IV.2 AIR QUALITY

This chapter analyzes the air quality impacts of the Bureau of Land Management's (BLM) proposed Land Use Plan Amendment (LUPA) for the Desert Renewable Energy Conservation Plan (DRECP). This analysis is at a programmatic level. Areas within each air basin share the same air masses so have similar ambient air qualities. It is important to note, therefore, that in this analysis the air quality within each DRECP ecoregion subarea depends upon the air quality in other air basins. Current air quality conditions for each of the air basins in the LUPA decision area are described in Volume III, Section III.2.4.

The analysis in this chapter focuses on the DRECP area, because the proposed LUPA actions outside of the DRECP area would not include activities or components that require analysis for air quality impacts.

IV.2.1 Approach to Impact Analysis

The DRECP area encompasses approximately 33% of the Great Basin Valleys Air Basin, approximately 94% of the Mojave Desert Air Basin, approximately 70% of the Salton Sea Air Basin, and approximately 10% of the San Diego Air Basin. Table IV.2-1 shows each ecoregion subarea, current conditions in those ecoregion subareas for pollutants of most concern (criteria pollutants), and air quality attainment status for both state and federal standards.

The LUPA alternatives will generate solar, wind, geothermal, and transmission renewable energy development applications within identified Development Focus Areas (DFAs). Each proposed project requires applicable National Environmental Policy Act (NEPA) analysis for that project's environmental impacts. Air emissions from anticipated projects in the DRECP area will continue over the life of the DRECP within all DFAs. Because of the size of the DRECP area and the long-term nature of the proposed LUPA, it is unlikely that the construction and location of projects will overlap.

The comparisons of alternatives are based upon anticipated emissions generated by equipment and vehicle exhaust and dust from ground disturbances caused by the construction, operation and maintenance, and decommissioning of renewable energy and transmission projects in affected air basins.

Table IV.2-1
Federal and State Area Designations for Ecoregion Subareas

Ecoregion Subarea	Federal Area Designations												State Area Designations							
	Ozone						PM_{10}				$PM_{2.5}$		Ozone	PM_{10}	$PM_{2.5}$			Hydrogen Sulfide (H_2S)		
	1997 8-hour Standard			2008 8-hour Standard																
	Attainment (maintenance)	Moderate Nonattainment	Severe-15 Nonattainment	Unclassified/ Attainment	Marginal Nonattainment	Severe-15 Nonattainment	Unclassified	Attainment (maintenance)	Moderate Nonattainment	Serious Nonattainment	Unclassified/ Attainment	Nonattainment	Nonattainment	Nonattainment	Unclassified	Attainment	Nonattainment	Unclassified	Attainment	Nonattainment
Cadiz Valley and Chocolate Mountains	X	X	X	X	X	X	X		X	X	X		X	X	X			X		
Imperial Borrego Valley	X	X			X					X	X	X	X	X	X		X	X		
Kingston and Funeral Mountains	X		X	X		X	X		X		X		X	X	X	X	X	X	X	
Mojave and Silurian Valley	X	X	X	X	X	X	X		X		X		X	X	X		X	X		X
Owens River Valley	X			X			X	X	X	X	X		X	X		X		X		
Panamint Death Valley	X	X		X	X		X	X	X		X		X	X	X	X		X	X	X
Pinto Lucerne Valley and Eastern Slopes	X		X	X		X	X		X	X	X		X	X	X		X	X		
Piute Valley and Sacramento Mountains	X			X					X		X		X	X	X			X		
Providence and Bullion Mountains	X		X	X		X			X		X		X	X	X		X	X		
West Mojave and Eastern Slopes	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X

All ecoregion subareas (with the exception of the Owens River Valley and the Piute Valley and Sacramento Mountains) are at some level of nonattainment for the federal standard for ozone. All ecoregion subareas are in nonattainment for ozone for the state standard. As shown in Volume III, Figure III.2-6 (Federal PM_{10} Attainment Status), parts of all of the ecoregion subareas are at some level of nonattainment for particulate matter less than 10 micrometers in diameter (PM_{10}) for both federal and state standards. Parts of the DRECP area are in federal nonattainment for the 1997 8-hour ozone, 2008 8-hour ozone, PM_{10}, $PM_{2.5}$, and in state nonattainment for ozone, PM_{10}, $PM_{2.5}$, and H_2S.

Renewable energy facilities and their associated transmission facilities could expose sensitive receptors to substantial concentrations of hazardous or toxic air pollutants, especially from diesel-powered equipment. Geothermal field development can also cause emissions of odorous H_2S.

Renewable energy development could hinder implementation of air quality plans in existing nonattainment areas. The DRECP area contains multiple Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) charged with air quality planning. The State Implementation Plan (SIP) is a collection of plans developed by state and local air quality agencies and submitted for Environmental Protection Agency (EPA) approval; these plans detail state strategies for achieving federal air quality standards. As shown in Volume III, Section III.2.1.4, individual AQMDs and APCDs are responsible for preparing and implementing their respective local portions of the SIP; potential conflicts with federal or state standards could exacerbate nonattainment conditions. Chapter IV.25 addresses cumulative emissions issues.

IV.2.2 Typical Impacts Common to All Action Alternatives

This chapter describes typical solar, wind, geothermal, and transmission project impacts on air quality on BLM-managed lands. Primary concerns include fugitive dust emissions from soil or ground disturbances and emissions from equipment and motor vehicle engine exhaust. Determination of allowable locations for renewable energy and transmission projects is driven by LUPA decisions, which may either encourage or restrict project development in some areas.

Typical emission levels caused by renewable energy facilities would probably not contribute to regional air quality degradation. Primary air quality impacts would be during construction, which is typically limited to the first few years of project development. (See Appendix R1.2-1 for examples of construction-phase emissions for existing projects in the DRECP area.) Lower-level emissions typically occur during project operations and include routine site upkeep, security patrols, stationary sources like emergency generators and auxiliary boilers, employee transportation, and vegetation removal.

Construction activities for solar, wind, geothermal, and right-of-way development include mobilization, land clearing, earth moving, road construction, ground excavation, drilling and blasting, foundation construction, and installation activities. Heavy equipment used during site preparation includes bulldozers, scrapers, trucks, cranes, rock drills, and blasting equipment.

Construction and operation activities would increase particulate matter and precursors to PM_{10} and $PM_{2.5}$; many air basins are in nonattainment for these two pollutants. Increased amounts of ozone precursors (volatile organic compounds [VOCs] and nitrogen oxides [NO_x]) would result from engine exhaust emissions, which could further exacerbate ozone nonattainment levels.

Increased health risks would result from human exposure to excessive concentrations of hazardous or toxic air pollutants in emissions from gasoline and diesel-powered equipment. Diesel particulate matter is a designated toxic air contaminant in California.

Summary Description of Alternatives. As described in the Draft DRECP and EIR/EIS, the Renewable Energy Action Team agencies anticipate that renewable generation totaling 20,000 megawatts (MW) could be located within each of the alternatives in the DRECP area. Based on DFAs defined in each alternative, total proposed generation located on BLM lands would vary among those alternatives:

- 9,792 MW in the No Action Alternative
- 8,175 MW in the Preferred Alternative
- 3,042 MW in Alternative 1
- 10,726 MW in Alternative 2
- 6,376 MW in Alternative 3
- 7,094 MW in Alternative 4

IV.2.2.1 Impacts of Renewable Energy and Transmission Development

IV.2.2.1.1 Impacts of Site Characterization

Typical air impacts from site characterization activities—which include developing temporary access roads, conducting site reconnaissance, drilling geotechnical borings, and constructing meteorological towers—would be the same for each renewable energy technology (with the addition of specialized surveys for geothermal development). A description of these activities appears in Volume II, Section II.3.3.1.

IV.2.2.1.2 Impacts of Construction and Decommissioning

Typical air quality impacts from construction and decommissioning are from fugitive dust from grading (where allowed by the local agency), vehicles driving on unpaved surfaces or roads, and emissions from heavy-duty construction equipment and vehicles carrying both construction materials and workers. These emissions occur during site development and preparation, transmission line development, building and roadway construction, and during decommissioning and facility removal. The types of emissions would be the same for each renewable energy technology. In-depth lists of these activities appear in Volume II, Sections II.3.3.1.

High levels of construction-related emissions can exacerbate regional nonattainment or expose sensitive receptors to substantial concentrations of hazardous or toxic air pollutants. Assessing air quality impacts from construction usually requires project-specific quantification of the air pollutants emitted by construction activities for each phase of site development, for each project.

Environmental documents for existing renewable energy projects in the DRECP area show a wide range in levels of construction-related emissions and depend, among other factors, on each project's particular accessibility, phasing or sequencing, and its fleet of construction vehicles and equipment. Greater levels of emissions occur at sites with the greatest generating capacities. On average, emissions during a typical project's construction phase are measured for each MW of installed capacity (see Section III.2.8 and Appendix R1.2-1):

- 0.29 tons of NO_x per MW of installed capacity
- 0.07 tons of VOC per MW of installed capacity
- 0.20 tons of PM_{10} per MW of installed capacity
- 0.04 tons of $PM_{2.5}$ per MW of installed capacity

IV.2.2.1.3 Impacts of Operations and Maintenance

Emissions are caused by operations and maintenance activities including routine site upkeep, security patrols, emergency generator use, employee transportation, and vegetation removal. Dust emissions also come from ground disturbances from access and spur road maintenance. Natural gas, solar thermal auxiliary heating, and gasoline and diesel fuel used for facility maintenance emit combustion by-products. Backup power supplies or fire water-pumping engines could also generate emissions if long-term operation and maintenance include diesel-powered emergency-use engines at substations and renewable energy project sites. In-depth lists of operations and maintenance activities are shown in Volume II, Section II.3.3.1. High

levels of emissions can exacerbate regional nonattainment or expose sensitive receptors to substantial concentrations of hazardous or toxic air pollutants.

Geothermal well venting emissions include hydrogen sulfide (H_2S), carbon dioxide (CO_2), mercury, arsenic, and boron (when these compounds are contained in geothermal steam). H_2S is generally the primary pollutant of concern, and typically an air monitoring system is installed during geothermal field development. People exposed to high concentrations of H_2S or other hazardous or toxic air pollutants could experience adverse health effects including both cancer and noncancer health risks. Even at very low concentrations, H_2S odors are objectionable since they smell like rotten eggs.

IV.2.2.2 Impacts of the Ecological and Cultural Conservation and Recreation Designations

In general, conservation designations would define large areas where development would be either very limited or prohibited. Construction activities would be limited, and new vehicle emissions would be permitted at very low levels. In areas with no development, there would be no sources of either construction emissions or stationary sources of emissions. There would also be no anticipated obstacles to meeting the requirements of National Ambient Air Quality Standards, SIP, and other rules within local AQMDs and APCDs.

Because BLM LUPA land designations would be managed to protect ecological, historic, cultural, scenic, scientific, and recreation resources and values, they would also provide general protection for air resources.

IV.2.3 Impact Analysis by Alternative

The following sections present impact analyses on air quality for the No Action Alternative, the Preferred Alternative, and Alternatives 1 through 4.

IV.2.3.1 No Action Alternative

IV.2.3.1.1 Impacts of Renewable Energy and Transmission Development

The No Action Alternative assumes the state's renewable energy goals would be achieved absent the DRECP and that renewable energy, transmission development, and mitigation for those projects in the DRECP area would be developed on a project-by-project basis consistent with past and ongoing renewable energy and transmission projects.

Impact Assessment

The No Action Alternative would result in Impacts AQ-1 through AQ-5 based on 61,500 acres of ground disturbance of BLM land, and additional disturbance due to transmission and operations activities, including activities in nonattainment areas of individual air basins within the DRECP area (see Section IV.2.3.1.1). BLM LUPA lands are within air basins in nonattainment for criteria pollutants, so existing conservation lands would be impacted by emissions from ground disturbance and other development activities. Typical mitigation measures for individual projects would reduce air quality impacts on BLM LUPA lands. Each impact is described below.

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

Development of renewable energy projects and transmission would cause an increase in construction dust and exhaust emissions from construction equipment and vehicles; these emissions could violate or contribute to an existing violation of air quality standards, which would in turn become an adverse air quality impact during construction. The sources of construction dust and the types of motor vehicle or off-road equipment sources would be similar at all project sites; all sites would require construction equipment and crews and create permanent ground disturbances under the No Action Alternative.

Based on the developable lands defined for the No Action Alternative, this level of generation includes about 9,800 MW that would be located on BLM-managed lands in the No Action Alternative. Based on existing projects in the DRECP area and emissions factors described as typical in Section IV.2.2 (see Section III.2.8 and Appendix R1.2-1), total construction emissions of nonattainment pollutants are estimated for the development of approximately 20,000 MW of installed capacity of renewable energy projects. Construction-phase emissions would be distributed across the DRECP area and would be gradually emitted over time until all projects are operational. For each specific project, a wide range of construction-phase emissions would occur, depending on, among other factors, each project's particular accessibility, its phasing or sequencing of activity, and its fleet of construction equipment. Based on factors typical of existing renewable energy projects in the DRECP area, total construction-phase emissions from approximately 20,000 MW of installed capacity, by 2040, would be:

- 5,900 tons of NO_x.
- 1,400 tons of VOCs.
- 4,100 tons of PM_{10}.
- 800 tons of $PM_{2.5}$.

The construction-phase emissions would occur in the Great Basin Valleys Air Basin, the Mojave Desert Air Basin, the Salton Sea Air Basin, and the San Diego Air Basin. Each of the four air basins would be affected by construction emissions, depending upon the locations of projects and types of technology, which may vary between alternatives.

Assuming that individual project sites would be developed to achieve an overall 20,000 MW of installed capacity by 2040, with a portion of the construction on BLM land, construction-phase emissions from BLM projects can be estimated. Table IV.2-2 shows the estimated amount of construction-phase emissions for the No Action Alternative in the BLM portion of the potential build-out.

Table IV.2-2
Estimated Construction-Phase Emissions, No Action Alternative

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
No Action Alternative (Total BLM Portion)	9,792	2,870	680	1,950	400
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

Dust emissions directly relate to the amount of ground disturbance during construction. Permanent ground disturbance under the No Action Alternative is on an estimated 61,500 acres of BLM land, not counting disturbance from transmission. These lands would become potential dust sources from increased ground disturbance during project development.

State Air Quality Standards

Under the No Action Alternative, projects would continue to be built within air basins that are state nonattainment areas for ozone and PM_{10}; construction activities would therefore generate emissions that could contribute to existing ozone and PM_{10} violations. All of the air basins available for renewable energy development under the No Action Alternative would therefore experience short-term air quality impacts during construction.

In addition to contributing to existing violations of the state ambient air quality standards for ozone and PM_{10}, construction activities would cause $PM_{2.5}$ impacts in two areas. The San Bernardino County portion of the federal Southeast Desert Modified Air Quality Management Area for ozone is classified as a $PM_{2.5}$ nonattainment area, as is the portion of the DRECP area within the San Diego Air Basin (see Figure III.2-8, State $PM_{2.5}$ Attainment Status, in Chapter III.2). Construction would generate emissions that would contribute to existing $PM_{2.5}$ violations in those areas.

Federal Air Quality Standards

The federal nonattainment areas of AQMDs and APCDs in the DRECP area are described in detail in Volume III, Section III.2.4. They are summarized in the following paragraphs.

The Great Basin Valleys Air Basin is in attainment for all pollutant standards except for those related to PM_{10}. The Owens Valley Planning Area is a serious PM_{10} nonattainment area, while the Coso Junction Planning Area is a PM_{10} maintenance area.

The Mojave Desert Air Basin is in attainment for all pollutant standards except for those related to ozone and PM_{10}. A large portion of San Bernardino County (including the Trona Planning Area) is a moderate PM_{10} nonattainment area. A portion of East Kern County in the basin is a serious PM_{10} nonattainment area, and the Indian Wells Planning Area (also in Kern County) is a PM_{10} maintenance area.

Portions of Los Angeles and San Bernardino counties in the West Mojave Desert are severe-15 1997 8-hour ozone nonattainment areas. A portion of Eastern Kern County within the basin is a marginal 2008 8-hour ozone nonattainment area, while portions of Los Angeles and San Bernardino counties are severe-15 2008 8-hour ozone nonattainment areas.

The Salton Sea Air Basin is in attainment for all pollutant standards except for those related to ozone, PM_{10}, and $PM_{2.5}$. The Coachella Valley (Riverside County) portion of the basin within the DRECP area is a serious PM_{10} nonattainment area, as is the Imperial Valley Planning Area in Imperial County. A portion of south-central Imperial County is nonattainment for the $PM_{2.5}$ 24-hour standard.

The Riverside County portion of the Salton Sea Air Basin is a severe-15 1997 8-hour ozone nonattainment area. The Imperial County portion of the Salton Sea Air Basin is a moderate 1997 8-hour ozone nonattainment area. The Riverside County portion of the Salton Sea Air Basin is a severe-15 2008 8-hour ozone nonattainment area. The Imperial County portion of the Salton Sea Air Basin is a marginal 2008 8-hour ozone nonattainment area.

The San Diego Air Basin is in attainment for all pollutant standards except for those related to ozone. The San Diego Air Basin is a marginal 2008 8-hour ozone nonattainment area.

Conclusion for Impact AQ-1

Renewable energy project construction would generate emissions that would contribute to existing ozone, PM_{10}, and $PM_{2.5}$ violations because these areas are within both federal and state nonattainment areas. These nonattainment air basins would experience short-term air quality impacts from an increase in dust and vehicle and equipment exhaust emissions.

These emissions could either violate air quality standards or exacerbate existing air quality violations for nonattainment and maintenance areas during the limited, short-term phases of construction.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

Project operations and maintenance activities would increase vehicle and equipment use and its exhaust emissions. These activities, on unpaved surfaces across disturbed project sites and on access roads, would cause dust emissions. For some projects, operations would require installation and use of new stationary or portable equipment. Emissions from these sources could violate or contribute to existing violations of air quality standards. Section IV.2.2.1.3 describes the types of activities and sources of emissions related to long-term operations and maintenance of renewable energy projects. Examples of the stationary sources of emissions from operations include:

- Solar thermal projects that require natural gas combustion for auxiliary heating. Stationary boilers or combustion turbines would emit combustion by-products including hazardous or toxic air pollutants, which in turn would increase air pollutant concentrations and create long-term impacts.
- Geothermal projects that require well venting, steam turbines, and cooling towers, which may release geothermal steam that contains hazardous or toxic air pollutants, aerosols, and particles dissolved in steam or cooling water; these factors would increase air pollutant concentrations and create long-term impacts.
- Backup power generators and fire water-pumping engines that would emit by-products of diesel or natural gas combustion including hazardous or toxic air pollutants that could increase air pollutant concentrations.

All these renewable energy technologies would require operations and maintenance. Routine upkeep of project sites, security patrols, employee commuting, and vegetation removal all cause dust emissions from both vehicles and equipment that travel on unpaved surfaces. These activities would also increase the use of portable equipment and motor vehicles that emit by-products of fuel combustion. Because these activities would occur within air basins that are already in state or federal level nonattainment for ozone, PM_{10}, and $PM_{2.5}$, emissions from these operations and maintenance activities would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

Development of renewable energy projects and transmission under the No Action Alternative would result in exhaust emissions from vehicles and equipment, dust emissions from activity on unpaved surfaces, and in some cases new stationary or portable sources of emissions. Hazardous or toxic air pollutants would also result from geothermal well venting, steam turbines, and cooling towers. These emissions would cause air quality impacts during project operations because sensitive receptors would potentially be exposed to concentrated air pollutants.

The areas available for renewable energy development under the No Action Alternative surround multiple cities with residences, hospitals, and schools including: Tehachapi, California City, Lancaster, Barstow, Adelanto, Victorville, Twentynine Palms, Blythe, Calipatria, Brawley, Imperial, Holtville, El Centro, and Calexico. New emissions sources from renewable energy projects could be close enough to these cities to expose people to high concentrations of pollutants. During the site selection and project permitting processes, adverse health impacts can be avoided by controlling emissions and providing sufficient distance between new sources of air pollution and nearby receptors. Because specific renewable energy project sites have not yet been identified, sensitive receptors could experience adverse air pollutant concentrations under the No Action Alternative.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

Development of renewable energy projects and transmission under the No Action Alternative would result in emissions that could conflict with applicable air quality plans in nonattainment areas. The air quality management plan for each nonattainment area establishes control strategies requiring coordination between project developers, air permitting authorities, and other local agencies and jurisdictions. Subsequent projects developed without full implementation of these control strategies could delay attainment of ambient air quality standards in the air basins. This conflict potential would be limited to areas with existing violations of air quality standards.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal project operations would cause objectionable odors for people living within a mile of a geothermal project. Under the No Action Alternative, geothermal development is identified in the Imperial Borrego Valley ecoregion subarea. Because a substantial number of people live in this area, geothermal development and operations would include odor impacts. Stationary

sources within each geothermal project would be subject to local air district permitting requirements that would establish pollution controls to remove odorous compounds. Local permitting authorities would also consider the effects of objectionable odors. Although routine operations of geothermal facilities would include odor controls, air quality impacts could still occur with operations, accidental releases, or upset conditions.

Laws and Regulations

Existing laws and regulations would reduce the impacts of renewable energy projects in the absence of the DRECP. Relevant regulations are presented in the Regulatory Setting in Volume III. Because this EIS addresses amendments to BLM's land use plans, these plans are addressed separately and are not included in this section. The requirements of relevant regulations would reduce impacts through the following mechanisms:

- The Clean Air Act prohibits federal agencies from, among other things, issuing licenses or permits or approving any activity in a federal nonattainment area that do not conform to an approved SIP. Where the federal action is issuing a permit, license, or other approval for an individual nonfederal project, the federal agency must evaluate the conformity of direct and indirect emissions from construction activities to federally administered lands; the federal agency may then require the project to reduce air emissions as a condition of its decision.
- The California Clean Air Act requires that AQMDs and APCDs implement regulations that control stationary-source emissions through local district rules and permit requirements, and to also implement local air quality management plans that demonstrate how attainment would be achieved. Applicable air quality plans may include programs and control strategies to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures (e.g., demonstrating the overall effectiveness of the air quality program, reducing nonattainment pollutants or their precursors at a rate of 5% per year, or reducing population exposure to severe nonattainment pollutants according to a prescribed schedule).
- The California Air Toxics Program establishes the process for identifying and controlling toxic air contaminants, including provisions to raise public awareness of significant toxic exposures and how to reduce risk.
- The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588 Connelly) requires that stationary sources report the types and quantities of certain substances routinely released into the air (e.g., collect emission data, identify facilities with localized impacts, assess health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels).

- The Children's Environmental Health Protection Act, SB 25 (Chapter 731 Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. This act requires that the Air Resources Board review air quality standards from a child's health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children's health.
- The SIP is a collection of documents that sets forth the state's strategies for achieving federal air quality standards. In California, each local air district is responsible for preparing and implementing the portions of the SIP that apply within each local jurisdiction. The DRECP area boundaries encompass areas under the jurisdiction of multiple air districts (Volume III, Figure III.2-2, State Air Districts).

Design Features of the Solar PEIS

- The Solar Programmatic EIS (PEIS) includes numerous design features (Appendix W) that would reduce the impacts of solar energy development on BLM lands, including:
    - Measures to minimize impacts on air quality from siting design and construction (e.g., using Tier 3, Tier 4 and Tier 4i equipment, preparing a dust abatement plan, and managing unpaved roads and disturbed areas—as defined in AQC2-1 in the Solar PEIS).
    - Measures to minimize impacts on air quality from operations, maintenance, reclamation, and decommissioning (e.g., monitoring and treating areas, reapplying palliatives, and ensuring compliance of all combustion sources with federal and state emission standards—defined in AQC3-1 and AQC4-1 in the Solar PEIS).

Typical Mitigation Measures

Air quality mitigation adopted for approved projects is assumed to be similar to the types of mitigation measures that would apply in the future under the No Action Alternative. Following are the types of mitigation that would likely be implemented under the No Action Alternative.

<u>Typical Mitigation Measures for Solar and Wind Projects</u>

1. Air Quality Construction Mitigation Manager: The project owner shall designate and retain an on-site air quality construction mitigation manager who shall be responsible for directing and documenting compliance with mitigation measures (e.g., fugitive dust control, dust plume response requirements, and diesel-fueled engine control) for the entire project site and linear facility construction. The air

quality construction mitigation manager shall have full access to all areas of construction on the project site and linear facilities and shall have the authority to stop any or all construction activities when warranted by applicable construction mitigation conditions.

2. Air Quality Construction Mitigation Plan: The project owner shall provide an Air Quality Construction Management Plan for approval that details steps to be taken and the reporting requirements necessary to ensure compliance with mitigation measures for construction fugitive dust control, dust plume response requirements, and diesel-fueled engine control.
3. Construction Fugitive Dust Control: The air quality construction mitigation manager shall submit documentation in each Monthly Compliance Report that demonstrates compliance with Air Quality Construction Mitigation Plan measures for minimizing fugitive dust emissions from construction activities and preventing all fugitive dust plumes that do not comply with the performance standards identified for the dust plume response requirement. The definition of stabilized surface for purposes of fugitive dust control means that fugitive dust would be controlled by using a soil binding agent or other effective means to suppress and keep dust from leaving project boundaries, and also to neither cause nor create fugitive dust plumes that could leave the project site.
4. Dust Plume Response Requirement: The air quality construction mitigation manager shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that could potentially either (1) be transported off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner, or (2) extend 200 feet beyond the centerline of the construction of linear facilities, indicating ineffectiveness of existing mitigation measures.
5. Diesel-Fueled Engine Control: The air quality construction management manager shall submit, in the Monthly Compliance Report, a table that demonstrates compliance with Air Quality Construction Mitigation Plan measures for controlling diesel construction-related combustion emissions.
6. Obtain only dedicated on-road or off-road vehicles for mirror-washing activities and other maintenance activities that meet either California's on-road vehicle emission standards or applicable EPA/California EPA off-road engine emission standards (for the latest model year available when obtained).
7. Provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures that ensure that operations and maintenance activities will prevent fugitive dust plumes.

8. Provide copies of all district-issued authority-to-construct and permit-to-operate documents for the facility.
9. Submit Quarterly Operation Reports that both demonstrate compliance and highlight incidences of noncompliance.
10. Operate the cooling towers with high efficiency mist eliminators (to reduce drift to no more than 0.0005% of recirculating water flow); determine and report on water quality.

Typical Mitigation Measures for Geothermal Projects

1. Fugitive PM_{10} control measures shall be implemented where feasible.
2. Construction equipment emissions control measures shall be implemented at the project site during all construction activities, when feasible.
3. Geothermal steam vents shall be equipped with suitable odor control and air pollution control systems. An example is a regenerative thermal oxidizer unit and caustic scrubber system that would abate combustible non-condensible gas air pollutant emissions during project operations. High-efficiency drift eliminators shall also be used to abate PM_{10} emissions from cooling towers.
4. Geothermal facilities shall mitigate project air pollutants by purchasing emission offset credits, where available, from one or more entities before seeking construction permits.
5. Geothermal facilities shall achieve synthetic minor source status by controlling project hazardous air pollutants.

IV.2.3.1.2 Impacts of Ecological and Cultural Conservation and Recreation Designations

The No Action Alternative has no new conservation designations, but without approval of an action alternative, there would be continued protection of existing Legislatively and Legally Protected Areas such as wilderness areas. In addition, under the No Action Alternative, renewable energy projects would continue to be evaluated and approved with project-specific mitigation requirements.

IV.2.3.1.3 Impacts of Transmission Outside the DRECP Area

Outside of the DRECP area, additional transmission lines would be needed to deliver additional electricity to load centers (areas of high demand). It is assumed that new transmission lines outside of the DRECP area would use existing transmission corridors between the DRECP area and existing substations in the more populated coastal areas of

the state. Areas outside of the DRECP area through which new transmission lines might be constructed are San Diego, Los Angeles, North Palm Springs–Riverside, and Central Valley. These areas and the status of their air resources are described in Volume III, Chapter III.2, Section III.2.8.

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

Construction of new transmission lines outside of the DRECP area would result in short-term impacts in transmission rights-of-way, which would create ground disturbance. The air basins in which transmission lines would be constructed are state and federal nonattainment areas. They would therefore experience short-term impacts from ground-disturbing activities, most notably for PM_{10}, $PM_{2.5}$, and ozone.

Operational Impacts. Operation and maintenance of the new lines would require vehicle and helicopter use for periodic inspections and repairs. The use of vehicles on unpaved access roads can generate dust, but this would occur infrequently. Emissions from the equipment and motor vehicles used for routine operation and maintenance of the transmission lines, and the dust caused by crews occasionally inspecting or repairing those lines, would occur at much lower levels than during construction. The following impacts to air quality would occur during operations, but at much lower levels than during construction:

- Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.
- Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

The following impacts to air quality would not occur during operations of transmission projects:

- Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.
- Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

IV.2.3.2 Preferred Alternative

IV.2.3.2.1 Impacts of Renewable Energy and Transmission Development

The Preferred Alternative integrates renewable energy elements and conservation elements to moderate conflicts in DFAs between biological and nonbiological resources and provide development flexibility. The DFAs are concentrated in a few locations, with some smaller DFAs

throughout the DRECP area. DFAs under the Preferred Alternative would include 81,000 acres of permanent disturbance of BLM land, primarily from solar projects.

Impact Assessment

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

The construction of renewable energy technologies and transmission would increase dust and exhaust emissions from construction equipment and vehicles, which could violate or contribute to an existing violation of air quality standards, which would in turn be a short-term air quality impact during construction. The sources of construction dust and types of motor vehicle or off-road equipment sources would be similar at all development sites. Ground disturbance would also generate dust.

The Preferred Alternative covers the same air basins as the No Action Alternative, and state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Aside from site-specific differences and differences in the acres of dust-generating activities, the Preferred Alternative would result in the same total emissions from construction-phase activities for developing approximately 20,000 MW of installed capacity as under the No Action Alternative.

Each air basin would be affected by construction emissions, depending on the geographic distribution of the development mix under the Preferred Alternative. Table IV.2-3 shows the estimated amount of construction-phase emissions for the BLM portion of the potential build-out.

Table IV.2-3
Estimated Construction-Phase Emissions, Preferred Alternative

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Preferred Alternative (Total BLM Portion)	8,175	2,390	570	1,620	340
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

The nonattainment air basins with renewable energy development under the Preferred Alternative would experience a short-term air quality impact from both increased dust emissions and vehicle and equipment exhaust emissions. These emissions could violate air

quality standards or exacerbate existing air quality violations and nonattainment conditions during the short-term phases of construction.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

Operation of renewable energy technologies and transmission would increase vehicle and equipment use and its associated exhaust emissions. Activities on unpaved surfaces across disturbed project sites and on access roads would also cause dust emissions. Some projects would require stationary or portable emissions sources during operations. Emissions from these sources could violate or contribute to an existing violation of air quality standards. Examples of these activities and sources are listed in the Impact AQ-2 discussion for the No Action Alternative in Section IV.2.3.1.1.1.

All of the renewable energy technologies would require some operations and maintenance activities. Routine upkeep of the site, security patrols, employee transportation, and vegetation removal all cause dust emissions from vehicles and equipment travelling on unpaved surfaces. Because these activities would occur within both state and federal nonattainment areas, emissions from these operations and maintenance activities would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

Operation of renewable energy technologies and transmission would generate exhaust emissions from vehicles and equipment, dust emissions from activity on unpaved surfaces, and, in some cases, from stationary or portable emissions sources. During the site selection and project permitting processes, adverse health impacts can be avoided by controlling emissions and providing sufficient separation between new sources of air pollution and nearby receptors. Depending on the development sites, renewable energy and transmission emissions sources could be close enough to one another to expose sensitive receptors to adverse air pollutant concentrations under the Preferred Alternative.

The areas available for renewable energy development under the Preferred Alternative surround multiple cities with residences, hospitals, and schools including: Tehachapi, California City, Lancaster, Barstow, Adelanto, Victorville, Blythe, Calipatria, Brawley, Imperial, Holtville, El Centro, and Calexico. Because the specific renewable energy project sites are not yet known, sensitive receptors could experience adverse air pollutant concentrations under the Preferred Alternative.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

Operation of renewable energy technologies and transmission would result in project-related emissions that could conflict with applicable air quality plans in nonattainment areas if projects do not fully implement control strategies.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal technology creates objectionable odors. Under the Preferred Alternative, geothermal technology is planned within DFAs in either the Owens River Valley or the Imperial Borrego Valley ecoregion subareas. Because a substantial number of people live in these areas, geothermal development could create adverse air quality impacts for people living within one mile of a geothermal project.

Local permitting authorities would consider the effects of objectionable odors. Although routine operations of geothermal facilities would include required odor controls, operations, accidental releases, or upset conditions could cause air quality impacts.

Impacts on Variance Process Lands

Variance Process Lands are neither conservation lands nor DFAs. They are a subset of the variance lands identified in the Solar PEIS Record of Decision (ROD) and additional lands that, based on current information, have moderate to low ecological value and ambiguous value or potential for renewable energy development. If renewable energy projects are built on Variance Process Lands, LUPA would not be required, so the environmental review process would be simpler than if the location were left as undesignated.

Variance Process Lands for each alternative are shown in Chapter IV.1, Table IV.1-2, and in Volume II, Chapter II.3, Figure II.3-1 for the Preferred Alternative. Development of Variance Process Lands would have similar air quality effects as those described in Impacts AQ-1 through AQ-5.

Impact Reduction Strategies

Implementation of the Proposed LUPA would conserve some desert lands while clearing the way for the development of renewable energy generation and transmission facilities on other lands. There are two ways that the impacts of renewable energy development covered by the Proposed LUPA could be lessened. First, the Proposed LUPA incorporates the Design Features of the Solar PEIS as well as Conservation and Management Actions (CMAs) for each alternative, including specific biological conservation designations and

LUPA components. Second, the implementation of existing laws, orders, regulations, and standards would effectively reduce the overall impacts of project development.

Design Features of the Solar PEIS

The Solar PEIS design features for minimizing emissions described for the No Action Alternative (Section IV.2.3.1.1) would similarly reduce the air quality impacts of this alternative.

Conservation and Management Actions

The CMAs that apply to air resources follow:

- DRECP area LUPA-AIR-1: All activities must meet the following requirements:
  - Applicable National Ambient Air Quality Standards (Section 109)
  - State Implementation Plan (SIP) (Section 110)
  - Control of pollution from federal facilities (Section 118), including nonpoint sources
  - Prevention of significant deterioration, including to visual impacts in mandatory federal Class I areas (Section 160 et seq.)
  - Conformity analyses and determinations (Section 176[c])
  - Best management practices on a case-by-case basis
  - Applicable local air quality management jurisdictions (e.g., Rule 403 South Coast Air Quality Management District)
- LUPA-AIR-2: Because project authorizations are a federal undertaking, air quality standards for fugitive dust should exceed local standards and should be applied continuously 7 days a week.
- LUPA-AIR-3: Where impacts to air quality may be significant or require documentation, discussion, or analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and the potential air quality impacts of a proposed project (including cumulative and indirect impacts and greenhouse gas emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities and proposed mitigation measures to minimize net PM_{10} and $PM_{2.5}$ emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbances. A Construction Emissions Mitigation Plan will be developed.

- LUPA-AIR-4: Fugitive dust is the number one source of PM_{10} and $PM_{2.5}$ pollution in the Mojave and Sonoran deserts. Where impacts to air quality may be significant, the analysis must include a model of the sources of PM_{10} and $PM_{2.5}$ prior to construction and show their timing, duration, and transport both on and off a project site. Modeling will also identify how the generation and movement of PM_{10} and $PM_{2.5}$ will change during and after construction of the project, under all alternatives.
- LUPA-AIR-5: A Fugitive Dust Control Plan will be developed for all projects where a National Environmental Policy Act analysis shows an impact to air quality from fugitive dust.

The following biological resource Conservation and Management Action would have a beneficial effect on air quality:

- LUPA-BIO-6 (partial): The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife predators.

Laws and Regulations

Similar to the No Action Alternative, existing laws and regulations will reduce certain air quality impacts. Relevant regulations are presented in the Regulatory Setting in Volume III. The requirements of relevant laws and regulations are summarized for the No Action Alternative in Section IV.2.3.1.1.1.

IV.2.3.2.2 Impacts of Conservation Designations

The Preferred Alternative would provide more than 5 million additional acres within the DRECP area with protective land designations and additional acreages with recreational values. Establishing lands with protective designations would restrict development and the potential for adverse air quality impacts.

Because BLM LUPA land designations protect ecological, historical, cultural, scenic, scientific, and recreational resources and values, the creation of air quality impacts from renewable energy projects would likely be limited. While other land uses within these areas are allowed, they must be compatible with the resources and values that the land designation is intended to protect. Impacts to air quality are not likely from changes to BLM land designations.

IV.2.3.2.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside of the DRECP area on air quality would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.2.3.1.5.1.

IV.2.3.2.4 Comparison of the Preferred Alternative With No Action Alternative

The Preferred Alternative would result in long-term impacts from construction dust from ground disturbance and exhaust emissions from construction equipment and vehicles. It would result in 81,000 acres of permanent disturbance of BLM land, compared with 100,000 acres under the No Action Alternative. The acres of transmission remain about the same.

The Preferred Alternative covers the same air basins as the No Action Alternative, and the state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. The air basins with renewable energy development under the Preferred Alternative that are within state and federal nonattainment areas would experience similar impacts from development activities. However, the Preferred Alternative would shift development from eastern Kern County to the West Mojave Desert of San Bernardino County, which is an area with more severe air quality violations.

The Preferred Alternative would not have project development near Twentynine Palms, so sensitive receptors would not be exposed to substantial pollutant concentrations in this location.

The Preferred Alternative would create more emissions from ground disturbance and other development activities in the Imperial Borrego Valley, Mojave and Silurian Valley, Owens River Valley, Pinto Lucerne Valley and Eastern Slopes, and West Mojave and Eastern Slopes ecoregion subareas than under the No Action Alternative.

The BLM LUPA would not affect existing BLM guidance on air quality but would change the pattern of development. Compared to the No Action Alternative, less development may take place on BLM lands under the Preferred Alternative, resulting in fewer air emissions on and around those lands.

IV.2.3.3 Alternative 1

IV.2.3.3.1 Impacts of Renewable Energy and Transmission Development

The primary driver of Alternative 1 is confining renewable energy development to low-conflict disturbed lands, thereby providing the fewest conflicts between biological and nonbiological resources. Development flexibility would therefore be limited. There would be 52,000 acres of permanent disturbance of BLM land from renewable energy development.

Impact Assessment

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

Construction of renewable energy technologies and transmission would increase dust and exhaust emissions from construction equipment and vehicles, which could violate or contribute to existing violations of air quality standards, which in turn could create air quality impacts under Alternative 1. The sources of construction dust and the types of motor vehicle or off-road equipment sources would be similar at all development sites. Dust would also be generated by ground disturbance.

Alternative 1 covers the same air basins as the No Action Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Aside from site-specific differences and differences in the acreage of dust-generating activities, this alternative would result in the same total emissions from construction-phase activities as under the No Action Alternative and the Preferred Alternative.

Each air basin would be affected by construction emissions, depending on the geographic distribution of the development mix under Alternative 1. Table IV.2-4 shows estimated construction-phase emissions for the BLM portion of the potential build-out.

Table IV.2-4
Estimated Construction-Phase Emissions, Alternative 1

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Alternative 1 (Total BLM Portion)	3,042	890	210	600	120
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

The nonattainment air basins with renewable energy development under Alternative 1 would experience short-term air quality impacts from increases in dust emissions and vehicle and equipment exhaust emissions from project development. These emissions could violate air quality standards or exacerbate existing air quality violations and nonattainment conditions during the short-term phases of construction.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

Operation of renewable energy technologies and transmission would include operations and maintenance activities that would increase vehicle and equipment emissions, dust emissions, and, for some projects, new stationary or portable emissions sources. Emissions from these sources could violate or contribute to an existing violation of air quality standards. Examples of these activities and sources are listed in the Impact AQ-2 discussion for the No Action Alternative in Section IV.2.3.1.1.1.

All of the renewable energy technologies would require some operations and maintenance activities that would cause new sources of dust emissions and other emissions from fossil-fueled equipment. Because these activities would be within both state and federal nonattainment areas, emissions from the operations and maintenance activities would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

Operation of renewable energy technologies and transmission would result in exhaust emissions from vehicles and equipment, dust emissions from activities on unpaved surfaces, and, in some cases, new stationary or portable sources of emissions. Depending on the development sites, new emissions sources could be close enough to sensitive receptors to expose them to adverse air pollutant concentrations under Alternative 1.

The areas available for renewable energy development under Alternative 1 surround multiple cities with residences, hospitals, and schools including: Tehachapi, Lancaster, Adelanto, Victorville, Blythe, Calipatria, and Calexico. Because the specific renewable energy project sites are not yet known, sensitive receptors could experience adverse air pollutant concentrations under Alternative 1.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

Operation of renewable energy technologies and transmission would result in project-related emissions that could conflict with applicable air quality plans in nonattainment areas if projects do not fully implement control strategies.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal technology may cause objectionable odors for people within one mile of geothermal vents or other geothermal system components. Under Alternative 1, geothermal technology is planned within DFAs in the Imperial Borrego Valley, Mojave and Silurian Valley, and the West Mojave and Eastern Slopes ecoregion subareas. Because a substantial number of people live in these areas, geothermal development could create an air quality impact for people near the odor sources. Although routine operations of geothermal facilities would include odor controls, an air quality impact could still occur from operations, accidental releases, or upset conditions.

Impacts on Variance Process Lands

Variance Process Lands are neither conservation lands nor DFAs. They are a subset of the variance lands identified in the Solar PEIS ROD and additional lands that, based on current information, have moderate to low ecological value and ambiguous potential for renewable energy development. If renewable energy development occurs on Variance Process Lands, LUPA would not be required, so the environmental review process would be simpler than if the location were left as undesignated.

Variance Process Lands for each alternative are shown in Chapter IV.1, Table IV.1-2 and in Volume II, Chapter II.4, Figure II.4-1 for Alternative 1. Development of Variance Process Lands would have similar air quality effects as described in Impacts AQ-1 through AQ-5.

Impact Reduction Strategies and Mitigation

Implementation of the proposed LUPA would result in the conservation of some desert lands as well as the development of renewable energy generation and transmission in other lands. There are two ways that the impacts of the renewable energy development covered by LUPA could be lessened. First, the proposed LUPA incorporates CMAs for each alternative, including specific biological conservation designation components and LUPA components. Second, the implementation of existing laws, orders, regulations, and standards would reduce the impacts of project development.

Design Features of the Solar PEIS

The Solar PEIS design features for minimizing emissions described in the No Action Alternative (Section IV.2.3.1.1) would reduce the air quality impacts of this alternative.

Conservation and Management Actions

The conservation strategy for Alternative 1 (presented in Volume II, Section II.4.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes definitions for conservation designations and specific CMAs for the Preferred Alternative (see Section IV.2.3.2.1 for a list of CMAs).

Laws and Regulations

Similar to the No Action Alternative, existing laws and regulations will reduce certain impacts of project development. Relevant regulations are presented in the Regulatory Setting in Volume III. The requirements of relevant laws and regulations are summarized for the No Action Alternative in Section IV.2.3.1.1.1.

IV.2.3.3.2 Impacts of Conservation Designations

Alternative 1 would provide more than 5.5 million additional acres within the DRECP area with protective land designations and additional acres designated for recreation. Establishing lands with protective designations would restrict development and its potential for air quality impacts.

Because BLM LUPA land designations protect ecological, historical, cultural, scenic, scientific, and recreational resources and values, the creation of air quality impacts would likely be limited. Land uses within these areas are allowed if they are compatible with the resources and values that the land designation is intended to protect. Impacts to air quality are not likely from changes to BLM land designations.

IV.2.3.3.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside of the DRECP area on air quality would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.2.3.1.5.1.

IV.2.3.3.4 Comparison of Alternative 1 With Preferred Alternative

Alternative 1 results in long-term impacts from construction dust from ground disturbance and exhaust emissions from construction equipment and vehicles.

Compared with the Preferred Alternative, Alternative 1 would result in much less ground disturbance on BLM land. Alternative 1 covers the same air basins as the Preferred Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. The air basins with renewable energy development under Alternative 1

that are within state and federal nonattainment areas would experience similar impacts from development activities. Mitigation measures would be the same for Alternative 1 and the Preferred Alternative.

Alternative 1 would not have development near California City, Barstow, Brawley, Imperial, El Centro, or Holtville, while the Preferred Alternative could do so; sensitive receptors would therefore not be exposed to substantial pollutant concentrations under Alternative 1.

Alternative 1 would create more emissions from ground disturbance and other development in the Imperial Borrego Valley, Mojave and Silurian Valley, Owens River Valley, Pinto Lucerne Valley and Eastern Slopes, and Providence and Bullion Mountains ecoregion subareas than under the Preferred Alternative.

The BLM LUPA would not affect existing BLM guidance on air quality but would change the pattern of development. Compared to the Preferred Alternative, less development could take place on BLM land under Alternative 1, resulting in fewer air emissions.

IV.2.3.4 Alternative 2

IV.2.3.4.1 Impacts of Renewable Energy and Transmission Development

Alternative 2 has the common goal with other alternatives of confining renewable energy development to low-conflict disturbed lands, thereby providing the fewest conflicts between biological and nonbiological resources. Alternative 2 would result in the permanent disturbance of 88,000 acres of BLM land.

Impact Assessment

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

All of the Proposed LUPA components of renewable energy technologies and transmission would increase construction dust and exhaust emissions from construction equipment and vehicles and could also violate or contribute to existing violations of air quality standards, which in turn would create air quality impacts under Alternative 2. The sources of construction dust and types of motor vehicle and off-road equipment would be similar at all development sites. Ground disturbance would also generate dust.

Alternative 2 covers the same air basins as the No Action Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Aside from site-specific differences and differences in the acreage of dust-generating activities, this

alternative would result in the same total emissions from construction-phase activities as under the No Action Alternative and the Preferred Alternative.

Each air basin would be affected by construction emissions, depending on the geographic distribution of the development mix under Alternative 2. Table IV.2-5 shows the estimated construction-phase emissions for the BLM portion of the potential build-out.

Table IV.2-5
Estimated Construction-Phase Emissions, Alternative 2

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Alternative 2 (Total BLM Portion)	10,726	3,140	740	2,130	440
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

The nonattainment air basins with renewable energy development under Alternative 2 would experience short-term air quality impacts from dust emissions and vehicle and equipment exhaust emissions from project development. These emissions could violate air quality standards or exacerbate existing air quality violations and nonattainment conditions during the short-term phases of construction.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

All of the Proposed LUPA components from renewable energy operations and maintenance activities would increase vehicle and equipment use and its associated exhaust emissions, dust emissions, and, for some projects, new stationary or portable emissions. Emissions from these sources could violate or contribute to existing violations of air quality standards. Examples of these activities and sources are listed in the Impact AQ-2 discussion for the No Action Alternative in Section IV.2.3.1.1.1.

All of the renewable energy technologies would require some operations and maintenance activities, which would in turn result in new sources of dust emissions and emissions from new fossil-fueled equipment. Because these activities would occur within both state and federal nonattainment areas, emissions from operations and maintenance activities would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

All of the Proposed LUPA components from renewable energy technologies and transmission would generate exhaust emissions from vehicles and equipment, dust emissions from activity on unpaved surfaces, and, in some cases, new stationary or portable sources of emissions. Depending on the development sites, new emissions sources could be close enough to sensitive receptors to expose them to adverse air pollutant concentrations under Alternative 2.

The areas available for renewable energy development under Alternative 2 surround multiple cities with residences, hospitals, and schools including: Tehachapi, California City, Lancaster, Adelanto, Victorville, Barstow, Blythe, Calipatria, Brawley, Imperial, El Centro, Holtville, and Calexico. Because specific renewable energy project sites are not yet known, sensitive receptors could experience adverse air pollutant concentrations under Alternative 2.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

All development components from the renewable energy technologies and transmission would result in project-related emissions that could conflict with local air quality plans in nonattainment areas if projects do not fully implement the control strategies in those plans.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal technology may cause objectionable odors. Under Alternative 2, geothermal technology is planned within DFAs in the Owens River Valley, Mojave and Silurian Valley, or Imperial Borrego Valley ecoregion subareas. Because a substantial number of people live in these areas, geothermal development could create an air quality impact if people reside less than one mile from the odor sources. Although routine operations of geothermal facilities would need to include applicable odor controls, an air quality impact would occur if operations, accidental releases, or upset conditions would cause noticeable odors.

Impacts on Variance Process Lands

Variance Process Lands are neither conservation lands nor DFAs. They are a subset of the variance lands identified in the Solar PEIS ROD and additional lands that, based on current information, have moderate to low ecological value and ambiguous value for renewable energy. If renewable energy development occurs on Variance Process Lands, a LUPA would not be required, so the environmental review process would be somewhat simpler than if the location were left undesignated.

Variance Process Lands for each alternative are as shown in Chapter IV.1, Table IV.1-2 and in Volume II, Chapter II.5, Figure II.5-1 for the Alternative 2. Development of the Variance Process Lands would have similar air quality effects as described above under Impacts AQ-1 through AQ-5.

Impact Reduction Strategies and Mitigation

The implementation of the Proposed LUPA would result in conservation of some desert lands as well as the development of renewable energy generation and transmission facilities on other lands. There are two ways in which the impacts of the renewable energy development covered by the Proposed LUPA would be lessened. First, the Proposed LUPA incorporates CMAs for each alternative, including specific biological conservation designation components and LUPA components. Second, the implementation of existing laws, orders, regulations, and standards would reduce the impacts of project development.

Design Features of the Solar PEIS

The Solar PEIS design features for minimizing emissions described in the No Action Alternative (Section IV.2.3.1.1) would reduce air quality impacts.

Conservation and Management Actions

The conservation strategy for Alternative 2 (presented in Volume II, Section II.5.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes definition of the conservation designations and specific CMAs for the Preferred Alternative (see Section IV.2.3.2.1 for a list of relevant CMAs).

Laws and Regulations

Similar to the No Action Alternative, existing laws and regulations will reduce certain impacts of project development. Relevant regulations are presented in the Regulatory Setting in Volume III. The requirements of relevant laws and regulations are summarized for the No Action Alternative in Section IV.2.3.1.1.1.

IV.2.3.4.2 Impacts of Conservation Designations

Alternative 2 would provide more than over 5 million additional acres within the DRECP area with protective land designations and additional acres of recreation. Establishing lands with protective designations would restrict development and its potential for air quality impacts.

Because BLM LUPA land designations protect ecological, historical, cultural, scenic, scientific, and recreational resources and values, adverse air quality impacts would be limited. Land uses within these areas are allowed only if they are compatible with the resources and values that the land designation is intended to protect. Impacts to air quality are therefore not likely to result from changes to BLM land designations.

IV.2.3.4.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside of the DRECP area on air quality would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.2.3.1.5.1.

IV.2.3.4.4 Comparison of Alternative 2 With Preferred Alternative

Alternative 2 would have long-term impacts from construction dust from ground disturbance and exhaust emissions from equipment and vehicles. Compared with the Preferred Alternative, Alternative 2 would result in greater disturbance of BLM land.

Alternative 2 covers the same air basins as the Preferred Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Projects in air basins under Alternative 2 that are within state and federal nonattainment areas would experience similar impacts from development. Mitigation measures would be the same for Alternative 2 and the Preferred Alternative.

Alternative 2 would not have development near Twentynine Palms, similar to the Preferred Alternative, so sensitive receptors would not be exposed to substantial pollutant concentrations in this location under either alternative.

Alternative 2 would create more emissions from ground disturbance and other development in the Mojave and Silurian Valley, Owens River Valley, Panamint Death Valley, Pinto Lucerne Valley and Eastern Slopes, Providence and Bullion Mountains, and West Mojave Eastern Slopes ecoregion subareas than under the Preferred Alternative.

The BLM LUPA would not affect existing BLM guidance on air quality but would change the pattern of development. Compared with the Preferred Alternative, Alternative 2 could result in more development, and hence greater air emissions, on BLM lands.

IV.2.3.5 Alternative 3

IV.2.3.5.1 Impacts of Renewable Energy and Transmission Development

Alternative 3 has the common goal with the other alternatives of confining renewable energy development to low-conflict disturbed lands, thereby providing the fewest conflicts between biological and nonbiological resources. The DFAs under Alternative 3 are dispersed, with less development planned for the Cadiz Valley and Chocolate Mountains, Imperial Borrego Valley, and West Mojave and Eastern Slopes ecoregion subareas. Minimum development flexibility would also result. Alternative 3 would cause the permanent disturbance of 69,000 acres of BLM land.

Impact Assessment

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

All of the activities associated with renewable energy technologies and transmission would increase construction dust and exhaust emissions from construction equipment and vehicles and could violate or contribute to existing violations of air quality standards, which would in turn impact air quality during construction under Alternative 3. Sources of construction dust and the types of motor vehicle or off-road equipment would be similar at all development sites. Ground disturbance would also generate dust.

Alternative 3 covers the same air basins as the No Action Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Aside from site-specific differences and differences in the acreage of dust-generating activities, this alternative would result in the same total emissions from construction activities for developing approximately 20,000 MW of renewable energy installed capacity as under the No Action Alternative and the Preferred Alternative.

Each air basin would be affected by construction emissions, depending on the geographic distribution of the development mix under Alternative 3. Table IV.2-6 shows estimated construction emissions for the BLM portion of the potential build-out.

Table IV.2-6
Estimated Construction-Phase Emissions, Alternative 3

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Alternative 3 (Total BLM Portion)	6,376	1,870	440	1,270	260
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

The nonattainment air basins with renewable energy development under Alternative 3 would experience short-term air quality impacts from an increase in dust emissions and vehicle and equipment exhaust emissions from project development. These emissions could violate air quality standards or exacerbate existing air quality violations and nonattainment conditions during the short-term phases of construction.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

All of the activities related to renewable energy technologies and transmission from operations and maintenance activities would increase vehicle and equipment use with its associated exhaust emissions, dust emissions, and, for some projects, new stationary or portable emissions sources. Emissions from these sources could violate or contribute to existing violations of air quality standards. Examples of these activities and sources are listed in the Impact AQ-2 discussion for the No Action Alternative in Section IV.2.3.1.1.1.

All of the renewable energy technologies would require some operations and maintenance activities, causing new sources of dust emissions and other sources that emit combustion by-products. Because these activities are within both state and federal nonattainment areas, emissions from operations and maintenance activities would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

All of the activities related to development of renewable energy and transmission projects would cause exhaust emissions from vehicles and equipment, dust emissions from activity on unpaved surfaces, and, in some cases, new stationary or portable sources of emissions. Depending on the development sites, new emissions sources from renewable energy projects could be close enough to sensitive receptors to expose them to adverse air pollutant concentrations under Alternative 3.

The areas available for renewable energy development under Alternative 3 surround multiple cities with residences, hospitals, and schools including: Tehachapi, California City, Lancaster, Adelanto, Victorville, Barstow, Blythe, Calipatria, and Calexico. Because the specific renewable energy project sites are not yet known, sensitive receptors could experience adverse air pollutant concentrations under Alternative 3.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

All of the activities related to development of renewable energy and transmission projects would generate emissions that could conflict with applicable air quality plans in nonattainment areas if projects do not fully implement control strategies.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal projects may cause objectionable odors. Under Alternative 3, geothermal technology is planned within DFAs in the Owens River Valley, Mojave and Silurian Valley, and Imperial Borrego Valley ecoregion subareas. Because a substantial number of people live in these areas, geothermal development could create air quality impacts for people within one mile of odor sources. Although routine operations of geothermal facilities would include odor controls, air quality impacts could still occur from operations, accidental releases, or upset conditions.

Impacts on Variance Process Lands

Variance Process Lands are neither conservation lands nor DFAs. They are a subset of the variance lands identified in the Solar PEIS ROD and additional lands that, based on current information, have moderate to low ecological value and ambiguous potential for renewable energy development. If renewable energy development occurs on Variance Process Lands, LUPA would not be required, so the environmental review process would be simpler than if the location were left as undesignated.

Variance Process Lands for each alternative are as shown in Chapter IV.1, Table IV.1-2 and in Volume II, Chapter II.3, Figure II.3-1 for the Preferred Alternative. Development of the Variance Process Lands would have similar air quality effects as described in Impacts AQ-1 through AQ-5.

Impact Reduction Strategies and Mitigation

Implementation of the Proposed LUPA would result in the conservation of some desert lands as well as the development of renewable energy generation and transmission

facilities in other lands. There are two ways in which the impacts of the renewable energy development covered by the Proposed LUPA could be lessened. First, the Proposed LUPA incorporates CMAs for each alternative, including specific biological conservation designation components and LUPA components. Second, the implementation of existing laws, orders, regulations, and standards would reduce the impacts of project development.

Design Features of the Solar PEIS

The Solar PEIS design features for minimizing emissions described for the No Action Alternative (Section IV.2.3.1.1) would reduce the air quality impacts of this alternative.

Conservation and Management Actions

The conservation strategy for Alternative 3 (presented in Volume II, Section II.6.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes definition of the conservation designations and specific CMAs for the Preferred Alternative (see Section IV.2.3.2.1 for a list of the CMAs).

Laws and Regulations

Similar to the No Action Alternative, existing laws and regulations will reduce certain impacts of project development. Relevant regulations are presented in the Regulatory Setting in Volume III. The requirements of relevant laws and regulations are summarized for the No Action Alternative in Section IV.2.3.1.1.1.

IV.2.3.5.2 Impacts of Conservation Designations

Alternative 3 would provide more than 5 million additional acres within the DRECP area with protective land designations and additional acres for recreation. Establishing lands with protective designations would restrict development and its potential to impact air quality.

Because BLM LUPA land designations protect ecological, historical, cultural, scenic, scientific, and recreational resources and values, the creation of air quality impacts would be limited. Land uses within these areas are allowed only if they are compatible with the resources and values that the land designation is intended to protect. Impacts to air quality are therefore not likely from changes to BLM land designations.

IV.2.3.5.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside of the DRECP area on air quality would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.2.3.1.5.1.

IV.2.3.5.4 Comparison of Alternative 3 With Preferred Alternative

Alternative 3 results in long-term impacts from construction dust from ground disturbance and exhaust emissions from construction equipment and vehicles. Alternative 3 would result in less permanent disturbance of BLM land compared with the Preferred Alternative.

Alternative 3 covers the same air basins as the Preferred Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. The air basins with renewable energy development under Alternative 3 that are within state and federal nonattainment areas would experience similar impacts from development activities. The mitigation measures would be the same for Alternative 3 and the Preferred Alternative.

Alternative 3 would not have development activities near Twentynine Palms, similar to the Preferred Alternative; sensitive receptors would therefore not be exposed to substantial pollutant concentrations in this location under either alternative. Alternative 3 would not have development activities near Brawley, Holtville, Imperial, or El Centro, while the Preferred Alternative could; sensitive receptors would therefore not be exposed in these locations under Alternative 3.

Alternative 3 would create more emissions from ground disturbance and other development activities in the Imperial Borrego Valley, Mojave and Silurian Valley, Owens River Valley, Panamint Death Valley, Pinto Lucerne Valley and Eastern Slopes, Providence and Bullion Mountains, and West Mojave Eastern Slopes ecoregion subareas than under the Preferred Alternative.

The BLM LUPA would not affect existing BLM guidance on air quality but would change the pattern of development. Compared with the Preferred Alternative, Alternative 3 could result in less development, and hence fewer air emissions, on BLM lands.

IV.2.3.6 Alternative 4

IV.2.3.6.1 Impacts of Renewable Energy and Transmission Development

Similar to the Preferred Alternative, under Alternative 4, the DFAs on BLM lands have moderate conflict between biological and nonbiological resources and provide moderate

development flexibility. The DFAs are concentrated in few locations with some smaller DFAs throughout the DRECP area. However, there are fewer DFAs in the Imperial Borrego Valley ecoregion subarea under Alternative 4 than under the Preferred Alternative. Alternative 4 results in long-term impacts on 71,000 acres of BLM land.

Impact Assessment

Impact AQ-1: Plan components would generate short-term air emissions that violate any air quality standard or contribute to an existing or projected air quality violation.

All of the activities related to development of renewable energy technologies and transmission would increase construction dust and exhaust emissions from construction equipment and vehicles and could violate or contribute to existing violations of air quality standards, which would in turn create air quality impacts during construction under Alternative 4. The sources of construction dust and the types of motor vehicle or off-road equipment sources would be similar at all development sites. The ground disturbance would also generate dust.

Alternative 4 covers the same air basins as the No Action Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. Aside from site-specific differences and differences in the acreage of dust-generating activities, this alternative would result in the same total emissions from construction as under the No Action Alternative and the Preferred Alternative.

Each air basin would be affected by construction emissions, depending on geographic distribution of the development mix under Alternative 4. Table IV.2-7 shows estimated construction emissions for the BLM portion of the potential build-out.

Table IV.2-7
Estimated Construction-Phase Emissions, Alternative 4

Alternative	Capacity (MW)	NO_x (tons)	VOC (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Alternative 4 (Total BLM Portion)	7,094	2,080	490	1,410	290
Total for DRECP Area	**20,000**	**5,900**	**1,400**	**4,100**	**800**

Source: Estimated construction-phase emissions for the DRECP area equal to the capacity (MW) multiplied by an average emission factor of total construction-phase emissions in tons per MW (from data for existing projects in the DRECP area presented in Volume III, Section III.2.8, and Appendix R1.2-1).

The nonattainment air basins with renewable energy development under Alternative 4 would experience short-term air quality impacts from increased dust emissions and vehicle and equipment exhaust emissions from project development. These emissions could

violate air quality standards or exacerbate existing air quality violations and nonattainment conditions during short-term construction phases.

Impact AQ-2: Long-term operations air emissions would violate air quality standards or contribute to air quality violations.

All of the activities related to operation of renewable energy technologies and transmission would cause increased vehicle and equipment use with their associated exhaust emissions, dust emissions, and, for some projects, new stationary or portable emissions sources. Emissions from these sources could violate or contribute to existing violations of air quality standards. Examples of these activities and sources are listed in the Impact AQ-2 discussion for the No Action Alternative in Section IV.2.3.1.1.1.

All of the renewable energy technologies would require some operations and maintenance activities, creating new sources of dust emissions and combustion by-products from fossil-fueled sources. Because these activities would occur within both state and federal nonattainment areas, emissions from operations and maintenance would exacerbate nonattainment conditions.

Impact AQ-3: Operations would expose air quality–sensitive receptors to adverse air pollutant concentrations.

The development of renewable energy technologies and transmission would result in exhaust emissions from vehicles and equipment, dust emissions from activity on unpaved surfaces, and, in some cases, from new stationary or portable sources of emissions. Depending on the development sites, new emissions sources could be close enough to sensitive receptors to expose them to adverse air pollutant concentrations under Alternative 4.

The areas available for renewable energy development under Alternative 4 surround multiple cities with residences, hospitals, and schools including: Tehachapi, California City, Lancaster, Adelanto, Victorville, Barstow, Blythe, Calipatria, and Calexico. Because the specific renewable energy project sites are not yet known, sensitive receptors could experience adverse air pollutant concentrations under Alternative 4.

Impact AQ-4: Operations would conflict with or obstruct implementation of applicable air quality plans.

All of the activities related to development and operation of renewable energy technologies and transmission would cause project-related emissions that could conflict with applicable local air quality plans in nonattainment areas if projects do not fully implement the control strategies in those plans.

Impact AQ-5: Operations would create objectionable odors affecting a substantial number of people.

Geothermal technology may result in objectionable odors. Under Alternative 4, geothermal technology is planned within DFAs in the Owens River Valley, West Mojave and Eastern Slopes, Mojave and Silurian Valley, and the Imperial Borrego Valley ecoregion subareas. Because a substantial number of people live in these areas, geothermal development could create adverse air quality impacts for people within one mile of the odor sources. Although routine operations of geothermal facilities would include applicable odor controls, air quality impacts could still occur from operations, accidental releases, or upset conditions.

Impacts on Variance Process Lands

Variance Process Lands are neither conservation lands nor DFAs. They are a subset of the variance lands identified in the Solar PEIS ROD and additional lands that, based on current information, have moderate to low ecological value and ambiguous potential for renewable energy development. If renewable energy development occurs on Variance Process Lands, LUPA would not be required, so the environmental review process would be simpler than if the location were left as undesignated.

Variance Process Lands for each alternative are as shown in Chapter IV.1, Table IV.1-2 and in Volume II, Chapter II.7, Figure II.7-1 for Alternative 4. Development of the Variance Process Lands would have similar air quality effects as described under Impacts AQ-1 through AQ-5.

Impact Reduction Strategies and Mitigation

The implementation of the Proposed LUPA would result in the conservation of some desert lands as well as the development of renewable energy generation and transmission facilities in other lands. There are two ways in which the impacts of the renewable energy development covered by the Proposed LUPA would be lessened. First, the Proposed LUPA incorporates CMAs for each alternative, including specific biological conservation designation components and LUPA components. Second, the implementation of existing laws, orders, regulations and standards would reduce the impacts of project development.

Design Features of the Solar PEIS

The Solar PEIS design features for minimizing emissions described for the No Action Alternative (Section IV.2.3.1.1) would reduce the air quality impacts of this alternative.

Conservation and Management Actions

The conservation strategy for Alternative 4 (presented in Volume II, Section II.7.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes definitions of conservation designations and specific CMAs for the Preferred Alternative (see Section IV.2.3.2.1 for a list of CMAs).

Laws and Regulations

Similar to the No Action Alternative, existing laws and regulations will reduce certain impacts of project development. Relevant regulations are presented in the Regulatory Setting in Volume III. The requirements of relevant laws and regulations are summarized for the No Action Alternative in Section IV.2.3.1.1.1.

IV.2.3.6.2 Impacts of Conservation Designations

Alternative 4 would provide more than 4.4 million additional acres within the DRECP area with protective land designations. Establishing lands with protective designations would restrict development and its potential for air quality impacts.

Because the BLM LUPA land designations protect ecological, historical, cultural, scenic, scientific, and recreational resources and values, the creation of air quality impacts would be limited. Land uses within these areas are only allowed if they are compatible with the resources and values that the land designation is intended to protect. Impacts to air quality are therefore not likely from changes to BLM land designations.

IV.2.3.6.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside of the DRECP area on air quality would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.2.3.1.5.1.

IV.2.3.6.4 Comparison of Alternative 4 With Preferred Alternative

Alternative 4 results in long-term impacts from construction dust from ground disturbance and exhaust emissions from construction equipment and vehicles. Alternative 4 would result in less disturbance of BLM land compared with the Preferred Alternative.

Alternative 4 covers the same air basins as the Preferred Alternative, so state and federal air quality standards are the same as those described in Section IV.2.3.1.1.1. The air basins with renewable energy development under Alternative 4 that are within state and federal

nonattainment areas would experience similar impacts from development. The mitigation measures would be the same for Alternative 4 and the Preferred Alternative.

Alternative 4 would not have development activities near Twentynine Palms, similar to the Preferred Alternative; sensitive receptors would therefore not be exposed to substantial pollutant concentrations in this location under either alternative. Alternative 4 would not have development activities near Brawley, Holtville, Imperial, or El Centro, while the Preferred Alternative could. Sensitive receptors would not be exposed in these locations under Alternative 4.

Alternative 4 would create more emissions from ground disturbance and other development activities in the Cadiz Valley and Chocolate Mountains, Mojave and Silurian Valley, Owens River Valley, Panamint Death Valley, and West Mojave Eastern Slopes ecoregion subareas than would the Preferred Alternative.

The BLM LUPA would not affect existing BLM guidance on air quality but would change the pattern of development. Compared with the Preferred Alternative, Alternative 4 could result in less development, and therefore fewer air emissions, on BLM lands.

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