

Section 3.6 Greenhouse Gas Emissions

This section evaluates greenhouse gas (GHG) emissions associated with the proposed project and analyzes the project's consistency with applicable GHG reduction plans and policies. This section is based on technical data presented in *Ord Mountain and Solar Energy Storage Project and Calcite Substation Project Air Quality and Greenhouse Gas Emissions Assessment*, prepared by Dudek and peer-reviewed by Michael Baker International (Dudek 2017; see **Appendix C**).

ENVIRONMENTAL SETTING

The project site is located in the southwestern portion of the Mojave Desert Air Basin (Basin). The Basin covers an area of 27,287 square miles and is California's largest air basin. The Basin comprises portions of four counties: eastern Kern County, northeast Los Angeles County, eastern Riverside County, and all but a small southwestern portion of San Bernardino County. The Basin's terrain is diverse, including low elevation desert, high elevation desert, and mountain areas.

REGULATORY FRAMEWORK

FEDERAL

To date, no national GHG reduction targets or climate plans have been adopted that would apply to CEQA or San Bernardino County.

STATE

The following includes some of the key state directives and policies pertaining to GHG reduction.

ASSEMBLY BILL 32

The California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500–38599) established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020.

SENATE BILL 97

SB 97 (2007) (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097) acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The Natural Resources Agency adopted amendments to the CEQA Guidelines in 2010 to address the directive. As a result, CEQA lead agencies are required to estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to

determine whether project-level or cumulative impacts could occur, and mitigate the impacts where feasible.

SENATE BILL 32

SB 32 (2017) codifies a 2030 GHG reduction target of 40 percent below 1990 levels by 2030. The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

SENATE BILL 375

SB 375 (2008) (Chapter 728, Statutes of 2008) aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires each metropolitan planning organization (MPO) to adopt a sustainable communities strategy or alternative planning strategy that will prescribe land use allocation in that MPO's regional transportation plan. CARB is charged with reviewing each MPO's sustainable communities' strategy or alternative planning strategy for consistency with its assigned targets. San Bernardino County is part of the Southern California Association of Governments (SCAG) MPO and is covered under SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (SCAG 2016).

LOCAL

SAN BERNARDINO COUNTY GENERAL PLAN

The County's General Plan Conservation Element includes the following goals and policies related to reducing greenhouse gas emissions:

CONSERVATION ELEMENT

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|-----------------------|---|
| <i>Policy CO 4.5</i> | Reduce emissions through reduced energy consumption. |
| <i>Policy CO 4.12</i> | Provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, and hydrogen fuel). |
| <i>Policy CO 4.13</i> | Reduce Greenhouse Gas (GHG) emissions within the County boundaries. |
| Goal CO 8 | The County will minimize energy consumption and promote safe energy extraction, uses and systems to benefit local regional and global environmental goals. |

Policy CO 8.1 Maximize the beneficial effects and minimize the adverse effects associated with the siting of major energy facilities. The County will site energy facilities equitably in order to minimize net energy use and consumption of natural resources, and avoid inappropriately burdening certain communities. Energy planning should conserve energy and reduce peak load demands, reduce natural resource consumption, minimize environmental impacts, and treat local communities fairly in providing energy efficiency programs and locating energy facilities.

Policy CO 8.2 Conserve energy and minimize peak load demands through the efficient production, distribution and use of energy.

COUNTY OF SAN BERNARDINO GREENHOUSE GAS EMISSIONS REDUCTION PLAN

The San Bernardino County *Greenhouse Gas Emissions Reduction Plan* (GHG Plan 2011) presents a comprehensive set of actions to reduce the County's internal and external GHG emissions to 15 percent below current 2011 levels by 2020, consistent with the AB 32 Scoping Plan. The GHG Plan has a review standard of 3,000 metric tons (MT) of carbon dioxide equivalent (CO₂e) per year to identify projects that require Screening Tables or a project specific technical analysis to quantify and mitigate GHG emissions. Projects that do not exceed the 3,000 MT CO₂e per year threshold are considered to be consistent with the GHG Reduction Plan and are determined to have a less than significant individual and cumulative impact for GHG emissions.

IMPACT ANALYSIS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The following thresholds of significance are based, in part, on CEQA Guidelines Appendix G. For the purposes of this EIR, the proposed project may have a significant adverse impact related to greenhouse gas emissions if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- As discussed previously, San Bernardino County's GHG Plan set a screening threshold of 3,000 MT CO₂e per year. Projects that do not exceed the 3,000 MT CO₂e per year threshold are considered to be consistent with the GHG Reduction Plan and determined to have a less than significant individual and cumulative impact for GHG emissions.

PROJECT IMPACTS AND MITIGATION

GREENHOUSE GAS EMISSIONS

Impact 3.6-1 **The project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Impacts would be less than significant.**

CONSTRUCTION EMISSIONS

Construction of the project would result in GHG emissions, primarily associated with the use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The County’s GHG Plan recommends that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. Thus, the project’s total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO₂e per year. The determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

A spreadsheet-based model was used to calculate the annual GHG emissions based on the construction scenario described in **Appendix C**. Construction was assumed to commence in 2019 and reach completion at the end of 2020, lasting a total of approximately 16 months. On-site sources of GHG emissions include off-road equipment, and off-site sources include on-road vehicles (haul trucks, vendor trucks, and worker vehicles). Table 3.6-1, *Estimated Annual Construction GHG Emissions*, shows construction emissions for the project in 2019 and 2020 from on- and off-site emissions sources.

**Table 3.6-1:
Estimated Annual Construction GHG Emissions**

Year	Metric Tons per Year			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2019 – Ord Mountain	946.47	0.19	0.15	994.88
2019 – Calcite Substation	1,354.50	0.11	0.06	1,375.13
2019 Total	2,300.97	0.30	0.21	2,370.01
2020 – Ord Mountain	328.33	0.11	0.11	364.08
2020 – Calcite Substation	1,053.50	0.09	0.04	1,067.67
2020 Total	1,381.83	0.20	0.15	1,431.75
Total	3,682.80	0.50	0.36	3,801.76
<i>Annualized Emissions over 30 Years</i>	—	—	—	126.73

Source: Dudek 2017, Appendix C

Notes: CH₄ = methane; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; N₂O = nitrous oxide

As shown in Table 3.6-1, the estimated total GHG emissions during construction would be approximately 2,370 MT CO₂e in 2019 and 1,432 MT CO₂e in 2020, for a total of 3,802 MT CO₂e over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 126.73 MT CO₂e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis below.

OPERATIONAL EMISSIONS

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. The spreadsheet model was used to calculate the annual GHG emissions based on the operational assumptions described in **Appendix C**. No GHG emissions are estimated to be generated by the Calcite Substation during operation.

During operations and maintenance, one source of GHG emissions unique to electrical infrastructure would be fugitive emissions from equipment containing sulfur hexafluoride (SF₆) gas installed at the proposed Calcite Substation and at the on-site substation within the solar and energy storage facility. These facilities would be air-insulated, and the circuit breakers and 220-kV ground disconnect switches would have a maximum annual leak rate of 0.5 percent, based on the manufacturer's guaranteed specifications. The 220-kV ground disconnect switches are unique to the proposed project and are a maintenance requirement due to 220-kV fault duty (protection against abnormal electric current). The annual fugitive SF₆ emissions anticipated from project operation are included in the area emissions source category in Table 3.6-2, *Estimated Annual Operational GHG Emissions*.

The estimated operational (year 2021) project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 3.6-2.

**Table 3.6-2:
Estimated Annual Operational GHG Emissions**

Emissions Source	Metric Tons per Year			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Energy	414.48	11.97	0.07	735.21
Area	0.00	0.00	0.00	4.07
Mobile	21.97	0.00	0.00	22.64
Total	436.45	11.97	0.07	761.91
<i>Annualized Emissions over 30 Years</i>	—	—	—	126.73
Operation + Amortized Construction Total	—	—	—	888.64

Source: Dudek 2017, Appendix C

Notes: CH₄ = methane; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; N₂O = nitrous oxide SF₆ emissions are included in the Area emissions source category.

As shown in Table 3.6-2, estimated annual project-generated GHG emissions would be approximately 762 MT CO₂e per year as a result of project operation. Estimated annual project-generated operational emissions in 2021 and amortized project construction emissions would be approximately 889 MT CO₂e per year. As shown, the total annual emissions would not exceed the GHG significance threshold of 3,000 MT CO₂e per year. Therefore, the project would result in a less than significant impact.

Mitigation Measures: None required.

Level of Significance: Less than significant.

CONFLICT WITH APPLICABLE PLANS, POLICIES, OR REGULATIONS

Impact 3.6-2 **The project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.**

As depicted in Tables 3.6-1 and 3.6-2, construction and operation of the project would not exceed the 3,000 MT CO₂e per year threshold adopted by San Bernardino County. Based on the guidance presented in the County’s GHG Plan, the proposed project would be consistent with the applicable plan adopted to reduce GHG emissions. In addition, the project is consistent with the goals and policies of the San Bernardino County General Plan Conservation Element. Therefore, the project would result in a less than significant cumulative impact to GHG emissions and climate change.

Mitigation Measures: None required.

Level of Significance: Less than significant.

CUMULATIVE IMPACTS

Impact 3.6-3 The project would not result in cumulative impacts related to greenhouse gases. Impacts would be less than significant.

CUMULATIVE IMPACTS

Climate change is an inherently cumulative category of impact. No one project will cause climate change, rather it is the agglomeration of all global emissions that causes harm. To help address its contribution to the cumulative issue, California has elected to reduce GHG emissions at the state level for activities under its control and has promulgated policy for local agencies to do the same.

Renewable energy production potentially offsets GHG emissions generated by fossil-fuel power plants. The project would provide a potential reduction of 67,495 MT CO₂e per year if the electricity generated by the Ord Mountain Solar Energy Project were to be used instead of electricity generated by fossil-fuel sources. After accounting for the annualized construction and annual operational emissions of 807 MT CO₂e per year, and the annualized reduction in GHG from the production of solar energy of 2,250 MT CO₂e, the net reduction in GHG emissions would be 1,443 MT CO₂e per year.

The proposed project's GHG emissions would fall below established County thresholds and would not detract from achieving state GHG reduction targets. In addition, if the energy produced by the project were used as a replacement for an existing fossil-fuel power plant, GHG emissions would decrease. Therefore, the project's GHG emissions are not cumulatively considerable.

Mitigation Measures: None required.

Level of Significance: Less than significant.

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