

CHAPTER 3.0 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT**3.1 Effects Found Not Significant as Part of the EIR Process**

This section of the EIR provides discussions of those effects that through the course of analyzing the environmental effects associated with the proposed project were identified as not significant or less than significant. The following environmental areas were found to be not significant during this analysis: Greenhouse Gas Emissions and Hydrology and Water Quality.

3.1.1 Greenhouse Gas Emissions

This section includes a discussion of applicable plans, policies and regulations, existing conditions, identification and justification of significance thresholds, and a determination of whether greenhouse gas (GHG) emissions impacts are considered significant from a California Environmental Quality Act (CEQA) perspective or other applicable standard.

3.1.1.1 Existing Conditions**Geographic Setting**

The proposed project would apply to properties located in the unincorporated portions of the County of San Diego (County) over which the County has land use jurisdiction. There are two defined project areas: (1) for small wind turbines and Meteorological Testing (MET) facilities, the project area includes all properties in the unincorporated County over which the County has jurisdiction, as depicted in Figure 1-3; (2) for large wind turbines, the project area is defined by wind resource areas within the unincorporated County, as depicted in Figure 1-4. Reliable wind resources areas are mainly concentrated in the communities of Borrego, North Mountain, Ramona, Central Mountain, Alpine, Julian, Cuyamaca, Descanso, Pine Valley, Mountain Empire, Boulevard, Lake Moreno/Campo, and Jacumba.

Global Climate Change

The increasing emissions of GHGs—primarily associated with the burning of fossil fuels (during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.), deforestation, agricultural activity, and solid waste decomposition—have led to a trend of anthropogenic warming of the Earth’s average temperature, which is causing changes in the Earth’s climate. This increasing temperature phenomenon is known as “global warming” and the climatic effect is known as “climate change” or “global climate change.”

Recent scientific research indicates very high confidence (i.e., at least 90%) that global warming will lead to adverse climate change effects around the globe. Anthropogenic effects, processes,

objects, or materials are those that are derived from human activities, as opposed to those occurring in natural environments without human influence.

Gases that trap heat in the atmosphere are often called GHGs. The greenhouse effect traps heat in the troposphere through a three-fold process: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This “trapping” of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Principal GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and water vapor (H₂O). Some GHGs, such as CO₂, CH₄, and N₂O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO₂, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃), which are associated with certain industrial products and processes (California Climate Action Team 2006).

The greenhouse effect is a natural process that contributes to regulating the Earth’s temperature. Without it, the temperature of the Earth would be about 0°F (-18°C) instead of its present 57°F (14°C). Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect (National Climatic Data Center 2008).

The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions plus the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential. The global warming potential varies between GHGs; for example, the global warming potential of CH₄ is 21, and the global warming potential of N₂O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO₂. Thus, GHG gas emissions are typically measured in terms of pounds or tons of “CO₂ equivalent” (CO₂E).¹

General Environmental Effects of Global Climate Change

According to the California Air Resources Board (CARB), some of the potential impacts in California of global warming may include loss in snow pack, sea-level rise, more extreme heat days per year, more high O₃ days, larger forest fires, and more drought years (CARB 2006). Several recent studies have attempted to explore the possible negative consequences that climate

¹ Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO₂. Thus, GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalent” (CO₂E).

change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system and ecosystems and to California would include, but would not be limited to, the following:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007).
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets (IPCC 2007).
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007).
- Decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70% to as much as 90% over the next 100 years (California Climate Action Team 2006).
- The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers.
- Increase in the number of days conducive to O₃ formation by 25% to 85% (depending on the future temperature scenario) in high O₃ areas of Los Angeles and the San Joaquin Valley by the end of the 21st century (California Climate Action Team 2006).
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level (California Climate Action Team 2006).
- *Public Health.* Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation.
- *Agriculture.* Increased GHG emissions are expected to cause widespread changes to the agriculture industry, reducing the quantity and quality of agricultural products statewide. In

addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

- *Forests and Landscapes.* Global warming is expected to intensify the risk of wildfire and resultant altering of the distribution and character of natural vegetation.

County of San Diego Draft Climate Change Action Plan

The County is preparing a Climate Change Action Plan, which is scheduled to be adopted in 2012. The Climate Change Action Plan will include an updated baseline inventory of GHG emissions from all sources, detailed GHG emissions reduction targets and deadlines, and comprehensive and enforceable GHG emissions reduction measures that will achieve a 16% reduction in emissions from County operations from 2006 by 2020 and a 9% reduction in community emissions between 2006 and 2020. Once prepared, implementation of the plan will be monitored and progress reported on a regular basis (County of San Diego 2011).

County Green Building Incentive Program

The County has a Green Building Incentive Program that is a voluntary program to promote energy- and resource-efficient building design. Incentives, in the form of fast-track plan checking and fee reductions, are offered to developers who use recycled materials in construction, install irrigation systems using greywater, build projects that exceed the energy efficiency standards of California's Title 24, or install photovoltaic electricity generation systems.

Contributions to Greenhouse Gas Emissions

According to the 2004 GHG inventory data compiled by CARB for the California 1990 GHG emissions inventory, California emitted emissions of 484 million metric tons of CO₂E (MMTCO₂E), including emissions resulting from out-of-state electrical generation (CARB 2007a). The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2004 are presented in Table 3.1.1-1.

3.1.1.2 Regulatory Setting

International Regulatory Setting

Montreal Protocol

In response to concerns about GHG emissions and contributions, the Coordinating Committee on the Ozone Layer was established by the United Nations Environment Programme (UNEP) in 1977, and UNEP's Governing Council adopted the World Plan of Action on the Ozone Layer. Continuing efforts led to the signing in 1985 of the Vienna Convention on the Protection of the Ozone Layer. This led to the creation of the Montreal Protocol on Substances That Deplete the Ozone Layer (Montreal Protocol), an international treaty designed to protect the stratospheric ozone layer by phasing out production of ozone-depleting substances (ODSs). The treaty was adopted on September 16, 1987, and went into effect on January 1, 1989.

United Nations Framework Convention on Climate Change (UNFCCC)

In response to growing concern about the problem of potential global climate change, the World Meteorological Organization and the UNEP established the Intergovernmental Panel on Climate Change (IPCC) in 1988. Similar to the events that led to the Montreal Protocol, to address growing concern about global climate change, many nations joined an international treaty known as the UNFCCC. The UNFCCC recognizes that the global climate is a shared resource that can be affected by industrial and other emissions of GHGs, and it sets an overall framework for intergovernmental efforts to tackle the challenges posed by global climate change. As with the Montreal Protocol, this treaty has been ratified by 191 countries, including the United States. Under this treaty, governments:

- Gather and share information on GHG emissions, national policies, and best practices
- Launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries
- Cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol

Knowing that the UNFCCC did not contain the legally binding measures that would be required to seriously tackle global climate change, at the first Conference of the Parties held in Berlin in 1995, the Parties agreed to launch a new round of discussions to determine more detailed and stronger commitments for industrialized countries (the Berlin Mandate). After two and a half years of negotiations, the Parties adopted the Kyoto Protocol in December 1997.

As of May 13, 2008, 182 Parties have become Parties to the Kyoto Protocol. Of these, 35 countries and the Eastern European Countries are required to reduce GHG emissions below levels specified for each of them in the treaty. The individual targets for Annex I Parties are listed in the Kyoto Protocol's Annex B and add up to a total cut in GHG emissions of at least 5% from 1990 levels in the commitment period 2008–2012.

Although a signer to the Kyoto Protocol, to date the United States has decided not to ratify the Kyoto Protocol because it does not mandate emissions reductions from all countries (non-Annex I Parties are not subject to the same emission reduction goals), some of which are major trading partners. As a result, committing to the Kyoto Protocol could damage the U.S. economy. Recent analysis from the U.S. Climate Change Science Program suggests that GHG emissions from developing countries are expected to exceed emissions from developed countries within the next 25 years (EPA 2007a).

Federal Climate Change Policy

Clean Air Act (CAA)

The Montreal Protocol discussed above is the basis on which Title VI of the CAA was established (EPA 2007b). The intent of Title VI of the CAA (Stratospheric Ozone Protection) is to protect stratospheric ozone by phasing out the manufacture of ODSs, and by restricting their use and distribution. Under Title VI, ODSs are divided into two classes: Class I substances, which have an “ozone-depletion potential” of 0.2 or greater, and Class II substances, which have an ozone-depletion potential less than 0.2.

The United States has not ratified the Kyoto Protocol; rather, it developed the Climate Change Action Plan (CCAP). The CCAP consists of initiatives that involve all economic sectors and aim at reducing all significant GHGs. The CCAP, backed by federal funding, cultivates cooperative partnerships between the government and the private sector to establish flexible and cost-effective ways to reduce GHG emissions within each sector. The CCAP encourages investments in new technologies, but it also relies on previous actions and programs focused on saving energy and reducing emissions. Below is a brief overview of the focus of some CCAP actions (U.S. Global Change Research Information Office 1993).

- ***Energy Demand Actions:*** In 1990, energy consumption in the commercial, residential, and industrial sectors accounted for 30%, 19%, and 33% of all U.S. CO₂ emissions, respectively. Partnerships have been formed to accelerate the use of existing energy-saving technologies and encourage the development of more advanced technologies. Commercial actions are focused on installing efficient heating and cooling systems in commercial buildings and upgrading to energy-efficient lighting systems (the Green Lights program). The State Buildings Energy Incentive Fund provides funding to states for the development

of public building energy management programs. Residential actions are aimed at developing new residential energy standards and building codes and providing money-saving, energy-efficient options to homeowners. Industrial actions involve the development of partnerships with industries to put energy efficiency and waste reduction technologies into action using incentives and recognition programs.

- **Energy Supply Actions:** In addition to reducing energy demand, the CCAP includes actions that aim at reducing emissions from energy supply. These actions focus on increasing the use of natural gas, which emits less CO₂ than coal or oil, and investing in renewable energy sources, such as solar and wind power, which result in zero net CO₂ emissions. Energy supply strategies also focus on reducing the amount of energy lost during distribution from power plants to consumers.

Transportation Actions: Transportation and combustion of fossil fuels is the fastest growing source of U.S. CO₂ emissions. Actions to reduce transportation-related emissions are focused on investing in cleaner fuels and more efficient technologies and on reducing vehicle miles traveled. The U.S. Environmental Protection Agency (EPA) and Department of Transportation have drafted guidance documents for reducing vehicle miles traveled, which are to be used for developing local clean air programs.

- **Forestry Actions:** Trees absorb and store atmospheric CO₂. The CO₂ stored in trees is released into the atmosphere during forest harvesting and burning. The CCAP provides assistance to small private land owners for developing better management of forestry operations and encourages more tree planting programs. In addition, actions are also focused on establishing more recycling programs and researching new recycling technologies.

The GHG emissions intensity is the ratio of GHG emissions to economic output. In 2002, the GHG emissions intensity was 183 metric tons per million dollars of gross domestic product (EPA 2007c). In February 2002, the United States set a goal to reduce this GHG emissions intensity by 18% by 2012. The approach to achieving this reduction is to improve energy efficiency, focus on technological improvements, and implement voluntary programs that encourage industries to use cleaner fuels. A number of voluntary programs have been instituted to reduce GHG emissions from the United States. These include (EPA 2007c) the following:

- **Climate VISION Partnership:** In 2003, this program established a partnership between 12 major industries with the Department of Energy, the EPA, the Department of Transportation, and the U.S. Department of Agriculture. The involved industries include electric utilities; petroleum refiners and natural gas producers; automobile, iron and steel, chemical and magnesium manufacturers; forest and paper producers; railroads; and cement, mining, aluminum, and semiconductor industries. These industries are working with the

four agencies to reduce their GHG emissions over the next decade by developing cost-effective solutions, measuring and reporting emissions, developing strategies for the adoption of advanced technologies, and recognizing voluntary mitigation actions.

- ***Cleaner Energy-Environment State Partnership:*** This program establishes a partnership between federal and state agencies to support states in implementing strategies and policies that promote renewable energy, energy efficiency, and other cost-effective clean energy sources. States receive technical assistance from the EPA.
- ***Climate Leaders:*** Climate Leaders is an EPA voluntary program started in 2002 that establishes partnerships with individual companies. Together they establish individual corporate goals for GHG emissions reduction and monitor their emissions to measure progress. More than 100 corporations that represent 8% of the U.S. GHG emissions are involved in Climate Leaders. More than half have reached their emissions goals so far. With many new developments in regulatory and voluntary programs to address GHG emissions, the EPA announced in September 2010 that it will phase down services it offers under the Climate Leaders program. The transition will enable the EPA to better assist companies in learning from the emissions data collected under the GHG Reporting Program. The EPA's other voluntary programs will remain in place and continue to help partner organizations reduce emissions and increase sustainability.
- ***Energy Star:*** Energy Star was established in 1992 by the EPA and became a joint program with the U.S. Department of Energy in 1996. Energy Star is a program that labels energy-efficient products with the Energy Star label. Energy Star enables consumers to choose energy-efficient and cost-saving products. More than 1,400 manufacturers use Energy Star labels on their energy-efficient products.
- ***Green Power Partnership:*** This program establishes partnerships between the EPA and companies and organizations that have bought or are considering buying green power, which is power generated from renewable energy sources. The EPA offers recognition and promotion to organizations that replace electricity consumption with green power. There are no federal laws or regulations governing the emission of GHGs. House Resolution (HR) 6, the 2007 Energy Bill, mandates improved national standards for vehicle fuel economy (Corporate Average Fuel Economy (CAFE) standards). These standards require a fleet-wide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase-in requirements to achieve this goal. Analysis by CARB suggests that achieving this goal will require an annual improvement in fleetwide average fuel economy of approximately 3.4% between now and 2020. Although the explicit purpose of requiring improved national standards for fuel economy was not to address climate change, these requirements would improve the fuel economy of the nation's vehicle fleet, and therefore

incrementally lower the amount of fuel use and GHG emissions associated with vehicle trips generated by the proposed project.

Massachusetts v. U.S. Environmental Protection Agency

In *Massachusetts v. EPA* (2007), the Supreme Court held that the EPA has the statutory authority under Section 202 of the CAA to regulate GHGs from new motor vehicles because GHGs meet the CAA definition of an air pollutant. The court did not hold that the EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare.

The Supreme Court directed the administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the administrator is required to follow the language of Section 202(a) of the CAA. On December 7, 2009, the administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- The administrator found that elevated concentrations of GHGs—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.
- The administrator further found the combined emissions of GHGs—CO₂, CH₄, N₂O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the cause or contribute finding.

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

State Climate Change Policy

There are numerous state plans, policies, regulations, and laws related to GHG and global climate change. Following is a brief discussion of some of these plans, policies, and regulations.

Assembly Bill 1493

In 2002, Governor Gray Davis signed Assembly Bill (AB) 1493, which required CARB to develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles

determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state.”

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations, Title 24, Part 6 adding GHG emission standards to California’s existing motor vehicle emission standards and required automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. In order to enact state standards for vehicle emissions, a waiver is required from the EPA.

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against CARB to prevent enforcement of the GHG emission standards. In December 2007, after various delays and the settlement of related federal court cases, the judge in the case ruled in California’s favor. Subsequently, however, the EPA denied California’s waiver request. California filed a petition with the Ninth Circuit Court of Appeals challenging the EPA’s denial on January 2, 2008. California’s waiver request has not been granted as of this writing, but the Obama administration has directed the EPA to reexamine its decision.

Senate Bill 1078

Approved by Governor Davis in September 2002, Senate Bill (SB) 1078 established the Renewal Portfolio Standard program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see SB 107 and Executive Order S-14-08).

Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California’s GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80% below 1990 levels by 2050. The secretary of the California Environmental Protection Agency (Cal/EPA) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Representatives from several state agencies comprise the Climate Action Team. The Climate Action Team is responsible for implementing global warming emissions reduction programs. The Climate Action Team fulfilled its report requirements through the March 2006 Climate Action Team

Report to Governor Schwarzenegger and the legislature (California Climate Action Team 2006). A second biennial report was released in April 2009.

The 2009 Draft Climate Action Team Report (California Climate Action Team 2009) expands on the policy oriented in the 2006 assessment. The 2009 report provides new information and scientific findings regarding the development of new climate and sea-level projections using new information and tools that have recently become available, evaluating climate change within the context of broader soil changes, such as land use changes and demographics. The 2009 report also identifies the need for additional research in several different aspects that affect climate change in order to support effective climate change strategies. The aspects of climate change that were discussed that need future research include vehicle and fuel technologies, land use and smart growth, electricity and natural gas, energy efficiency, renewable energy and reduced carbon energy sources, low-GHG technologies for other sectors, carbon sequestration, terrestrial sequestration, geologic sequestration, economic impacts and considerations, social science, and environmental justice.

Senate Bill 107

Approved by Governor Schwarzenegger on September 26, 2006, SB 107 requires investor-owned utilities such as Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric to generate 20% of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017 (see SB 1078).

Assembly Bill 32

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law by Governor Schwarzenegger on September 27, 2006. AB 32's GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. The 1990 levels are approximately 30% below "business as usual." Business-as-usual conditions represent what would occur in the absence of any GHG reduction actions. CARB estimates the statewide 2020 business-as-usual GHG emissions will be 596 MMTCO₂E.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. The original three adopted early action regulations meeting the narrow legal definition of “discrete early action GHG reduction measures” include the following:

1. A low-carbon fuel standard to reduce the “carbon intensity” of California fuels
2. Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of “do-it-yourself” automotive refrigerants
3. Increased CH₄ capture from landfills to require broader use of state-of-the-art CH₄ capture technologies.

The additional six early action regulations, which were also considered “discrete early action GHG reduction measures,” include the following:

1. Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology
2. Reduction of auxiliary engine emissions of docked ships by requiring port electrification
3. Reduction of PFCs from the semiconductor industry
4. Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products)
5. Require that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency
6. Restriction on the use of SF₆ from nonelectricity sectors if viable alternatives are available.

According to CARB, the electric power generation industry is the primary user of SF₆, a synthetic gas used as an insulating medium (CARB 2010a). The use of SF₆, a highly potent GHG with a global warming potential 23,900 times greater than CO₂, is problematic because fugitive emissions can escape older gas-insulated substations and switchgear through insulation leaks. The most promising and cost-effective strategies to reduce SF₆ emissions are through the installation of new equipment, technologies, and practices including leak detection, repair, use of recycling equipment, and employer/employee training (CARB 2010a). On February 25, 2010, CARB adopted a regulation that requires gas-insulated substations and switchgear owners to reduce their SF₆ emission rate by 1% per year over a 10-year period, from 2011 to 2020. Beginning January 1, 2020, the maximum annual emission rate would be at 1%. The measure would also require gas-insulated substations and switchgear owners to (1) annually report their SF₆ emissions, (2) annually report their emission rate, (3) provide a complete inventory of all gas

insulated switchgear and their SF₆ capacities, (4) produce a SF₆ gas container inventory, and (5) keep all information current for CARB enforcement staff inspection and verification.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO₂E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94% of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO₂ in excess of specified thresholds. The proposed project does not fall under these new reporting rules.

On December 11, 2008, CARB approved the required Climate Change Scoping Plan (Scoping Plan) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations will occur over the next 2 years, becoming effective by January 1, 2012. Emission reductions from the recommended measures in the Scoping Plan total 169 MMTCO₂E, which will allow California to attain the 2020 emissions limit of 427 MMTCO₂E, a 30% reduction from CARB's 2020 estimated statewide business-as-usual GHG emissions of 596 MMTCO₂E. The key elements of the Scoping Plan include the following (CARB 2010b):

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
- Achieving a statewide renewable energy mix of 33%
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
- Creating targeted fees, including a public goods charge on water use, fees on high global

warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

California's retail electric load is currently composed of approximately 12% renewable energy resources. Renewable energy includes, but is not limited to, wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas (CARB 2008). Based on Governor Schwarzenegger's call for a statewide 33% Renewables Portfolio Standard, the Scoping Plan anticipates that California will have 33% of its electricity provided by renewable resources by 2020.

Senate Bill 1368

In September 2006, Governor Schwarzenegger signed SB 1368, which requires the California Energy Commission to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local, publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission. This effort will help to protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants, by requiring imported electricity to meet GHG performance standards in California and requiring that the standards be developed and adopted in a public process.

Senate Bill 97

In August 2007, the legislature enacted SB 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. OPR was to develop proposed guidelines by July 1, 2009, and the Natural Resources Agency was directed to adopt guidelines by January 1, 2010.

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less-than-significant level.

On April 13, 2009, OPR submitted to the Natural Resources Agency its proposed amendments to the CEQA Guidelines relating to GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting the proposed amendments, starting the public comment period.

The Natural Resources Agency adopted CEQA Guidelines amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law completed its review and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to “make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project” (Section 15064.4(a))
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (Section 15064.4(a))
- Requiring a lead agency to consider the following factors when assessing the significant impacts from GHG emissions on the environment:
 - The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting
 - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project
 - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (Section 15064.4(b))
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold; instead, they allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by

other agencies or experts.² The Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.³

Executive Order S-13-08

Governor Schwarzenegger issued Executive Order S-13-08 on November 14, 2008. The Executive Order is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. It directs state agencies to take specified actions to assess and plan for such impacts. It directs the Resource Agency, in cooperation with the California Department of Water Resources, California Energy Commission, California's coastal management agencies, and the Ocean Protection Council, to request the National Academy of Sciences to prepare a Sea Level Rise Assessment Report by December 1, 2010. The Ocean Protection Council, California Department of Water Resources, and California Energy Commission, in cooperation with other state agencies, are required to conduct a public workshop to gather information relevant to the Sea Level Rise Assessment Report. The Business, Transportation, and Housing Agency was ordered to assess the vulnerability of the state's transportation systems to sea-level rise within 90 days of the order. The OPR and the Resources Agency are required to provide land use planning guidance related to sea-level rise and other climate change impacts. The order also requires the other state agencies to develop adaptation strategies by June 9, 2009, to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. A discussion draft adaptation strategies report was released in August 2009, and the final adaptation strategies report was issued in December 2009. To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: public health, ocean and coastal resources, water supply and flood protection, agriculture, forestry, biodiversity and habitat, and transportation and energy infrastructure. The report then recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

² "The CEQA Guidelines do not establish thresholds of significance for other potential environmental impacts, and SB97 did not authorize the development of a statement threshold as part of this CEQA Guidelines update. Rather, the proposed amendments recognize a lead agency's existing authority to develop, adopt and apply their own thresholds of significance or those developed by other agencies or experts" (California Natural Resources Agency 2009, p. 84).

³ "A project's compliance with regulations or requirements implementing AB32 or other laws and policies is not irrelevant. Section 15064.4(b)(3) would allow a lead agency to consider compliance with requirements and regulations in the determination of significance of a project's greenhouse gas emissions" (California Natural Resources Agency 2009, p. 100).

Executive Order S-14-08

On November 17, 2008, Governor Schwarzenegger issued Executive Order S-14-08. This Executive Order focuses on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. The governor's order requires that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the order directs state agencies to take appropriate actions to facilitate reaching this target. The Resources Agency, through collaboration with the California Energy Commission and California Department of Fish and Game, is directed to lead this effort. Pursuant to a Memorandum of Understanding between the California Energy Commission and California Department of Fish and Game creating the Renewable Energy Action Team, these agencies will create a "one-stop" process for permitting renewable energy power plants.

Executive Order S-21-09

On September 15, 2009, Governor Schwarzenegger issued Executive Order S-21-09. This Executive Order directed CARB to adopt a regulation consistent with the goal of Executive Order S-14-08 by July 31, 2010. CARB is further directed to work with the California Public Utilities Commission and California Energy Commission to ensure that the regulation builds upon the Renewable Portfolio Standard (RPS) program and is applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB is to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and that can be developed most quickly in support of reliable, efficient, and cost-effective electricity system operations.

3.1.1.3 Analysis of Project Effects and Determination of Significance

The proposed project consists of amendments to the Zoning Ordinance related to wind turbines and temporary MET facilities. Under the proposed project, large turbines will continue to require approval of a Major Use Permit while a small wind turbine or MET facility meeting the height designator of the zone in which it is located would be allowed without discretionary review. The impact analysis below has been separated into "Small Turbine(s)/MET Facilities" and "Large Turbine(s)" to reflect the distinction in the level of review required for the establishment of each use (discretionary vs. non-discretionary).

3.1.1.3.1 Generation of Greenhouse Gas Emissions

Guidelines for Determination of Significance

For the purpose of this Environmental Impact Report (EIR), the County's *Interim Approach to Addressing Climate Change in CEQA Documents* (County of San Diego 2010) guidelines for determining significance apply to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Analysis

As described in Section 3.1.1.1, GHGs include CO₂, CH₄, halocarbons, and N₂O, among others. Human-induced GHG emissions are a result of energy production and consumption and personal vehicle use, among other sources. A regional GHG inventory prepared for the San Diego region identified electricity and natural gas combustion as the second (24%) and third (9%) largest regional contributors, respectively, to regional GHG emissions (refer to Table 3.1.1-2). According to the *San Diego County Greenhouse Gas Inventory* (Anders et al. 2008), the region must reduce its GHG emissions by 33% from “business-as-usual” emissions to achieve 1990 emissions levels by the year 2020. “Business-as-usual” refers to the 2020 emissions that would have occurred in the absence of the mandated reductions.

Climate changes resulting from GHG emissions could produce an array of adverse environmental impacts, including water supply shortages, severe drought, increased flooding, sea level rise, air pollution from increased formation of ground-level ozone and particulate matter, ecosystem changes, increased wildfire risk, agricultural impacts, and ocean and terrestrial species impacts, among other adverse effects. Additionally, climate change could further the production of human-induced GHG emissions by increasing the demand for electricity due to high summer temperatures and the need for cooling, which would be especially prevalent in the inland areas. Hotter summers and heat waves could also spur sharp increases in peak demand for electricity, thereby leading to blackouts and power outages (County of San Diego 2011).

Although the proposed project facilitates the development of renewable energy sources in place of a typical fossil fuel-based electrical generation resulting in long-term air quality benefits, future wind turbine and MET facility development could have the potential to result in emissions related to vehicle trips. Therefore, future wind turbines and MET facilities may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. It should be noted that an individual project's GHG emissions will generally not result in direct impacts under CEQA, as the climate change issue is global in nature; however, an individual project could be

found to contribute to a potential cumulatively considerable impact. CEQA Guidelines Section 15130(f) states that an EIR shall analyze GHG emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable.

Small Wind Turbine(s) and MET Facilities

The proposed project would facilitate the development of renewable wind energy within the County pursuant to existing and future statewide and federal goals. Therefore, the proposed project would contribute to a decrease in the overall emissions attributable to electrical generation in California, as well as provide for a reliable local renewable energy supply and reduce the potential for power outages in inland areas.

Vehicular traffic is, however, one source of GHG emissions that could result from small wind turbines and MET facilities. The exact location and number of future small wind turbines and MET facilities that could result under the proposed project is currently unknown. However, as discussed in Section 2.3, Air Quality, future small wind turbines and MET facilities would generate minimal traffic. During construction, project traffic would be limited to the delivery of component parts and equipment (if the individual turbine is too large for the property owner to manage), and if a concrete foundation must be poured or if assistance is needed to erect the turbine tower, one or two additional vehicles/equipment. Some smaller turbines such as roof-mounted turbines would not require construction vehicles at the project site since they can typically be installed by the property owner. Only turbines requiring substantial earth-moving activities or those requiring the delivery of larger scale turbine tower or hub equipment would require heavy, drivable equipment. Due to the brief construction time period associated with the installation of small residential scale wind turbines and MET facilities (usually lasting one day), and because traffic generated by the construction of these facilities would be relatively minor, GHG impacts as a result of construction emissions would be **less than significant**.

Large Wind Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large turbines. These updates are necessary in order to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects will be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, projects would be evaluated under CEQA and would be required to implement measures to minimize GHG impacts, as necessary. CEQA requires proposed projects to provide detailed information on the potentially significant environmental effects they are

likely to have, list ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the project.

Pursuant to the County's *Interim Approach to Addressing Climate Change in CEQA Documents*, (County of San Diego 2010) a 900-metric-ton screening criteria is used for determining which projects require further analysis and mitigation with regard to climate change. The 900-metric-ton screening threshold is based on a threshold included in the California Air Pollution Control Officers Association (CAPCOA) white paper that covers methods for addressing GHG emissions under CEQA. County staff would evaluate all future large wind turbine projects using this screening threshold to determine if the preparation of Climate Change Analysis (CCA) is warranted. If required, a CCA would include a detailed accounting of project-specific construction and operational GHG emissions totals. The GHG inventory must include justification and references to the extent practical to document the assumptions that are made about the emissions calculations. The CCA would assess site-specific conditions and would require projects to apply the maximum feasible mitigation, as necessary.

The actual locations and actions of future projects are unknown at this time; therefore, the actual GHG emissions for future large wind turbines cannot be quantified. However, in order to determine if a future large wind turbine project would have the potential to exceed screening-level criteria, a review of two sample projects was conducted. The first sample project would construct and operate 33 large wind turbines with a 2.3–3.0-megawatt (MW) capacity range and would reach a total capacity of approximately 80 MW. The second sample project would construct and operate 128 large wind turbines with a 1.5–3.0 MW generating capacity range for a total capacity of approximately 200 MW.

Construction

Both sample projects are expected to exceed the 900-metric-ton screening threshold during the construction phase. GHG emissions would result from the use of construction equipment, off-site trucks hauling construction material, worker trips, and the on-site concrete batch plant's generator. Emissions of CO₂ associated with off-road construction equipment were estimated through the use of emission factors from the *URBEMIS2007 Software User's Guide* (Jones & Stokes 2007). Emissions associated with on-road vehicles were estimated through the use of emission factors from EMFAC2007 motor vehicle emission inventory model (CARB 2007b). Lastly, concrete batch plant generator emissions utilized a CO₂ factor from CARB's OFFROAD2007 off-road equipment inventory model (CARB 2007c).

Operation

Operation and maintenance of both sample future large wind turbine projects would not result in significant GHG emissions. There could be some minor GHG emissions from maintenance vehicle exhaust; however, maintenance activities would be limited in extent and duration and would have no appreciable impact. In addition, future large wind turbine projects would generate electricity without GHG emissions and would serve as a renewable energy source, thereby decreasing overall emissions attributable to electrical generation in California.

The overall net benefit of GHG reduction during the operation of wind turbines would outweigh the temporary construction emissions and minor operational emissions. For example, the American Wind Energy Association estimates that 1 megawatt-hour (MWh) of wind energy produced reduces CO₂ emissions by roughly 1,200 pounds. The average large turbine installed in 2008 was 1.67 MW in size. A single 1.67 MW turbine would produce over 5,000 MWh of electricity per year and reduce CO₂ emissions by over 3,000 tons (AWEA 2010). Therefore, the proposed project would help to decrease GHGs long term and **would not result in significant impacts** on the environment from the generation of GHG emissions.

3.1.1.3.2 Conformance to Applicable Plan, Policy, or Regulation

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Interim Approach to Addressing Climate Change in CEQA Documents* (County of San Diego 2010) guidelines for determining significance apply to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Analysis

As described in Section 3.1.1.2, AB 32 requires CARB to adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. The act required CARB to establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008. In November 2007, CARB released *California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit* (CARB 2007a). In this document, CARB recommends 427 MMTCO₂E as the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit. This limit was approved in December 2007.

Neither the State of California nor the San Diego Air Pollution Control District has adopted emission-based thresholds for GHG emissions under CEQA. OPR's Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008, p. 4). Furthermore, the advisory document indicates in the third bullet item on page 6 that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Therefore, CEQA gives a lead agency the discretion to determine the significance of environmental impacts identified in its CEQA documents. And as discussed in Section 3.1.1.3.2, the lead agency or County utilizes a 900-metric-ton screening criteria pursuant to the *Interim Approach to Addressing Climate Change in CEQA Documents* (County of San Diego 2010).

Small Wind Turbine(s) and MET Facilities

The proposed project would help facilitate the development of renewable wind energy within the County pursuant to existing and future statewide and federal goals. Therefore, the proposed project would assist the County to meet the goals of AB 32. As described in Section 3.1.1.3.1, small wind turbines and MET facilities would decrease in the overall emissions attributable to electrical generation in California. Vehicular traffic from construction and operation of small wind turbines and MET facilities is one source of GHG emissions. However, traffic generated by the construction of these facilities would be relatively minor (usually lasting one day and may not require construction vehicles). Future maintenance activities would be infrequent and would occur for short periods of time, usually occurring every 1 to 3 years, or as needs arise, and may not require vehicle trips. Therefore, small wind turbines and MET facilities developed under the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, such as AB 32, and impacts would be **less than significant**.

Large Wind Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large turbines. These updates are necessary in order to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. Over its lifespan, the proposed project would assist in the

attainment of the state's goals by facilitating the development of renewable sources of energy in place of typical fossil fuel-based electrical generation. The project would be consistent with state initiatives aimed at reducing GHG emissions. Similar to small wind turbines and MET facilities, vehicular traffic is one source of GHG emissions that could result from large wind turbines. However, while all sources of GHG emissions contribute to some extent to global climate change, the amount of GHG emissions generated by the proposed project will not impede or conflict with the state's ability to achieve the goals of AB 32. Additionally, all future large turbine projects will be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process all future projects would be evaluated under CEQA and would be required to implement measures to minimize GHG impacts, as necessary.

The project is proposed in an effort to maximize the production of renewable wind turbines to assist the County in furthering federal goals under Section 211 of the Energy Policy Act of 2005 and implementing the County of San Diego General Plan's Energy Element. The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHGs. In fact, the proposed project would assist the County to meet AB 32's statewide goals of reducing GHGs through facilitating the use of renewable energy in the County.

Additionally, the proposed project would not conflict with CARB's Scoping Plan to reduce California's GHG emissions or SB 375, which addresses GHG emissions associated with the transportation sector. The project would actually contribute to a decrease in the overall emissions attributable to electrical generation in California, thereby assisting in the reduction of GHGs. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and impacts would be **less than significant**.

3.1.1.4 Cumulative Impact Analysis

3.1.1.4.1 Generation of Greenhouse Gas Emissions

GHG emissions are said to result in an increase in the earth's average surface temperature, commonly referred to as global climate change. Global climate change, by definition, is cumulative as it is the result of combined worldwide contributions of GHG to the atmosphere over many years. Therefore, impacts associated with the proposed project discussed above in Section 3.1.1.3.1 also serve as the proposed project's cumulative impact analysis.

Additionally, as stated in Section 3.1.1.2, the County is preparing a Climate Change Action Plan that will include a baseline inventory of GHG emissions for all sources and more detailed GHG emissions reductions targets and deadlines. The Climate Change Action Plan would achieve a 17% reduction in GHG emissions from 2006 by 2020 and 9% reduction in community emissions

from 2006 by 2020. Implementation of this Climate Change Action Plan will contribute to meeting the AB 32 goals, in addition to state regulatory requirements described above. As a result of the proposed project and County's Climate Change Action Plan, impacts related to the generation of GHG emissions on a cumulative level would be **less than significant**.

3.1.1.4.2 Conformance to Applicable Plan, Policy, or Regulation

Global climate change, by definition, is cumulative as it is the result of combined worldwide contributions of GHG to the atmosphere over many years. Therefore, impacts associated with the proposed project discussed in Section 3.1.1.3.2 also serve as the proposed project's cumulative impact analysis.

Additionally, as stated in Section 3.1.1.2, the County is preparing a Climate Change Action Plan that will include a baseline inventory of GHG emissions for all sources and more detailed GHG emissions reductions targets and deadlines. The Climate Change Action Plan would achieve a 17% reduction in GHG emissions from 2006 by 2020 and 9% reduction in community emissions from 2006 by 2020. Implementation of this Climate Change Action Plan will contribute to meeting the AB 32 goals, in addition to state regulatory requirements described above. As a result of the proposed project and County's Climate Change Action Plan, impacts related to the generation of GHG emissions on a cumulative level would be **less than significant**.

3.1.1.5 Significance of Impacts Prior to Mitigation

The project will not result in any significant GHG impacts.

3.1.1.6 Mitigation Measures

The project will not result in any significant GHG impacts, and no mitigation measures are required.

3.1.1.7 Conclusion

Implementation of the proposed project would not result in significant impacts associated with GHG emissions and global climate change. By facilitating the development of a local renewable energy supply, the proposed project could help to reduce impacts related to global climate change in two ways: (1) decrease GHG emissions, and (2) reduce the potential for energy shortages and outages in the inland areas. Therefore, the proposed project would not result in any significant impacts related to GHGs.

**Table 3.1.1-1
Greenhouse Gas Sources in California**

| Source Category | Annual GHG Emissions (MMTCO ₂ e) ^a | Percent of Total | Annual GHG Emissions (MMTCO ₂ e) ^b | Percent of Total |
|----------------------------|--|------------------|--|------------------|
| Agriculture | 27.9 | 5.8 | 27.9 | 6.6 |
| Commercial Uses | 12.8 | 2.6 | 12.8 | 3.0 |
| Electricity Generation | 119.8 | 24.7 | 58.5 | 13.8 |
| Forestry (excluding sinks) | 0.2 | 0.0 | 0.2 | 0.0 |
| Industrial Uses | 96.2 | 19.9 | 96.2 | 22.7 |
| Residential Uses | 29.1 | 6.0 | 29.1 | 6.9 |
| Transportation | 182.4 | 37.7 | 182.4 | 43.1 |
| Other ^c | 16.0 | 3.3 | 16.0 | 3.8 |
| Totals | 484.4 | 100.0 | 423.1 | 100.0 |

Source: BonTerra 2009.

^a Includes emissions associated with imported electricity, which account for 61.3 MMTCO₂e annually.

^b Excludes emissions associated with imported electricity.

^c Unspecified combustion and use of ozone-depleting substances.

**Table 3.1.1-2
San Diego County Greenhouse Gas Emissions – 2006**

| Sector | GHG Emissions (MMTCO ₂ e) | Percent of Total Emissions |
|---------------------------------|--------------------------------------|----------------------------|
| On-Road Transportation | 16.0 | 46.9 |
| Electricity | 8.3 | 24.3 |
| Natural Gas Consumption | 2.9 | 8.5 |
| Civil Aviation | 2.0 | 5.9 |
| Industrial Processes & Products | 1.6 | 4.7 |
| Other Fuels/Other | 1.3 | 3.8 |
| Off-Road Equipment & Vehicles | 1.3 | 3.8 |
| Waste | 0.4 | 1.2 |
| Agriculture/Wildfires/Land Use | 0.6 | 1.8 |
| Rail Transportation | 0.3 | 0.9 |
| Water-Borne Navigation | 0.1 | 0.3 |
| Sequestration from Land-cover | (0.7) | -2.1 |
| Total | 34 | 100 |

Source: BonTerra 2009.

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