2 Alternative would generate dust and exhaust emissions from concurrent construction activity with multiple crews operating off-road equipment and on-road mobile sources at separate locations. General construction, excavation of trenches, structure foundation excavation, structure delivery and setup, wire installation, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction. Table D.11-22 shows the estimated emissions for construction of the Partial Underground 230 kV ABDSP SR78 to S2 Alternative transmission line.

Table D.11-22. Emissions from Construction of Partial Underground 230 kV ABDSP SR78 to S2 Alternative Transmission Line

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment and On-Road Vehicles	1,941.7	261.4	101.7	101.7	901.6	41.3	191,725.5
Fugitive Dust	—	—	915.3	106.8	—	—	—
Daily Activity Totals	1,941.7	261.4	1,017.0	208.5	901.6	41.3	191,725.5
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

The air quality impact of building the partial underground 230 kV segment under this alternative would cause emissions over the thresholds. This alternative would occur as a segment of the Proposed Project, and as described for the remainder of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

San Felipe Substation

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The construction activities and emissions caused by building the San Felipe 500/230 kV Substation (Impact AQ-1) would be essentially identical to those of the proposed Central East Substation (Table D.11-15). Although the San Felipe Substation construction emissions would be mainly in the SDAPCD, they would occur adjacent to the ICAPCD. Construction of the substation, as part of the overall proposed construction activities, would cause significant air quality impacts. The APMs in Table D.11-10 would implement strategies to reduce construction emissions, but the dust and exhaust emissions would be significant because they would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would reduce these impacts further, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

All Underground Option

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The All Underground Option of this alternative would cause construction emissions greater than those shown in Table D.11-22. As described for the remainder of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction of this segment would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.15.2 Overhead 500 kV ABDSP within Existing ROW Alternative

The alternative would differ from the proposed route in the Grapevine Canyon area (in the Angelina Springs Cultural District), in the vicinity of Tamarisk Grove Campground, and in a few areas east of Tamarisk Grove Campground along SR78. The alternative would remain within the existing SDG&E

69 kV ROW/easement. This alternative would eliminate towers within State-designated Wilderness. Undergrounding of the existing 69 kV and 92 kV lines would not occur with this alternative; those lines would be underbuilt on Delta lattice towers.

The *East of Tamarisk Grove Campground 150-Foot Option* was suggested by SDG&E in which the alternative would follow the Proposed Project route in the 150-foot proposed alignment, and not the existing ROW, between the eastern Park boundary (MP 60.9) to Tamarisk Grove Campground (MP 74.8) near the SR78/Highway S3 intersection. Similar to the Proposed Project described in Section B.2.2, SDG&E would underbuild and underground the existing 92 kV and 69 kV lines.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Overhead 500 kV ABDSP within Existing ROW Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Anza-Borrego Link of the Proposed Project (Section D.11.5.2). This alternative would somewhat increase the emissions of building the Anza-Borrego Link and the overall emissions of Proposed Project construction (Section D.11.13). Table D.11-23 shows the estimated emissions for construction of the Overhead 500 kV ABDSP within Existing ROW Alternative transmission line.

Table D.11-23. Emissions from Construction of Overhead 500 kV ABDSP within Existing ROW Alternative Transmission Line

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment and On-Road Vehicles	1,488.1	200.3	78.0	78.0	691.0	31.6	146,939.3
Fugitive Dust	—	—	857.7	100.1	—	—	—
Daily Activity Totals	1,488.1	200.3	935.7	178.1	691.0	31.6	146,939.3
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	Yes	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.16 Central Link Alternatives Impacts and Mitigation Measures

Four Central Link Alternatives are considered in this section: the Santa Ysabel Existing ROW Alternative, the Santa Ysabel Partial Underground Alternative, the Santa Ysabel SR79 All Underground Alternative, and the Mesa Grande Alternative.

Environmental Setting

The environmental setting is similar for each of the four Central Link alternatives. The air quality setting for all Central Link alternatives is described in Section D.11.2.3. Each of the Central Link alternatives is wholly within San Diego County, administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

The impacts from operation, maintenance and inspections (Impact AQ-2), impacts related to power generation (Impact AQ-3), and the overall net increase of GHG emissions (Impact AQ-4) would be similar for each of the four Central Link alternatives. Therefore, in order to avoid repetition, the discussion provided below applies to each of these alternatives.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions generated during operation, maintenance, and inspection activities would be similar for each of the Central Link alternatives. Operation, maintenance, and inspection of the Central Link alternatives would not require a substantial number of new vehicle trips compared to the existing conditions, although emissions from activities related to vegetation clearing would be greater than in other links. This activity would occur only occasionally, and the associated emissions would not contribute to a potentially significant impact. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Central Link alternatives would facilitate transmission of power into San Diego County and reduce the need to generate power in San Diego County. As in Overall Impacts of Proposed Project (Section D.11.13), the air quality effect of reduced San Diego power plant operation would be less than significant (Class III).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Central Link alternatives would cause an overall net increase of GHG emissions identical to that described in Overall Impacts of Proposed Project (Section D.11.13). Mitigation would reduce the GHG impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

- AQ-4a** **Offset construction-phase greenhouse gas emissions with carbon credits.**
- AQ-4b** **Offset operation-phase greenhouse gas emissions with carbon credits.**
- AQ-4c** **Avoid sulfur hexafluoride emissions.**

D.11.16.1 Santa Ysabel Existing ROW Alternative

This alternative would follow an existing 69 kV transmission line ROW on the west side of SR79 in the northern half and east of SR79, along the toe of the hill slope in the southern portion of the alternative. This route would pass east of the existing Santa Ysabel Substation and continue to follow the existing 69 kV line south of SR78 until it rejoins the proposed corridor.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Santa Ysabel Existing ROW Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Central Link of the Proposed Project (Section D.11.7). By following an existing ROW, this alternative would marginally reduce the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a** **Suppress dust at all work or staging areas and on public roads.**
- AQ-1b** **Use low-emission construction equipment.**

D.11.16.2 Santa Ysabel Partial Underground Alternative

This 230 kV alternative would begin at MP 105.5 where the proposed route would join Mesa Grande Road at the base of the hills at the western side of the Santa Ysabel Valley. The alternative would transition underground at the southern side of Mesa Grande Road and would travel underground in Mesa Grande Road, SR79 and then, south of SR78, following property lines for approximately one mile to rejoin the proposed route at approximately MP 109.5 where it would transition overhead. The route would be 0.7 miles longer than the proposed route.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Santa Ysabel Partial Underground Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Central Link of the Proposed Project (Section D.11.7). To excavate for the underground segment and build the access road, this alternative would marginally increase the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.16.3 Santa Ysabel SR79 All Underground Alternative

This alternative would diverge from the Proposed Project at MP 100, just south of the crossing of SR78. It would start as an overhead 230 kV line, which would then transition to an underground route on private property, west of SR79. It would be underground along existing dirt roads and within hay fields and SR79 through the Santa Ysabel Valley, rejoining the proposed route south of SR78.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Santa Ysabel SR79 All Underground Alternative would generate dust and exhaust emissions from concurrent construction activity with multiple crews operating off-road equipment and on-road mobile sources at separate locations. General construction, excavation of trenches, structure foundation excavation, structure delivery and setup, wire installation, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction. Table D.11-24 shows the estimated emissions for construction of the Santa Ysabel SR79 All Underground Alternative transmission line.

Table D.11-24. Emissions from Construction of Santa Ysabel SR79 All Underground Alternative Transmission Line

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment and On-Road Vehicles	217.9	29.7	11.5	11.5	105.3	4.8	21,829.8
Fugitive Dust	—	—	13.7	1.6	—	—	—
Daily Activity Totals	217.9	29.7	25.2	13.1	105.3	4.8	21,829.8
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	No	No	No	No	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

The air quality impact of building the 230 kV segment underground as part of this alternative would by itself cause emissions over the thresholds. However, this alternative would occur as a segment of the Proposed Project, and as described for the remainder of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.16.4 SDG&E Mesa Grande Alternative

This alternative to a one-mile portion of the proposed overhead 230 kV route was proposed by the landowner and also by SDG&E in order to reduce the visibility of the overhead line west of Mesa Grande Road. It would diverge from the proposed route at MP 102.2, and rejoin it before MP 104.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The SDG&E Mesa Grande Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Central Link of the Proposed Project (Section D.11.7). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance

thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.17 Inland Valley Link Alternatives Impacts and Mitigation Measures

Four alternatives are considered within the Inland Valley Link: the CNF Existing 69 kV Route Alternative, the Oak Hollow Road Underground Alternative, the San Vicente Road Transition Station Alternative, and the Chuck Wagon Road Alternative.

Environmental Setting

The environmental setting is similar for each of the four Inland Valley Link alternatives. The air quality setting for all Inland Valley Link alternatives is described in Section D.11.2.4. Each of the Inland Valley Link alternatives is wholly within San Diego County, administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

The impacts from operation, maintenance and inspections (Impact AQ-2), impacts related to power generation (Impact AQ-3), and the overall net increase of GHG emissions (Impact AQ-4) would be similar for each of the four Inland Valley Link alternatives. Therefore, in order to avoid repetition, the discussion provided below applies to each of these alternatives.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions generated during operation, maintenance, and inspection activities would be similar for each of the Inland Valley Link alternatives. Operation, maintenance, and inspection of the Inland Valley Link alternatives would not require a substantial number of new vehicle trips compared to the existing conditions, and the incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Inland Valley Link alternatives would facilitate transmission of power into San Diego County and reduce the need to generate power in San Diego County. As in Overall Impacts of Proposed Project (Section D.11.13), the air quality effect of reduced San Diego power plant operation would be less than significant (Class III).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Inland Valley Link alternatives would cause an overall net increase of GHG emissions identical to that described in Overall Impacts of Proposed Project (Section D.11.13). Mitigation would reduce the GHG impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

- AQ-4a Offset construction-phase greenhouse gas emissions with carbon credits.**
- AQ-4b Offset operation-phase greenhouse gas emissions with carbon credits.**
- AQ-4c Avoid sulfur hexafluoride emissions.**

D.11.17.1 CNF Existing 69 kV Route Alternative

This 0.5-mile alternative segment would start at MP 111.3 where the proposed 230 kV and existing 69 kV transmission lines would be routed west for 0.5 miles and then south for approximately 0.5 miles to avoid Cleveland National Forest (CNF). The alternative would remain in the existing 69 kV ROW heading southwest through Cleveland National Forest to rejoin the proposed route at MP 111.8. This alternative would be 0.5 miles shorter than the Proposed Project and the existing 69 kV transmission line would not need to be relocated out of the existing ROW.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The CNF Existing 69 kV Route Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Inland Valley Link of the Proposed Project (Section D.11.8). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**

D.11.17.2 Oak Hollow Road Underground Alternative

The purpose of this alternative would be to extend the proposed underground to the east of Mount Gower County Open Space Preserve so the line would be underground through the valley area. The alternative would require 0.6 miles of additional underground 230 kV transmission line, and the existing 69 kV would remain overhead.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Oak Hollow Road Underground Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Inland Valley Link of the Proposed Project (Section D.11.8). To excavate for the underground segment, this alternative would marginally increase the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.17.3 San Vicente Road Transition Alternative

The alternative would move the transition structure from its proposed location along San Vicente Road (MP 121.9) approximately 0.3 miles west to MP 122.2. The underground line would follow San Vicente Road within a 60-foot ROW for an additional 2,100 feet and would cross under an existing Creelman-Los Coches 69 kV transmission line, before it would turn north and would travel through open space for approximately 200 feet to the overhead transition point.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The San Vicente Road Transition Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Inland Valley Link of the Proposed Project (Section D.11.8). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project,

the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.17.4 Chuck Wagon Road Alternative

This alternative would diverge from the proposed route in San Vicente Boulevard, turning south in Chuck Wagon Road approximately 0.2 miles east of the proposed transition point at MP 121.7. It would continue south for approximately 1.6 miles before passing under the existing Creelman–Los Coches 69 kV transmission line ROW. At this point, the route would transition to overhead and turn west for approximately 1.2 miles to rejoin the proposed route at MP 125.6.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Chuck Wagon Road Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Inland Valley Link of the Proposed Project (Section D.11.8). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.18 Coastal Link Alternatives Impacts and Mitigation Measures

Four alternatives are considered within the Coastal Link: the Pomerado Road to Miramar Area North Alternative, the Los Peñasquitos Canyon Preserve and Mercy Road Alternative, the Black Mountain to Park Village Road Underground Alternative, and the Coastal Link System Upgrade Alternative.

Environmental Setting

The environmental setting is similar for each of the four Coastal Link alternatives. The air quality setting for all Coastal Link alternatives is described in Section D.11.2.5. Each of the Coastal Link alternatives is wholly within San Diego County, administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

The impacts from operation, maintenance and inspections (Impact AQ-2), impacts related to power generation (Impact AQ-3), and the overall net increase of GHG emissions (Impact AQ-4) would be similar for each of the four Coastal Link alternatives. Therefore, in order to avoid repetition, the discussion provided below applies to each of these alternatives.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Dust and exhaust emissions generated during operation, maintenance, and inspection activities would be similar for each of the Coastal Link alternatives. Operation, maintenance, and inspection of the Coastal Link alternatives would not require a substantial number of new vehicle trips compared to the existing conditions, and the incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class III)

Coastal Link alternatives would facilitate transmission of power into San Diego County and reduce the need to generate power in San Diego County. As in Overall Impacts of Proposed Project (Section D.11.13), the air quality effect of reduced San Diego power plant operation would be less than significant (Class III).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I)

Coastal Link alternatives would cause an overall net increase of GHG emissions identical to that described in Overall Impacts of Proposed Project (Section D.11.13). Mitigation would reduce the GHG impact but not to a less than significant level (Class I). The full text of all mitigation measures is presented in Appendix 12.

Mitigation Measure for Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions

- AQ-4a** **Offset construction-phase greenhouse gas emissions with carbon credits.**
- AQ-4b** **Offset operation-phase greenhouse gas emissions with carbon credits.**
- AQ-4c** **Avoid sulfur hexafluoride emissions.**

D.11.18.1 Pomerado Road to Miramar Area North Alternative

This alternative would be underground with the exception of the east and west ends where the line is overhead within existing SDG&E transmission ROWs. This alternative would exit the Sycamore Substation at MCAS Miramar overhead westerly within an existing ROW toward Pomerado Road. The line would transition to underground beneath Pomerado Road in the vicinity of Legacy Road, then continuing underground in Miramar Road, Kearny Villa Road, Black Mountain Road, Activity Road, Camino Ruiz, Miralani Drive, Arjons Drive, Trade Place, Camino Santa Fe, Carroll Road/Carroll Canyon Road and Scranton Road. At the western end, the line would transition to overhead and would be located within the existing 230 kV ROW heading northward into the Peñasquitos Substation.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Pomerado Road to Miramar Area North Alternative would generate dust and exhaust emissions from concurrent construction activity with multiple crews operating off-road equipment and on-road mobile sources at separate locations. General construction, excavation of trenches, structure foundation excavation, structure delivery and setup, wire installation, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction. Table D.11-25 shows the estimated emissions for construction of the Pomerado Road to Miramar Area North Alternative transmission line.

Table D.11-25. Emissions from Construction of Pomerado Road to Miramar Area North Alternative Transmission Line

Construction Activity	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOx (lb/day)	CO ₂ (lb/day)
Off-Road Equipment and On-Road Vehicles	977.8	134.7	52.3	52.3	451.6	22.8	95,969.3
Fugitive Dust	—	—	180.8	22.4	—	—	—
Daily Activity Totals	977.8	134.7	233.1	74.7	451.6	22.8	95,969.3
Significance Criteria	250	75	100	55	550	250	0
Exceed Significance Threshold?	Yes	Yes	Yes	Yes	No	No	**

Source: SDG&E, PEA, 2006; and EIR/EIS Appendix 10.

** For discussion of impact significance of CO₂ emissions and greenhouse gases, see Section D.11.13.3.

The air quality impact of building the 230 kV segment underground as part of this alternative would cause emissions over the thresholds. This alternative would occur as a segment of the Proposed Project, and as described for the remainder of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.18.2 Los Peñasquitos Canyon Preserve and Mercy Road Alternative

This alternative route would bypass the Chicarita Substation and connect to existing ROW along Scripps Poway Parkway in the vicinity of Ivy Hill Drive. The line would then transition to underground and follow Scripps Poway Parkway/Mercy Road, Mercy Road, Black Mountain Road, and finally Park Village Drive, where the alternative route would rejoin the proposed route.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Los Peñasquitos Canyon Preserve and Mercy Road Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Coastal Link of the Proposed Project (Section D.11.9). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.18.3 Black Mountain to Park Village Road Underground Alternative

This alternative would deviate from the Proposed Project alignment where the route approaches Black Mountain Road. Under this alternative, the line would remain underground but would be located underneath Black Mountain Road and would turn west onto Park Village Drive, following the project alignment into the Peñasquitos Substation via the Los Peñasquitos Canyon Preserve.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Black Mountain to Park Village Road Underground Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Coastal Link of the Proposed Project (Section D.11.9). This alternative would not change the overall emissions of Proposed Project construction (Section D.11.13). As a segment of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.18.4 Coastal Link System Upgrade Alternative

The Coastal Link System Upgrade Alternative would be a system modification to install a third 230/69 kV transformer at the existing Sycamore Canyon Substation. Expansion of the Sycamore Canyon Substation would occur within the existing substation easement. Additionally, SDG&E would either (a) install a new 230/138 kV transformer at the existing Encina Substation or (b) upgrade (reconductor) the existing Sycamore Canyon-Chicarita 138 kV circuit using 34 existing wood frame structures.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

The Coastal Link System Upgrade Alternative would generate dust and exhaust emissions with crews operating off-road equipment and on-road mobile sources, similar to the emissions described for the Coastal Link of the Proposed Project (Section D.11.9). To build substation modifications and transmission line route upgrades, this alternative would marginally increase the overall emissions of Proposed Project construction (Section D.11.13) and create construction emissions at the affected substations and along the affected transmission upgrades. As a replacement to part of the Proposed Project, the construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

D.11.19 Top of the World Substation Alternative Impacts and Mitigation Measures

The substation site would be located approximately one mile west of the proposed Central East Substation on Vista Irrigation District land. The transmission line routes into the substation would follow the Proposed Project route to approximately MP 92.7, then the alternative 500 kV route would turn west for 1.1 miles to enter the alternative site. Exiting the substation the line would travel southwest for 400 feet and then west and north-northwest to rejoin the Proposed Project around MP 95.

Environmental Setting

The air quality setting for the Top of the World Substation Alternative is the forested mountainous area of the Central Link that is described in Section D.11.2.3. The Top of the World Substation Alternative is within San Diego County, administered by the SDAPCD.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities for the Top of the World Substation Alternative would involve many of the same types of construction equipment that would be associated with construction of the proposed Central East Substation, and the resulting air quality impacts would be similar to those shown in Table D.11-15. Please see Table D.11-15 for the maximum emissions expected from all activities related to construction of this alternative substation. Construction of the Top of the World Substation Alternative would cause emissions over the thresholds by itself, and as part of the overall Proposed Project construction activities, the air quality impact would be significant. The APMs listed in Table D.11-10 would reduce this impact, but exhaust emissions would exceed the significance thresholds. Mitigation Measures AQ-1a and AQ-1b would further reduce these impacts, but as described for the Proposed Project, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

AQ-1a Suppress dust at all work or staging areas and on public roads.

AQ-1b Use low-emission construction equipment.

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation of the Top of the World Substation Alternative would cause minor vehicular traffic for maintenance and inspections, and the substation would be remotely operated. Direct emissions from occasional vehicular traffic to the substation would cause an adverse but less than significant impact (Class III).

D.11.20 Mitigation Monitoring, Compliance, and Reporting Table

Table D.11-26 presents the mitigation monitoring, compliance and reporting table for Air Quality. Mitigation measures not originating in this section do not appear in the table; they appear only in the mitigation monitoring, compliance and reporting table for the section in which they were originally recommended. For a summary of all impacts and their respective mitigation measures, please see the Impact Summary Tables at the end of the Executive Summary.

Sections D.11.11 and D.11.12 recommend mitigation measures for the projects described under Future Transmission System Expansion and Connected Actions/Indirect Effects. Those mitigation measures are presented for consideration by the agencies that will issue permits for construction of the connected and future projects. Because those projects would not be constructed as a result of approval of the Sunrise Powerlink Project, the recommended mitigation measures are not included in this mitigation monitoring table.

Table D.11-26. Mitigation Monitoring Program – Air Quality

MITIGATION MEASURE	AQ-1a: Suppress dust at all work or staging areas and on public roads. SDG&E shall: (a) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas if construction activity causes persistent visible emissions of fugitive dust beyond the work area; (b) pre-water sites for 48 hours in advance of clearing; (c) reduce the amount of disturbed area where possible; (d) all dirt stock-pole areas should be sprayed daily as needed; (e) cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads; (f) pre-moisten, prior to transport, import and export dirt, sand, or loose materials; (g) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets or wash trucks and equipment before entering public streets; (h) plant vegetative ground cover in disturbed areas as soon as possible following construction; (i) apply chemical soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days); and (j) prepare and file with the ICAPCD, SDAPCD, BLM, and CPUC a Dust Control Plan that describes how these measures would be implemented and monitored at all locations of the project.
Location	All areas including work areas and staging areas.
Monitoring / Reporting Action	Review Dust Control Plan. Verify local air district concurrence with the Plan. Inspect activities for dust control.
Effectiveness Criteria	Dust emissions are reduced. Effectiveness can be monitored by monitoring implementation of the control measures.
Responsible Agency	CPUC, BLM, and affected local air districts
Timing	During construction
MITIGATION MEASURE	AQ-1b: Use low-emission construction equipment. SDG&E shall maintain construction equipment per manufacturing specifications and use low-emission equipment described here. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Sec. 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. If any engine larger than 100 hp does not meet Tier 1 standards, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless the engine manufacturer indicates that the use of such devices is not practical for that particular engine type. SDG&E shall substitute small electric-powered equipment for diesel- and gasoline-powered construction equipment where feasible.
Location	All areas.

Table D.11-26. Mitigation Monitoring Program – Air Quality

Monitoring / Reporting Action	Inspect construction equipment, Portable Equipment Registration Program records, and manufacturer certifications.
Effectiveness Criteria	Engine exhaust emissions are reduced. Effectiveness can be monitored by monitoring implementation of the control measure.
Responsible Agency	CPUC and BLM
Timing	During construction
MITIGATION MEASURE	AQ-1h: Obtain NOx and particulate matter emission offsets. SDG&E shall obtain and hold for the duration of construction NOx emission reduction credits or fund incentive programs approved by ICAPCD and SDAPCD at sufficient levels to offset the construction emissions of NOx that exceed the ozone nonattainment area federal General Conformity Rule applicability threshold. SDG&E shall secure 99 tons per year of NOx reductions and 276 tons per year of particulate matter reductions in Imperial County, and SDG&E shall secure 212 tons per year of NOx reductions in San Diego County to satisfy this requirement. The emission reduction credits or incentive program shall comply with ICAPCD and SDAPCD rules and regulations, and the credits or reductions shall be obtained by SDG&E prior to commencing construction.
Location	All areas.
Monitoring / Reporting Action	As required in General Conformity Final Analysis as Approved by BLM.
Effectiveness Criteria	NOx and particulate matter emissions fully offset.
Responsible Agency	CPUC, BLM, and affected local air districts
Timing	Prior to and during construction
MITIGATION MEASURE	AQ-4a: Offset construction-phase greenhouse gas emissions with carbon credits. SDG&E shall obtain and hold for the duration of project construction sufficient carbon credits to fully offset construction-phase greenhouse gas emissions. During construction SDG&E shall report to the CPUC quarterly the status of efforts to obtain banked credits and the quantity of construction-phase greenhouse gas emissions offset by credits. At a minimum, SDG&E shall obtain and hold carbon credits to offset 55,000 tons of carbon dioxide emissions for each of the two years of construction.
Location	All areas.
Monitoring / Reporting Action	Review SDG&E holdings of carbon credits.
Effectiveness Criteria	Greenhouse gas emissions fully offset.
Responsible Agency	CPUC and BLM
Timing	Prior to and during construction
MITIGATION MEASURE	AQ-4b: Offset operation-phase greenhouse gas emissions with carbon credits. SDG&E shall obtain and hold for the life of the project sufficient carbon credits to fully offset greenhouse gas emissions caused by activity to support transmission line operation, maintenance, and inspection activities. To determine the quantity of carbon credits that must be obtained and held each year, SDG&E must develop a complete GHG inventory annually. SDG&E shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and indirect GHG emissions from transmission and distribution losses associated with the Proposed Project. SDG&E shall report to the CPUC annually the status of efforts to obtain banked credits and the quantity of greenhouse gas emissions offset by credits.
Location	All areas.
Monitoring / Reporting Action	Review SDG&E holdings of carbon credits.
Effectiveness Criteria	Greenhouse gas emissions fully offset.
Responsible Agency	CPUC and BLM
Timing	During operation

Table D.11-26. Mitigation Monitoring Program – Air Quality

MITIGATION MEASURE	AQ-4c: Avoid sulfur hexafluoride emissions. SDG&E shall identify sulfur hexafluoride (SF ₆) leaks and establish a strategy for replacing leaking equipment to reduce SF ₆ leaks. To accomplish this, SDG&E shall develop and maintain a record of SF ₆ purchases, an SF ₆ leak detection and repair program using laser imaging leak detection and monitoring no less frequently than quarterly, an SF ₆ recycling program, and an employee education and training program for avoiding or eliminating SF ₆ emissions caused by the Proposed Project. The SF ₆ leak detection and repair program shall be provided to the CPUC and BLM 90 days prior to project construction. Prior to construction, SDG&E shall also become a Partner in the U.S. EPA's SF ₆ Emissions Reduction Partnership for Electric Power Systems. SDG&E shall also report SF ₆ emissions from the Proposed Project to the California Climate Action Registry according to CCAR methodologies or alternate methodology approved by the California Air Resources Board. To develop a complete GHG inventory, SDG&E shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and indirect GHG emissions from transmission and distribution losses associated with the Proposed Project.
Location	All areas.
Monitoring / Reporting Action	Review strategies for replacing leaking equipment, leak detection and repair, recycling, and education.
Effectiveness Criteria	SF ₆ emissions are avoided.
Responsible Agency	CPUC and BLM
Timing	Prior to construction and during operation

D.11.21 References

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