D.6 Climate Change

This section describes the affected environment for Climate Change and greenhouse gas (GHG) emissions in Section D.6.1 and presents the relevant regulations and standards in Section D.6.2. Sections D.6.3 through D.6.5 describe the impacts of the Proposed Project and the alternatives. Section D.6.6 presents the mitigation measures and mitigation monitoring requirements, and D.6.7 lists references cited.

D.6.1 Environmental Setting / Affected Environment

Globally, temperature, precipitation, sea level, ocean currents, wind patterns, and storm activity are all affected by the presence of greenhouse gas (GHG) pollutants in the atmosphere. In contrast to air quality, which generally is a regional or local concern, human-caused emissions of GHGs have been linked to climate change on a global scale. GHGs allow ultraviolet radiation to enter the atmosphere and warm the Earth's surface and prevent some infrared radiation emitted by the Earth from escaping into space. Human activity contributes to emissions of six primary GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).

The largest anthropogenic source of GHGs is fossil fuel combustion, which primarily results in CO_2 emissions. Other GHG emissions tracked by State inventories occur in much smaller quantities. However, the global warming potential of CH_4 is about 25 times that of CO_2 (CARB, 2014a). The use of sulfur hexafluoride (SF_6) in power transformers and circuit breakers at power plants, switchyards, and substations also poses a concern, because this pollutant can slowly escape from the equipment, and it has an extremely high global warming potential (GWP). One pound of SF_6 has the equivalent warming potential of approximately 22,800 pounds of CO_2. When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO_2 emission rate (CO2e).

In 2008, when California first formalized a strategy for achieving GHG reductions, the State produced approximately 487 million metric tons of CO_2 equivalent (MMTCO2e), an amount equal to about 537 million tons (CARB, 2014b). (One metric ton (MT) equals 1,000 kilograms, which is 2,204.6 pounds or about 1.1 short tons.) In 2012, California's emissions were approximately 459 MMTCO2e (CARB, 2014b), less than one percent of the 49,000 MMTCO2e emitted globally (IPCC, 2014).

D.6.1.1 Regional Setting and Approach to Data Collection

The environmental setting for climate change and GHG is based upon a review of the official emissions inventory, and information from regional, State, and federal agencies on the effects of climate change and programs for GHG controls. Project-specific emission forecasts are from the applicant. The resources used for this analysis were gathered from the following sources:

- Intergovernmental Panel on Climate Change (IPCC),
- U.S. Environmental Protection Agency (U.S. EPA),
- State of California, Air Resources Board (CARB),
- California Office of Environmental Health Hazard Assessment (OEHHA),
- South Coast Air Quality Management District (SCAQMD), and
- Other information found in the Proponent's Environmental Assessment (PEA).

D.6.1.2 Environmental Setting

The Proposed Project falls within two California air basins, as discussed in Section D.3 Air Quality. In the context of climate change and GHG emissions, the discussion of the environmental setting would be the same for each Segment of the Proposed Project because of the global effects of climate change and because the inventory and programs for control of GHG emissions are statewide.

Climate Change Indicators and Evidence

Climate scientists make global-scale observations and reconstructions of the climate system. For the period 1950 onwards, relatively comprehensive data sets of observations are available. Consensus expressed by the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) shows that: "warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased" (IPCC, 2013).

Focusing on California, the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) compiles various indicators and evidence to illustrate the many aspects of climate change, namely, how temperature and precipitation are changing, and how these changes are affecting the environment, specifically freshwater and marine systems, as well as humans, plants, and animals (OEHHA, 2013). Since California's initial GHG strategy of 2008, the scientific evidence has continued to indicate that the climate is changing. This evidence includes rising temperatures, shifting snow and rainfall patterns, and increased incidence of extreme weather events (CARB, 2014a).

Table D.6-1 summarizes the recent OEHHA findings for California on climate change drivers, observed changes in climate, how natural physical systems respond, and emerging issues. The documented effects of climate change also include impacts on terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply. Examples of the terrestrial effects include increasing tree mortality, large wildfires, and changes in vegetation density and distribution (OEHHA, 2013).

Table D.6-1. Summary of OEHHA Findings on Climate Change Indicators in California

Climate Change Drivers
▪ GHG Emissions. California emissions of greenhouse gases, namely carbon dioxide, methane, nitrous oxide, and high global warming potential gases have seen an overall increase between 1990 and 2011. In recent years, however, emissions have generally been declining. Emissions per $1,000 of the state's economic output, measured as gross state product (GSP) have decreased from 2000 through 2011, despite increases in GSP and in the state's population. Carbon dioxide from the combustion of fossil fuels for transportation accounts for the largest proportion of emissions.
▪ Atmospheric GHG concentrations. Atmospheric concentrations of the greenhouse gases carbon dioxide and methane have been increasing in coastal areas of the state. This is consistent with global trends, as represented by levels measured at Mauna Loa, Hawaii. Carbon dioxide levels at Mauna Loa rose from 315.7 parts per million (ppm) in 1958 to 389.7 ppm in 2010. Levels tend to be higher in California; for example, CO2 values were between 392.7 to 398.3 ppm in 2010.
▪ Atmospheric black carbon concentrations. Atmospheric concentrations of black carbon, a powerful short-lived climate pollutant, have dropped significantly over the past several decades. A component of soot, black carbon is emitted by diesel-burning vehicles, residential wood burning and wildfires. Reductions in black carbon levels since the 1980s are due largely to reduced diesel engine emissions attributable to state air quality programs. Because black carbon is removed from the atmosphere in about a week, reducing its emissions represents an effective short-term strategy to reduce climate warming.
▪ Acidification of coastal waters. The ocean absorbs nearly one-quarter of the carbon dioxide released into the atmosphere by human activities each year. As atmospheric levels of carbon dioxide increase, so do levels in the ocean, changing the chemistry of seawater. The coastal waters at Monterey Bay have increased in acidity since 1993 at a rate greater than in the open ocean near Hawaii.

Table D.6-1. Summary of OEHHA Findings on Climate Change Indicators in California

Observed Changes in Climate
▪ Annual air temperature. Since 1895, annual average air temperatures in California have increased by about 1.5 degrees Fahrenheit (°F), with minimum temperatures increasing at a rate almost twice as fast as the increase in maximum temperatures (approximately 2°F/100 years and 1°F/100 years, respectively). In most regions of the state, warming accelerated over the past three decades.
▪ Extreme heat events. During the summer, heat extremes — measured as the intensity, frequency, duration and regional extent of heat patterns — have increased since 1950, especially at night. Nighttime heat waves have been increasing in all regions of the state. The Coastal North and Mojave regions have experienced the greatest increase in daytime heat waves.
▪ Winter chill. Warming is evident in other indicators. In the fruit growing valleys of California, winter chill time, a factor critical for fruit trees to produce flowers and fruit, has been decreasing since 1950.
▪ Freezing level elevation. At Lake Tahoe, freezing level elevation — the altitude in the atmosphere at which temperatures drop below freezing — has risen by about 150 meters (500 feet) over the past twenty years, indicating warmer conditions at higher elevations.
▪ Precipitation. Large year-to-year variability in the amount of annual precipitation and periods of consecutive dry or wet years are evident, with no apparent trend.
Responses of Natural Physical Systems to Climate Change
▪ Annual Sierra Nevada snowmelt runoff. Spring snowmelt from the Sierra Nevada to the Sacramento River has declined over the past century. Lower water volumes of snowmelt runoff indicate warmer winter temperatures. More precipitation falls as rain instead of snow and directly flows from watersheds before the spring. As a result, the portion of runoff that occurs between April and June has declined by about 9 percent. In addition to its impacts on the state's water supply, reduced spring runoff can have adverse ecological impacts.
▪ Snow-water content. While no overall trend is discernible in statewide snow-water content (the amount of water stored in snowpack), a decreasing trend has been observed in the northern Sierra Nevada, and an increasing trend in the southern Sierra Nevada. An integral part of California's water supply, snowpacks store water that is later available to runoff or percolate into soils in spring and summer.
▪ Glacier change. Glaciers in the Sierra Nevada have decreased in area over the past century, consistent with a worldwide trend in response to a warming climate. A study of seven glaciers found their areal extent in 2004 to range from 22 to 69 percent of their area in 1900. Glacier shrinkage results in earlier peak water runoff and drier summer conditions, and worldwide is an important contributor to global sea level rise.
▪ Sea level rise. Sea levels measured at stations in San Francisco and La Jolla have risen at a rate of 8 and 6 inches over the century, respectively. Sea level rise in California could lead to flooding of low-lying areas, loss of coastal wetlands such as portions of the San Francisco Bay Delta system, erosion of cliffs and beaches, saltwater contamination of drinking water, impacts on roads and bridges and harmful ecological effects along the coastline.
▪ Lake water temperature. Average water temperatures in Lake Tahoe have risen by nearly 1°F in the past 30 years. Warmer waters in Lake Tahoe may be responsible for reduced lake clarity and making conditions favorable for certain algae and introduced species. Temperature data derived from satellite observations also show a significant warming trend since 1992 for summer nighttime temperatures at six lakes in California and Nevada, including Lake Tahoe.
▪ Coastal ocean temperature. Sea surface temperatures at La Jolla have increased by about 1.8°F over the past century at about twice the global rate. Warmer ocean waters contribute to global sea level rise and extreme weather events, and can impact the marine ecosystem and its populations.
Emerging Climate Change Issues
▪ An increase in the frequency, severity and duration of harmful algal blooms in all aquatic environments, which are known to be influenced by water temperature. ▪ Reduced duration and extent of winter fog in the Central Valley, with warming winter temperatures. ▪ Increased survival and spread of forest disease-causing pathogens and insects, along with increased susceptibility of trees, which are affected by temperature, precipitation or forest fires. ▪ In addition to heat waves and wildfires, changes in the frequency and intensity of extreme events such as droughts and floods.

Source: OEHHA, 2013 (Indicators of Climate Change in California; Executive Summary, pp. i-iv).

CARB Baseline Emissions Inventory

The baseline GHG emissions for all sectors of the California economy that occurred in 1990 were 431 MMTCO2e (ARB, 2014a), updated from 427 MMTCO2e originally derived by CARB in 2007. While emissions generally grew between 1990 and 2004, statewide GHG emission rates have declined from a high of 493 MMTCO2e in 2004 to 459 MMTCO2e in 2012 (ARB, 2014b), as shown in Table D.6-2.

Table D.6-2. California GHG Emissions Inventory (MMTCO2e)

Source Category	1990	2009	2010	2011	2012
Transportation[1]	150.7	171.5	170.5	168.1	167.4
Electric Power	110.6	101.3	90.3	88.0	95.1
Commercial and Residential	44.1	42.7	43.8	44.3	42.3
Industrial[2]	103.0	85.0	88.5	88.3	89.2
Recycling and Waste	—	8.2	8.3	8.4	8.5
High GWP	—	14.0	15.9	17.4	18.4
Agriculture	23.4	35.8	35.7	36.3	37.9
Other Fuel Use and High GWP[3]	1.3	—	—	—	—
Forestry, Net Carbon Sink[3]	-6.5	—	—	—	—
Total Emissions	427	458.4	453.1	450.9	458.7

Notes: California 1990 GHG Emissions Level, as originally derived using IPCC Second Assessment Report's Global Warming Potentials.
1 - Transportation category includes off-road equipment used in construction, mining, oil drilling, and other vehicles and mobile sources.
2 - Industrial category includes refineries, oil and gas extraction, and other industries including combustion of fuels plus fugitive emissions.
3 - Slightly different categorization of economy-wide fuel use, high GWP gases, agriculture, and forestry for the 1990 level.
Source: ARB, 2007 (California 1990 GHG Emissions Level); ARB, 2014b (California GHG Inventory for 2000-2012, by Scoping Plan Category).

Statewide GHG inventoried emissions currently rely upon GWP's assigned in the IPCC Fourth Assessment Report (CARB, 2014b). However, CARB may subsequently recalculate levels necessary to reflect the GWPs in the IPCC Fifth Assessment Report of 2014 or later updates (CARB, 2014a).

D.6.1.3 Environmental Setting for Connected Actions

The connected actions fall within two California air basins: Salton Sea Air Basin and the Mojave Desert Air Basin. As discussed in Section D.6.1.2, the inventory and programs for control of GHG emissions are statewide, and the effects of climate change are analyzed on a global scale. In the context of climate change, the environmental setting for the connected actions would be the same as the discussion presented in Section D.6.1.2 for the Proposed Project.

D.6.2 Applicable Regulations, Plans, and Standards

D.6.2.1 Federal

U.S. EPA GHG Mandatory Reporting Program (40 CFR Part 98)

This rule requires mandatory reporting of GHG emissions for industrial facilities and power plants that emit more than 25,000 MTCO2e per year. The reporting program (40 CFR Part 98.300, Subpart DD) applies to electric and transmission distribution equipment that use high GWP gases, including SF_6, for insulation. Currently, there are no federal regulations limiting GHG emissions from the types of sources that would occur with the Proposed Project. The circuit breakers and gas switches owned by SCE are sources of GHG subject to reporting due to the leakage of SF_6.

U.S. EPA Federal Clean Air Act

The U.S. EPA Prevention of Significant Deterioration (PSD) and New Source Review programs under the federal Clean Air Act (CAA) and implementing regulations (40 CFR Parts 51 & 52) require review of CO_2 emission control strategies for any new or modified stationary source that emits more than 100,000 tons per year of GHG. Lower thresholds also can trigger PSD review of CO_2 control technologies for large stationary sources that would otherwise be subject to the PSD program for other criteria air pollutants. The permitting programs are enforced either by the local air quality management district or the U.S. EPA, depending on delegation of authority. Although power plants would be subject to these requirements, none of these programs would apply to the types of sources that would occur with the Proposed Project.

Council on Environmental Quality (CEQ) Draft Guidance

To facilitate compliance of federal actions with the provisions of NEPA, the CEQ has developed draft guidance on when and how to consider the effects of GHG (December 2014). Consistent with this guidance, the following analysis includes quantification of GHG emissions to demonstrate whether emissions from the proposed action would be below a level (25,000 MTCO2e annually) that warrants quantitative disclosure. The guidance also suggests addressing the implications of climate change for the environmental effects of a proposed action. The electric transmission upgrades contemplated by this proposed action would be expected to improve the transmission corridor to increase reliability of service and to maintain integrity of the transmission system. As such, the proposed action would be likely to improve the resilience of basic infrastructure during extreme weather. This would improve the ability of the infrastructure to provide electric transmission service while withstanding climate-related impacts. Reducing the potential for transmission system service interruptions should improve public health and safety by avoiding catastrophic service failures or power outages as a result of extreme weather.

D.6.2.2 State

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

This law (AB 32, Chapter 488, Statutes of 2006) requires CARB to adopt a Statewide greenhouse gas emissions limit equivalent to the Statewide GHG emissions levels in 1990, to be achieved by 2020. A longer range GHG reduction goal was set in June 2005 by California Executive Order S-3-05, which requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050.

AB 32 directs the CARB to develop regulations and a mandatory reporting system to track and monitor GHG emissions levels. In passing AB 32, the California Legislature found that:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

CARB adopted the 2020 Statewide target and mandatory reporting requirements initially in December 2007 and the AB 32 Scoping Plan in December 2008 (CARB, 2008). In 2014, CARB updated the target and adopted the First Update to the Climate Change Scoping Plan (CARB, 2014a). Enforceable cap-and-trade rules became effective in 2013 for a wide range of large industrial and fossil-fuel burning sources, including electricity generation facilities. In 2015, the program expands to cover GHG emissions from all of the California economy.

Steps taken by the CPUC to address climate change include the requirements imposed on utilities under the Electricity Greenhouse Gas Emission Standards Act (SB 1368[1]), which requires that generation and contracts be subject to a GHG Environmental Performance Standard of 1,100 pounds (or 0.5 metric tons) of CO_2 per megawatt-hour (MWh) of electricity produced. The Emissions Performance Standard applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or longer, including contracts with power plants located outside of California.[2] Implementation of the Climate Change Scoping Plan requires careful coordination on the State's energy policies, meaning that CPUC and CARB are working closely to implement the recommendations in the Scoping Plan, especially one key element of the plan: achieving a renewable energy mix of 33 percent that is reliably delivered to electricity customers.

California Renewable Energy Resources Act of 2011 (Senate Bill X1-2)

In April 2011, Senate Bill 2 of the 1st Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent Renewable Portfolio Standard (RPS) by December 31, 2020 to all retail sellers of electricity and establishes renewable energy standards for interim years of: an average of 20 percent from 2011 through 2013; a minimum of 20 percent thereafter through 2016; and, a minimum of 25 percent by December 31, 2016. This codified the requirement to achieve 33 percent RPS statewide by the end of 2020, consistent with the AB 32 Scoping Plan and the First Update to the Climate Change Scoping Plan (CARB, 2014a).

Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100 to 95158)

Mandatory reporting of GHG emissions applies to electric generating facilities with a nameplate capacity equal or greater than 1 MW capacity or on-site stationary combustion GHG emissions exceeding 10,000 metric tons per year (17 CCR 95101). This threshold has applied to power plants since 2012. Prior to that, an earlier version of this threshold required reporting for power plants emitting over 2,500 metric tons per year. As a deliverer of electricity and an Electric Power Entity under this rule, SCE must report GHG emissions for electricity delivered to end-use customers and electricity imported and exported; as an owner of fossil fuel electric power generation facilities, the GHG emissions from the power plants owned by SCE must also be reported.

Cap-and-Trade Program (17 CCR 95800 to 96022)

The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was approved by CARB in October 2011. The GHG Cap-and-Trade Program applies to covered entities within certain source categories, including electrical distribution utilities, that are subject to GHG quantification through the mandatory reporting rule. Covered entities comply with the statewide emissions cap and the Cap-and-Trade Program by submitting eligible compliance instruments equivalent to their GHG emissions by November 1 of each year. Valid compliance instruments include allowances and compliance offset credits issued by ARB. Each compliance instrument represents one metric ton of carbon dioxide equivalent. The first surrender date for the initial 30 percent of 2013 vintage emissions was November 1, 2014 [Section 95856]. SCE is subject to the Cap-and-Trade Program by being a "first deliverer of electricity," as an electricity importer and as an owner of in-state fossil fueled electric power plants.

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1 Public Utilities Code § 8340 et seq.

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

CARB SF_6 Regulations (17 CCR 95350)

In 2010, CARB adopted a regulation for reducing SF_6 emissions from electric power system gas insulated switchgear. The regulation requires owners of such switchgear to: (1) annually report their SF_6 emissions; (2) determine the emission rate relative to the SF_6 capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgears and their SF_6 capacities; (4) produce a SF_6 gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification. The circuit breakers and gas switches owned by SCE at the substations and in the project corridor are subject to this regulation.

Governor's Office of Planning and Research, Guidelines on GHG in CEQA (SB 97)

In 2009, the California Natural Resources Agency adopted amendments to the State CEQA Guidelines for reviewing the environmental impacts of greenhouse gas emissions, to implement the Legislature's directive in Public Resources Code Section 21083.05 (enacted as part of SB 97 (Chapter 185, Statutes, 2007)). The Natural Resources Agency developed a Final Statement of Reasons that guides the scope of GHG analyses for CEQA documents (CNRA, 2009). Life-cycle analysis (i.e., assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in developing a given project and infrastructure) is generally beyond the scope of a given CEQA document because of a lack of consensus guidance on life-cycle analysis methodologies (CNRA, 2009).

D.6.2.3 Local

South Coast Air Quality Management District

The local air quality management district, the South Coast Air Quality Management District (SCAQMD), implements the air permitting programs under the federal Clean Air Act, including New Source Review and the PSD program. In this way, SCAQMD requires major sources to demonstrate suitable controls for GHG or CO_2. Fossil-fueled electrical generating facilities that are interconnected to the transmission system may be subject to performance standards through these air pollution permit requirements. However, no local air pollution control rules or requirements for GHG would apply to or limit GHG emissions from the types of sources that would occur with the Proposed Project.

SCAQMD Vision for Clean Air: A Framework for Air Quality and Climate Planning. In 2012, the air district released a public review draft of a planning framework that combines air pollution control strategies with climate goals. Although actions are identified for informational purposes only, the assumptions in the strategies for future emissions controls assumed that electric grid capacity would grow while allowing a heavy reliance on renewables, and that the future transportation fleet would become more reliant on electric power (SCAQMD, 2012).

Cities and Counties

Some local municipalities and local governments have policies on energy resources or GHG control policies as part of local climate action plans. The CEQA Guidelines (Section 15183.5) include recommendations on the minimum content that agencies should provide in a local "Plan for the Reduction of Greenhouse Gas Emissions," although public agencies are not required to adopt such a plan. Of the jurisdictions in the project corridor, only the County of San Bernardino, General Plan, Conservation Element, addresses GHG with the policy being to reduce GHG within the County. Typically, local climate action plans do not address the types of sources that are dominated by construction-related activity, like that anticipated to occur with development of the Proposed Project.

D.6.3 Environmental Impacts of the Proposed Project

D.6.3.1 Approach to Impact Assessment

This impact assessment describes the Proposed Project's contribution towards global climate change through GHG emissions that occur as a result of the project. Because the direct environmental effect of GHG emissions is to influence global climate change, which in turn has numerous indirect effects on the environment and humans, the area of influence for these impacts would be global. However, those cumulative global impacts would be manifested as impacts on resources and ecosystems in California, as well as nationally. Additionally, as this analysis concerns cumulative global impacts, there is no separate cumulative impacts analysis for global climate change.

Project-related GHG emissions fall into those directly caused by project activities and those that occur as an indirect effect of the project's construction or operation. Estimates of GHG directly emitted by project-related activities rely on factors from the CARB OFFROAD2011 and EMFAC2011 models and U.S. EPA emission factors, as allowed by CEQA Guideline section 15064.4(a)(1). The data within the CARB models and U.S. EPA documentation provide appropriate factors directly applicable to the project-specific fleet of equipment most likely to be used, based on SCE's development plans. These emissions are quantified to arrive at a total GHG emissions rate for construction activities and for typical annual operation of the project. GHG emitted as indirect effects of the project are listed and characterized although they are not quantified. Examples of indirect effects include: the loss of CO_2 uptake due to land use conversion; the GHG emissions attributable to providing the necessary water supply or electricity supply; and incremental changes in GHG emissions caused by changes in how power plants are dispatched as a result of the new transmission facilities.

D.6.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures related to climate change.

D.6.3.2 CEQA Significance Criteria

Significance of impacts to climate change or impacts related to GHG emissions depends on whether the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- The SCAQMD developed draft guidance that other lead agencies can implement in determining the significance of emissions foreseeable as a result of a project subject to the CEQA process. The SCAQMD recommends a significance threshold level of 10,000 metric tons for annually recurring emissions from stationary sources (SCAQMD, 2011). Emissions from construction activities are amortized over a 30-year project life and compared to this level, although construction activities are normally dominated by mobile sources rather than stationary sources. This threshold of 10,000 metric tons CO2e per year is used here in determining whether total GHG emissions would have a significant impact on the environment.

D.6.3.3 Impacts and Mitigation Measures

Impact GHG-1: Construction and operations would generate greenhouse gas emissions

The Proposed Project would generate GHG emissions through construction activities, routine inspection, operations, and maintenance over the life of the facilities. These emissions are discussed in more detail under the separate following headings.

Impacts During Construction

Construction of the Proposed Project, including the removal of existing transmission line facilities, would generate GHG emissions from the vehicles and equipment needed to complete the upgrades. Diesel and gasoline-powered construction equipment would emit GHG at work sites and in transit between work areas, including substations undergoing modifications, along the routes of the proposed 220 kV transmission lines, along the routes of the new and modified 66 kV subtransmission lines, along the routes of new telecommunications infrastructure, and at staging yards. The anticipated fleet of equipment and vehicles and activity estimates appear in Section B.3 of this EIR.

Motor vehicles, off-road equipment, and other construction equipment would directly emit CO_2, CH_4, and N_2O due to fuel use and combustion. The emission estimates used here rely on factors from the CARB OFFROAD and EMFAC2011 databases and U.S. EPA emission factors. Motor vehicle fuel combustion emissions in terms of CO2e are approximately 95 percent CO_2, and CH_4 and N_2O emissions occur at rates of less than 1 percent of the mass of combustion CO_2 emissions. The equipment and vehicles used during construction would not emit other GHGs that are high GWP gases such as SF_6, hydrofluorocarbons, and perfluorocarbons. However, the existing and proposed circuit breakers and gas switches affected by the project include gas insulated switchgear containing SF_6, and thus, would be sources of SF_6 during project operations; construction activities would not emit these GHG constituents.

The GHG emissions during construction of various components are quantified in Table D.6-3.

Table D.6-3. Construction-Phase GHG Emissions (MTCO2e, Total)

Source	Total CO2e
Substation Upgrades	985
Segment 1 (220 kV)	3,560
Segment 2 (220 kV)	4,865
Segment 3 (220 kV)	9,616
Segment 4 (220 kV)	11,931
Segment 5 (220 kV)	3,010
Segment 6 (220 kV)	7,739
Temporary Guard Structures/Shoo-fly	4,896
Subtransmission (66 kV)	926
Telecommunications	327
Total Construction Emissions	47,856

Motor vehicle emissions of CO_2-equivalent are approximately 95% CO_2.
One metric ton (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
Source: SCE, 2013 (PEA Table 4.7-2).

Table D.6-3 shows that an estimated total of 47,856 MTCO2e would be generated over the entire duration of construction activities. These construction-related GHG emissions would not recur over the life of the project. The emissions would be spread over the development schedule that SCE expects to be 36 to 48 months, after which construction-related emissions would cease. To compare with an annual threshold, the finite GHG emissions during construction are normally averaged (or amortized) over the useful life of the project. The non-recurring construction emissions applied over the anticipated 30-year service life of the Proposed Project results in an average rate of roughly 1,600 MTCO2e per year. This level of amortized construction GHG emissions would be under the threshold level of 10,000 metric tons that applies to electric generating facilities for annual mandatory reporting of GHG (17 CCR 95101), and these emissions would also be below a threshold level of 10,000 metric tons that applies to annually recurring emissions (SCAQMD, 2011). Air Quality Mitigation Measures AQ-1b, Control Off-Road Equipment Emissions and AQ-1c,

Control Helicopter Emissions, which were intended to minimize criteria pollutant emissions, would also reduce GHG emissions during construction.

Impacts During Operations and Maintenance

Routine operations and maintenance of the Proposed Project and associated transmission lines, substation improvements, subtransmission line segments, and other project facilities would result in low levels GHG emissions from the equipment and vehicles used by SCE to mobilize crews. The proposed installation of new circuit breakers and gas switches at the substations would also introduce new gas insulated switchgear that would be a source of GHG due to the leakage of SF_6.

The quantity of potential SF_6 emissions and the mobile source emissions would be about 49 metric tons CO2e annually (SCE, 2013). The new circuit breakers would be required to comply with the CARB-adopted standards for SF_6 use in gas insulated circuit breakers, and with the CARB requirements to control SF_6 and maintain recordkeeping. The level of GHG due to SF_6 emissions would be minor. The GHG during operations and maintenance are quantified in Table D.6-4.

Table D.6-4. Operation-Related GHG Emissions (MTCO2e/year)

Source	SF6 as CO2e	Total CO2e
SF_6 Losses from Circuit Breakers	25	25
Maintenance Trucks	—	1
Helicopters	—	9
Pickup Trucks	—	2
Boom/Crane Trucks	—	12
Operations and Maintenance	25	49

Source: SCE, 2013 (PEA Table 4.7-2 and PEA Appendix E).

Table D.6-4 shows that GHG emissions during routine operations and maintenance would be well below the threshold for mandatory reporting and the SCAQMD threshold (10,000 MTCO2e/year).

Other Indirect Effects

The indirect effects of the project on GHG emissions would primarily be due to changing the deliverability of electricity generation facilities. One of SCE's objectives for the Proposed Project is to "integrate and fully deliver the output of new generation projects located in the Blythe and Desert Center areas" some of which include renewable energy resources. The Proposed Project would improve the ability to deliver electricity from the existing and likely future renewable resources in the southeastern California desert to the Los Angeles basin. Power produced from the renewable resources and made deliverable by the project would reduce, displace, or eliminate emissions that would otherwise occur from other power generation facilities including fossil fueled-fired power plants. Delivering electricity to coastal loads would enable an indirect, unquantified reduction in GHG emissions from electricity generation there, primarily within the South Coast Air Basin (SCAB).

A small amount of indirect GHG emissions would be created as a result of providing a water supply and wastewater treatment needed by the project. Additionally, land use conversion and vegetation removal that occurs with permanent ground disturbance may reduce the rate of natural carbon uptake into soils and vegetation (carbon sequestration). Soils and plants in the areas of disturbance currently provide a natural carbon sink. By permanently disturbing the land, some portion of natural carbon sequestration provided by the existing soils and vegetation would be eliminated. Vegetation management and restoration practices during project operation can partially restore the natural removal of CO_2 from the atmosphere that would otherwise be lost through construction-related ground disturbance. Of the total acres expected to be disturbed during construction, nearly 90 percent would be restored by the project (see Section B.3.3.3 and land disturbance acres in Table B-10 and Table B-11); because the Proposed Project would not establish major new ROW or result in substantial land use conversion, the loss of potential CO_2 uptake would be minimal. Although these indirect GHG emissions cannot be readily estimated, they would not

create any notable net GHG emissions increase in comparison with the direct emissions quantified for construction.

Conclusion and Overall Effects

The overall levels of GHG emissions caused during construction, operations and maintenance would be adverse, but they would not occur at levels requiring reporting or at levels exceeding any established threshold. No mitigation is required.

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions

The Climate Change Scoping Plan, initially approved by CARB in 2008 with an update in 2014 (CARB, 2014a), provides an outline of actions to reduce California's GHG emissions. The scoping plan requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs.

One of SCE's objectives for the Proposed Project is to "integrate and fully deliver the output of new generation projects located in the Blythe and Desert Center areas" some of which include renewable energy resources. Additionally, SCE expects the Proposed Project to "facilitate progress toward achieving California's RPS goals." (See Section A.2 of this EIR for a detailed discussion of the project objectives.)

Mandatory RPS Procurement Reports filed with the CPUC show that SCE served 19.9 percent of its 2012 retail electricity sales from renewable power (CPUC, 2014), and SCE reports achieving 20.7 percent during the 2011 to 2013 RPS compliance period (SCE, 2014a). In SCE's *2013 Preliminary Annual RPS Report*, filed August 1, 2014, the Proposed Project is attributed with interconnecting and delivering 4,000 MW of expected renewable generating capacity (SCE, 2014b) and continuing to grow SCE's portion of electricity sales from renewable power. The existing West of Devers Interim Project, that went into service in October 2013, but that would be removed with the Proposed Project, allowed SCE to integrate 1,050 MW of renewable generation (SCE, 2014b).

The Proposed Project would improve the infrastructure used in transmission and distribution of California's energy supply. Accordingly, the Proposed Project would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. Achieving compliance with the 33 percent RPS is one key element of the Climate Change Scoping Plan. Similarly, the Proposed Project would not affect or conflict with any local goals or programs to achieve GHG reduction targets.

SCE must comply with CARB SF_6 regulations to inventory, report, and minimize SF_6 leaks through the use of new technology. By complying with these requirements, the Proposed Project would not conflict with any applicable GHG management plan, policy, or regulation. No mitigation is required.

D.6.3.4 Impacts of Connected Actions

Impact GHG-1: Construction and operations would generate greenhouse gas emissions

Each of the connected actions is a solar generation project, and their construction would involve similar equipment and activities. As discussed in the climate change analyses in the environmental review documents for the Desert Harvest, Palen, and Blythe Mesa projects, direct GHG emissions would be generated from off-road equipment, on-road construction vehicle trips, and routine maintenance of the facilities (BLM, 2012). Equivalent annual average GHG emissions for construction and operation of these known projects were calculated to be the following:

- Desert Harvest Project – 979.43 MTCO2e for construction and 522.62 MTCO2e for operation (BLM, 2012);
- Palen Solar Power Project – ~~16,485~~101,000 MTCO2e for construction and ~~77,720~~14,818 MTCO2e for operation (CEC, 201~~03~~);[3]
- Blythe Mesa Solar Project – 183 MTCO2e for construction and 271 MTCO2e for operation (POWER Engineers, 2014).

The range of estimated GHG emissions for these known connected projects reflects the varying technologies used for each project. For example, the Palen Solar Power Project would use auxiliary ~~and~~ nighttime ~~-~~boilers that would generate greater operation emissions than solar PV projects. It is assumed that given similar construction equipment and methods, the connected solar PV projects would generate construction and operation GHG emissions to a similar degree as the known solar PV projects.

The total annual GHG emissions for the Desert Harvest Project and the Blythe Mesa Solar Project would be 1,502 MTCO2e and 454 MTCO2e, respectively, which is well below the federal threshold of 25,000 MTCO2e per year and the SCAQMD's adopted interim GHG significance threshold of 10,000 MTCO2e per year for industrial projects. While the GHG emissions from the Palen project would exceed the federal mandatory reporting threshold and the SCAQMD's significance threshold, the CEC determined in its ~~Final Staff Assessment~~decision document that this renewable energy generation facility ~~would lead to a net reduction in GHG emissions across the State's electricity system and would not require mitigation~~ is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 and an estimated GHG emission rate of 0.015 MTCO2e/MWh, well below the Greenhouse Gas Emission Performance Standard (CEC, 201~~03~~).

The connected actions are solar generation projects. Emissions from their construction and operation would result in GHG emissions considerably less than the existing statewide average GHG emission per unit of electricity generation (i.e., renewable and non-renewable generation) and would enable GHG emission reductions in the electricity generation sector. No mitigation is required.

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions

Although the construction and operation of the projects identified as connected actions would generate GHG emissions, the amount of emissions would be considerably less than the GHG emissions from existing fossil fuel-fired power plants providing generation to California. To the extent that the output from the renewable energy projects replaces fossil-fuel generation, those projects would contribute to the continued reduction of GHG emissions in the interconnected California and the western United States electricity systems. The solar power projects that are connected actions listed in Table B-22 would have similar contributions to reducing GHG emissions within the State's electricity generation sector. The renewable generators would provide energy to California's retail sellers of electricity and partially enable the load serving entities (each utility that procures the power) to achieve compliance with the RPS program. As such, the connected actions would be notable contributors to the successful implementation of AB 32, the AB 32 Scoping Plan, SB X1-2, and Executive Orders for GHG reductions. Similarly, the connected actions would not conflict with any other applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No mitigation is required.

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[3] The Palen Solar Power Project calculations are for a proposed solar trough 500 MW facility. ~~Given the CEC's decision to approve a single power tower, this analysis assumes that only a 250 MW power tower would be a connected action to the WOD Upgrade Project. Actual GHG emissions from the Palen Project are expected to be less than the numbers presented above.~~

D.6.3.5 CEQA Significance Determination for Proposed Project and Connected Actions

Impact GHG-1: Construction and operations would generate greenhouse gas emissions (Class III)

For the Proposed Project, construction-phase GHG emissions would be adverse, but they would not occur at significant levels. Impact GHG-1 would be less than significant, requiring no mitigation (Class III).

While construction and operation of the connected solar projects would generate GHG emissions, the solar generation projects listed in Table B-22 would enable GHG emission reductions within the electricity sector. Impacts would be less than significant, requiring no mitigation (Class III).

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions (Class III)

The Proposed Project would improve the electric transmission infrastructure in a manner that would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. The Proposed Project would not conflict with any applicable GHG management plan, policy, or regulation. Therefore, Impact GHG-2 would be less than significant, requiring no mitigation (Class III).

The connected solar projects would contribute to the continued reduction of GHG emissions in the interconnected California and the western United States electricity systems. The total GHG emissions generated during their construction and operation would be considerably less than the GHG emissions from existing fossil fuel-fired power plants providing generation to the State. As these solar generation projects would lead to a net reduction in GHG emissions across the State's electricity system, they would contribute to meeting the State's GHG reduction goals under AB 32. Impacts would be less than significant, requiring no mitigation (Class III).

D.6.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Project Alternative is evaluated in Section D.6.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

The environmental setting for climate change is described in Section D.6.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.6.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Two impacts related to climate change were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.6.3.3, except where otherwise noted.

Impact GHG-1: Construction and operations would generate greenhouse gas emissions

The minor adjustment to the location of these towers would have little effect on the amount of project-generated greenhouse gas emissions, as compared to the Proposed Project. Although this alternative could extend the construction timeframe by as much as one year, the type and intensity of construction activity would be substantially the same as in the Proposed Project. Even with an extended construction timeframe, the amortized GHG emissions from construction of this alternative would be nearly the same as in the Proposed Project and under the threshold level for mandatory reporting and the SCAQMD threshold (10,000 MTCO2e/year).

The overall levels of GHG emissions caused during all timeframes for this alternative, including construction, operations and maintenance, and restoration would be adverse, but they would not occur at levels requiring reporting or at levels exceeding any established threshold. No mitigation is required.

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions

The minor changes to the location of specific towers would not result in a conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions. Like the Proposed Project, the Tower Relocation Alternative would improve the infrastructure used in transmission and distribution of California's energy supply. Accordingly, this alternative would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. Achieving compliance with the 33 percent RPS is one key element of the CARB 2014 Climate Change Scoping Plan. Similarly, this alternative would not affect or conflict with any local goals or programs to achieve GHG reduction targets.

SCE must comply with CARB SF_6 regulations to inventory, report, and minimize SF_6 leaks through the use of new technology. By complying with these requirements, this alternative would not conflict with any applicable GHG management plan, policy, or regulation. No mitigation is required.

CEQA Significance Determination for Tower Relocation Alternative

The CEQA significance determination for each climate change impact in this alternative is presented below.

Impact GHG-1: Construction and operations would generate greenhouse gas emissions (Class III)

Construction-phase GHG emissions would be adverse, but they would not occur at significant levels. Impact GHG-1 would be less than significant, requiring no mitigation (Class III).

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions (Class III)

The Tower Relocation Alternative would improve the electric transmission infrastructure in a manner that would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. This alternative would not conflict with any applicable GHG management plan, policy, or regulation. Therefore, Impact GHG-2 would be less than significant, requiring no mitigation (Class III).

D.6.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Two impacts were identified under the Proposed Project for climate change. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.6.3.3, except where otherwise noted.

Impact GHG-1: Construction and operations would generate greenhouse gas emissions

The underground segment constructed in this alternative would increase slightly the amount of greenhouse gas emissions compared to the Proposed Project, due to the increased duration and intensity of construction. Overall, the amortized GHG emissions from construction of this alternative would be nearly the same as in the Proposed Project and would be under the threshold level for mandatory reporting and the SCAQMD threshold (10,000 MTCO2e/year). The overall levels of GHG emissions caused during all timeframes for this alternative, including construction, operations, and maintenance would be adverse, but they would not occur at levels requiring reporting or at levels exceeding any established threshold. No mitigation is required.

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions

This short underground segment would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions. No mitigation is required.

CEQA Significance Determination for Iowa Street 66 kV Underground Alternative

The CEQA significance determination for each climate change impact in this alternative is presented below.

Impact GHG-1: Construction and operations would generate greenhouse gas emissions (Class III)

Construction-phase GHG emissions would be adverse, but they would not occur at significant levels. Impact GHG-1 would be less than significant, requiring no mitigation (Class III).

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions (Class III)

The Iowa Street 66 kV Underground Alternative, as a component of whole the Proposed Project, would improve the electric transmission infrastructure in a manner that would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. This alternative would not conflict with any applicable GHG management plan, policy, or regulation. Therefore, Impact GHG-2 would be less than significant, requiring no mitigation (Class III).

D.6.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Two impacts related to climate change were identified for the Proposed Project. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.6.3.3

Impact GHG-1: Construction and operations would generate greenhouse gas emissions

As with the Proposed Project, the Phased Build Alternative would generate GHG emissions through construction activities, routine inspection, operations, and maintenance over the life of the facilities. Construction of this alternative, including the removal of existing transmission line facilities, would generate GHG emissions from the vehicles and equipment needed to complete the upgrades. By retaining the existing 220 kV double-circuit towers, there would be less use of equipment and vehicles required for removing structures and erecting new structures. The alternative would generate less emissions than the Proposed Project. The amortized GHG emissions from construction of this alternative would be lower than those of the Proposed Project and under the threshold level for mandatory reporting and the SCAQMD threshold (10,000 MTCO2e/year). Routine operations and maintenance of the Phased Build Alternative would be similar to the Proposed Project, although electric generation facilities would need to produce more energy to overcome higher electrical losses that occur with the alternative conductors. The actual level of losses, which depends on line loading, and potential sources of energy that would need to change dispatch to overcome the losses have not been quantified.

The indirect effects of this alternative on GHG emissions would primarily be due to changing the deliverability of electricity generation facilities, including renewable energy resources. Power produced from the renewable resources and made deliverable by the project would reduce, displace, or eliminate emissions that would otherwise occur from other power generation facilities including fossil fueled-fired power plants. The overall levels of GHG emissions caused during all timeframes for this alternative, including construction, operations, and maintenance, would be adverse, but they would not occur at levels requiring reporting or at levels exceeding any established threshold. No mitigation is required.

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions

Similar to the Proposed Project, the Phased Build Alternative would improve the infrastructure used in transmission and distribution of California's energy supply. Accordingly, this alternative would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. Achieving compliance with the 33 percent RPS is one key element of the CARB 2014 Climate Change Scoping Plan. Similarly, this alternative would not affect or conflict with any local goals or programs to achieve GHG reduction targets.

SCE must comply with CARB SF_6 regulations to inventory, report, and minimize SF_6 leaks through the use of new technology. By complying with these requirements, this alternative would not conflict with any applicable GHG management plan, policy, or regulation. No mitigation is required.

CEQA Significance Determination for Phased Build Alternative

The CEQA significance determination for each climate change impact in this alternative is presented below.

Impact GHG-1: Construction and operations would generate greenhouse gas emissions (Class III)

Construction-phase GHG emissions would be adverse, but they would not occur at significant levels. Impact GHG-1 would be less than significant, requiring no mitigation (Class III).

Impact GHG-2: Project implementation could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions (Class III)

The Phased Build Alternative would improve the electric transmission infrastructure in a manner that would improve California's ability to supply renewable energy to customers and achieve statewide renewable energy goals. This alternative would not conflict with any applicable GHG management plan, policy, or regulation. Therefore, Impact GHG-2 would be less than significant, requiring no mitigation (Class III).

D.6.5 Environmental Impacts of No Project Alternative

D.6.5.1 No Project Alternative Option 1

The No Project Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Project Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Project alignment.

No Project Alternative Transmission Lines and Beaumont Substation. The No Project Alternative between Devers and El Casco essentially would parallel the Proposed Project corridor between the two substations, but be approximately 3 miles to the south, south of Interstate 10. Construction of the No Project Alternative would involve impacts on GHG similar to those that would occur in the Proposed Project or alternatives. The overall levels of GHG emissions caused during construction, operations and maintenance would be adverse, but they would not occur at levels requiring reporting or at levels exceeding any established threshold.

D.6.5.2 No Project Alternative Option 2

No Project Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The use of construction vehicles and equipment (including helicopters) would result in GHG emissions similar to those that would occur in the Proposed Project. However, GHG emissions would be slightly increased compared to those in the Proposed Project due to the need for extensive helicopter use for construction in rugged terrain, including within the Cleveland National Forest. The overall levels of greenhouse gas emissions caused during construction would be similar to those described in the Proposed Project and in No Project Alternative Option 1.

D.6.6 Mitigation Monitoring, Compliance, and Reporting

No mitigation measures are required for Climate Change and GHG impacts.

D.6.7 References

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