ATTACHMENT T

APPENDIX E

California Environmental Quality Act

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Functional Equivalent Document

Renewable Electricity Standard

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California Air Resources Board

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June 2010

Functional Equivalent Document

Renewable Electricity Standard

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TABLE OF CONTENTS

Chapter **Page**

TABLE OF CONTENTS

Chapter **Page**

TABLE OF CONTENTS

Chapter **Page**

LIST OF FIGURES

Chapter **Page**

LIST OF TABLES

LIST OF TABLES

Chapter **Page**

LIST OF TABLES

Chapter **Page**

ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AICUZ	Department of Defense Air Installations Compatible Use Zones
ALUC	Airport Land Use Commission
amsl	above mean sea level
APE	area of potential effect
APEFZ	Alquist-Priolo Earthquake Fault Zone
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BLM	U.S. Bureau of Land Management
BMPs	best management practices
bmsl	below mean sea level
BOR	U.S. Bureau of Reclamation
CAA	Clean Air Act
CAL FIRE	California, Department of Forestry and Fire Protection
Cal ISO	California Independent System Operator
CAL Recycle	State of California, Department of Resources Recycling and Recovery
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CBC	California Building Code
CCCT	closed circuit cooling tower
CCNM	California Coastal National Monument
CCP	comprehensive conservation plans
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDPA	California Desert Protection Act
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFCP	California Farmland Conservancy Program
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	combined heat and power
CI	Circulation and Infrastructure
CNEL	Community Noise Equivalent Level
CNRA	California Natural Resources Agency
CO	Conservation
CPUC	California Public Utilities Commission
CREZ	competitive renewable energy zones
CRHR	California Register of Historical Resources
CT	simple cycle cooling tower
CUPA	Certified Unified Program Agency
CVMSHCP/NCCP	Coachella Valley Multi-Species Habitat Conservation Plan/Natural Communities Conservation Plan
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibel
dBA	A-weighted sound levels
Delta	Sacramento-San Joaquin Delta
DFG	Department of Fish and Game
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
E3	Energy and Environmental Economics, Incorporated
EDCs	endocrine disrupting compounds
EIRs	Environmental Impact Reports
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency

EPCRA	Environmental Planning and Community Right-to-Know Act
FAA	Federal Aviation Administration
FED	functionally equivalent document
FEMA	Federal Emergency Management Agency
FHA	Federal Highway Administration
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FRA	Federal Rail Administration
FTA	Federal Transit Administration
g	gravity
GC	Government Code
GHG	greenhouse gases
H	Housing
HCP	habitat conservation plan
HLRs	Hydrologic landscape regions
IEPR	Integrated Energy Policy Report
in/sec	inches per second
IOUs	investor owned utilities
ISEGS	Ivanpagh Solar Electric Generating Systems
kW	kilowatts
lb/MWh	pound per megawatt hour
L_{dn}	Day-Night Noise Level
LEA	local enforcement agencies
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Noise Level
L_{min}	Minimum Noise Level
LOS	level of service
LU	Land Use
mg/L	milligrams per liter
Moyer program	ARB's Carl Moyer Program
MPOs	metropolitan planning organizations

MPS	modular pumped storage
MRDS	USGS Mineral Resource Data System
MRZ	Mineral Resource Zones
MUC	Multiple-Use Class
MW	megawatts
MWh	megawatt-hour
mya	million years ago
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NCAs	National Conservation Areas
NCCP	natural communities conservation plan
NCP	National Contingency Plan
NCPA	Northern California Power Agency
NECO	Northern and Eastern Colorado Desert
NEPA	National Environmental Policy Act [
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NPDES	National Pollution Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRHP	National Register of Historic Places
NRPA	Archaeological Resources Protection Act of 1979
O_2	oxygen
O&M	operation and maintenance
OAQPS	Office of Air Quality Planning and Standards
OHMVR	off-highway motor vehicle recreation
OS	Open Space
OTC	once through cooling
OWTS	onsite wastewater treatment systems
oxide	aluminum
PA	Programmatic Agreements

PCBs	polychlorinated biphenyls
PEIS	Programmatic Environmental Impact Statement
PM	Particulate matter
POUs	publicly owned utilities
ppmv	parts per million by volume
PPV	peak particle velocity
PRC	Public Resources Code
PV	Photovoltaic
RCRA	Resource Conservation and Recovery Act
REC	renewable energy credit
RES	Renewable Electricity Standard
RETI	Renewable Energy Transmission Initiative
RMPs	Resource Management Plans
RMS	root-mean-square
ROWD	Report of Waste Discharge
ROWs	right-of-ways
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SBE	State Board of Education
SCAQMD	South Coast Air Quality Management District
Scoping Plan	AB 32 Climate Change Scoping Plan
SCPPA	Southern California Public Power Authority
SCS	Sustainable Communities Strategy”
SDAPCD	San Diego Air Pollution Control District
SDWA	Safe Drinking Water Act
SERCs/TERCs	state/tribe emergency response commissions
SIC	Standard Industrial Classification
SIP	State Implementation Policy
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	California Surface Mining and Reclamation Act
SMUD	Sacramento Municipal Utility District
solar DG	distributed solar generation

SVRA	State Vehicular Recreation Area
SWAMP	Surface Water Ambient Monitoring Program
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	Total dissolved solids
TMDL	Total Maximum Daily Load
tpy	tons per year
TRI	Toxics Release Inventory
TSCA	Toxic Substances Control Act
U.S. EPA	U.S. Environmental Protection Agency
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UXO	unexploded ordnance
V/C	volume-to-capacity ratio
VC	Vehicle Code
VdB	vibration decibels
VOCs	volatile organic compounds
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WAPA	the Western Area Power Administration
WDRs	waste discharge requirements
WECC	Western Electricity Coordinating Council
WECO	Western Colorado
WEMO	West Mojave Habitat Conservation Plan
WSA	water supply assessment

I. INTRODUCTION AND BACKGROUND

A. INTRODUCTION

The California Environmental Quality Act (CEQA) and California Air Resources Board (ARB) policy require an analysis to determine any potentially significant adverse environmental impacts of ARB's regulations. The Renewable Electricity Standard (RES) is proposed to be adopted as a regulation. If adopted, it would advance the standard for the proportion of electricity generation by eligible renewable sources from 20 percent, as established in 2002 by the California Renewables Portfolio Standard (RPS), to 33 percent. The proposed 33 percent RES would modify other provisions contained in the existing RPS, as described in Chapter II.

RES is identified as one of the measures proposed in the Climate Change Scoping Plan (Scoping Plan), which was developed for the purpose of reducing emissions of greenhouse gases (GHG) in California, as directed by the California Global Warming Solutions Act of 2006 (AB 32, Chapter 488, Statutes of 2006). One of the key elements of the Scoping Plan recommendations is "Achieving a statewide renewables energy mix of 33 percent." As described in the Scoping Plan recommendations, "increasing the 20 percent RPS to 33 percent is designed to accelerate the transformation of the electricity sector, including investment in the transmission infrastructure and system changes to allow integration of large quantities of intermittent wind and solar generation," and other eligible renewable sources.

B. THE CALIFORNIA ENVIRONMENTAL QUALITY ACT AND FUNCTIONAL EQUIVALENCY

In PRC Section 21080(a) CEQA states, "Except as otherwise provided in this division, this division shall apply to discretionary projects proposed to be carried out or approved by public agencies, including but not limited to the enactment and amendment of zoning ordinances, the issuance of zoning variances, the issuance of conditional use permits, and the approval of tentative subdivision maps, unless the project is exempt from this division. " ARB determined that adoption and implementation of the proposed 33 percent RES constitutes a "project" as defined by Public Resources Code Section 21000 et seq. The CEQA Guidelines, Section 15378, define a project as:

(a) "Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following:

(1) An activity directly undertaken by any public agency including but not limited to public works construction and related activities clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of

viewsheds of State Routes 14 and 58. For wind farms that would be sited along ridgelines and open plains, the wind turbines would be more prominent and would further increase the contrast between the natural and artificial visual environment, potentially damaging the visual character of the area. Views of construction and operation activities may be visible to some viewer groups in the area, including motorists along State Routes 14 and 58, residents in nearby communities, and recreationists using the Pacific Crest Trail. Residents and recreationists would be expected to experience a longer duration of views as opposed to motorists who would be passing through the Tehachapi area at higher speeds. However, the visual impact of wind turbines and associated facilities depends on several variables, including viewing distance, angle of view, and structure placement in the landscape. Because the Tehachapi Wind Resource Area already includes wind farms, it is possible that wind energy development in this area would not substantially exacerbate scenic impacts of State Routes 14 and 58. However, because specific locations are unknown, it is possible that wind turbines could be constructed in more pristine areas, resulting in significant scenic impacts.

Out of State – Low and High Load Conditions

Under the 20 percent low and high load conditions, implementation of the same degree of wind energy resource projects in Montana, the Pacific Northwest, Utah, Southern Idaho, and Wyoming may result in significant adverse effects on scenic vistas, scenic resources, and visual character in these areas. Some of these projects may occur on federal lands, which would subject such projects to environmental review of aesthetic impacts under NEPA. In some cases, renewable energy resource projects may also occur in states where such projects would be subject to the state's environmental review process. In any case, however, implementation of renewable energy resource projects in out-of-state locations may have significant effects primarily because such projects are typically located in areas of undeveloped, uninhabited land and would result in substantial alteration of the visual landscape. Implementation of Mitigation A-1 through A-10 would reduce scenic impacts, but it is uncertain whether mitigation would be sufficient to reduce the impact to a less than significant level.

Scenic impacts of wind energy development under the 20 percent RPS low and high load conditions would be potentially significant. This impact would be expected to occur even without adoption of the RES.

33 Percent Renewable Electricity Standard

Distributed Statewide – Low and High Load Conditions

No additional distributed wind energy is anticipated under the 33 percent RES over and above the 20 percent RPS, so no additional impact would occur from approval of the 33 percent RES.

Tehachapi – Low and High Load Conditions

Under the 33 percent RES, wind energy and transmission development in the Tehachapi area would be the same under both low and high load conditions, and the same as the high load condition under the 20 percent RPS. As such, scenic impacts of

some locations, the visible changes to these scenic resources may be potentially significant.

Out of State – Low and High Load Conditions

Out-of-state scenic impacts under the 33 percent RES, high and low load, for solar thermal would be identical to the 20 percent RPS, high and low load, described above.

Scenic impacts of solar thermal and transmission line development under the 33 percent RES low and high load conditions would be significant.

Solar Photovoltaic

20 Percent Renewable Portfolio Standard

Distributed Statewide – Low and High Load Conditions

Development of solar photovoltaic energy would occur in various locations throughout the State under the 20 percent RPS low and high conditions. Construction and operation of solar photovoltaic panels, access roads, and associated facilities would introduce new elements that have the potential to substantially degrade the existing quality of sites, particularly those in undeveloped areas. While specific locations of distributed solar photovoltaic energy development are unknown, such development may occur in areas with national, state, or county designated scenic vistas, other scenic resources, and State scenic highways. Solar photovoltaic development has the potential to substantially damage scenic resources.

Tehachapi – Low and High Load Conditions

Under the 20 percent RPS solar photovoltaic energy and transmission development is expected to occur in the Tehachapi area under both low and high load conditions. High load conditions under the RPS would require approximately three times the solar photovoltaic generation from this area. Although there are no officially designated State scenic highways in the Tehachapi area, portions of State Routes 14 and 58, which intersect near the Tehachapi Mountains, are eligible for designation. Depending on the locations of solar photovoltaic development, they may extend into the viewsheds of State Routes 14 and 58. Construction of solar photovoltaic facilities would create temporary, adverse changes in the visual character of the Tehachapi area and permanent facilities have the potential to create substantial changes in the visual quality and character of the flat desert areas south of the Tehachapi Mountains. Facility elements may be visible from public vantages, particularly State Routes 14, 58, and 138, which pass directly through the area where solar photovoltaic development would occur. Residents in the community of Rosamond may be affected by construction and operation activities near State Route 14. Some recreationists in the Sierra Pelona Mountains to the south of the Tehachapi area may be affected by the change in visual character, but this would largely depend on where the recreationist is located. Because specific locations of solar photovoltaic projects are unknown, it is possible that facilities could be constructed in pristine areas, resulting in significant scenic impacts.

Out of State – Low and High Load Conditions

Under the 20 percent low and high load conditions, implementation of the same degree of solar photovoltaic energy projects in Arizona/Southern Nevada—though modest—may result in significant adverse effects on scenic resources in these areas. Projects may occur on federal lands, in which case they would be subject to environmental review of aesthetic impacts under NEPA, and projects may also be subject to state environmental policies, rules, and regulations. In any case, however, implementation of solar photovoltaic projects in out-of-state locations may have significant effects primarily because such projects are typically located in areas of undeveloped, uninhabited land. Scenic impacts of solar photovoltaic development under the 20 percent RPS low and high load conditions would be significant. This impact would be expected to occur even without adoption of the RES.

33 Percent Renewable Electricity Standard

Distributed Statewide – Low and High Load Conditions

No additional distributed solar photovoltaic energy is anticipated under the 33 percent RES over and above the 20 percent RPS, so no additional impact would occur from approval of the 33 percent RES.

Tehachapi – Low and High Load Conditions

The amount of solar photovoltaic and transmission development in the Tehachapi area under 33 percent RES low and high load conditions is expected to be the same as under the 20 percent RPS high load scenario, discussed above.

Mountain Pass – Low and High Load Conditions

As with solar thermal, the level of solar photovoltaic energy and transmission development in the Mountain Pass area is anticipated to remain the same under both the 33 percent low and high scenarios. Construction activities and introduction of new solar photovoltaic energy facilities into the desert landscape may impair scenic vistas, resources, and aesthetic character. These visual elements would be visible primarily to motorists traveling on Interstate 15, which passes through the Mountain Pass project area and is a popular route for travelers to Las Vegas, and recreationists at the Primm Valley Golf Course. While not a State-designated scenic highway, San Bernardino County has designated portions of Interstate 15 that pass through the area as having scenic character of visual importance. Motorists are considered to have a low sensitivity to change of existing visual character because of their distance, angle, and duration of views in this area. Construction and operation activities may also be visible to residents in the nearby community of Primm, Nevada, although views may be minimal because of the community's distance from the area.

Although some transmission lines already pass through the Ivanpah Valley, the solar thermal energy facilities would introduce new artificial elements that would contrast photovoltaic with the existing natural environment as well as strong spatial and scale dominance. The proposed project would result in a significant visual change in the site and its surroundings.

Riverside East – Low and High Load Conditions

As with solar thermal, a similar amount of solar photovoltaic energy and transmission development is expected to occur in the Riverside East area under the 33 percent RES low and high load conditions. Construction activities would create a temporary, adverse change in the visual character of the area due to the introduction of heavy equipment in addition to site clearing and grading activities. Operation would introduce new solar photovoltaic energy facilities into the largely undeveloped desert landscape. These visual elements would be visible primarily to motorists traveling on Interstate 10, which passes through the project area, but which is not listed as a State scenic highway. The proposed project would introduce prominent solar photovoltaic structures into the foreground of motorists and into the background of residents in the nearby City of Blythe. Some recreationists at Joshua Tree National Forest to the west of the Riverside East area may also be affected by the substantial visual change in the desert landscape. Construction and operation of solar photovoltaic development would substantially degrade the Riverside East area and its existing natural surroundings by changing the environment to an industrial landscape. This would be a significant impact.

Fairmont –Low and High Load Conditions

Under the 33 percent RES low and high load conditions, development of solar photovoltaic energy and transmission is expected to occur in the Fairmont area. Construction activities would create a temporary, adverse change in the visual character of the Fairmont area due to the introduction of heavy equipment, access roads in addition to site clearing and grading. Construction activities may also alter naturally vegetated areas. Operation of the proposed project would introduce new solar photovoltaic facilities into areas that are largely undeveloped or used for agricultural purposes. These visual elements may be visible to motorists traveling on State Route 138, and to a much lesser extent, on State Route 14 although views from State Route 14 may be indiscernible. The proposed project would introduce prominent structures with an industrial character into the foreground of motorists and into the background of some residents in the nearby cities of Palmdale and Lancaster and the community of Little Rock, As a result, construction and operation of solar photovoltaic facilities would substantially degrade the Fairmont area and its existing natural surroundings.

Out of State – Low and High Load Conditions

Out-of-state scenic impacts under the 33 percent RES, high and low load, for solar photovoltaic would be identical to the 20 percent RPS, high and low load, described above.

Scenic impacts of solar photovoltaic and transmission line development under the 33 percent RES low and high load conditions would be significant**.**

III.B. AIR QUALITY

This section includes a general description of existing conditions (e.g., types of sensitive land uses and sources located out-of-state), a summary of applicable regulations, and evaluation of potential short-term and long-term air quality impacts associated with the out-of-state implementation of the proposed renewable energy development scenarios. Mitigation is recommended, as necessary, to reduce significant impacts.

As described in the Project Description, the RES Calculator was used to identify out-of-state electricity generation by resource type for: 2008 conditions; 20 percent RPS in 2020 under low and high load conditions; and 33 percent RES in 2020 under low and high load conditions. Tables II-1 and II-2 illustrate comparative data for 2008 (existing conditions for purposes of analysis), RPS and RES under low and high load conditions, respectively. Tables II-3 through II-6 illustrate electricity generation by resource type, by CREZ, for each scenario. Figure II-1 illustrates CREZ locations.

It is important to note that while the RES Calculator output represents the best available data to represent the results of the proposed regulation and a reasonable set of assumptions upon which to assess impacts, the manner in which renewable energy projects would actually come on line cannot be known with certainty. The number of potential future combinations of renewable resource mix, location, and timing, and degree that would satisfy RES requirements is nearly infinite and would depend upon myriad economic, political, and environmental factors. The plausible compliance scenarios identified by ARB and modeled using the RES Calculator represent a reasonable characterization of the way in which the future could unfold; analysis of additional potential future scenarios would not meaningfully add to the body of evidence necessary for ARB to make an informed decision with regard to the proposed regulation.

In addition, as with all of the environmental effects and issue areas, the precise nature and magnitude of impacts would depend on the types of projects authorized, their locations, their aerial extent, and a variety of site-specific factors that are not known at this time but that would be addressed by environmental reviews at the project-specific level.

1. ENVIRONMENTAL SETTING

Note to Reader: The evaluation of the in-State air quality impacts resulting from the renewable energy projects necessary for compliance with the RES is provided in Chapter IX of the RES Staff Report. Based on that analysis, implementation of new in-State renewable energy projects would not generate levels of emissions that conflict with applicable air quality plans, violate or contribute substantially to an existing or projected violation, result in a cumulatively considerable net increase in non-attainment areas, or expose sensitive receptors to substantial pollutant concentrations or odors with mitigation (e.g., compliance with applicable regulations). Thus, in-State air quality impacts from operation of renewable energy facilities is expected to result in beneficial effects. Generally, it is important to note that renewable electricity generation produces

fewer pollutants per unit of electricity output than the fossil-fuel generation it would displace and less total electricity would be generated in-State in comparison to existing conditions.

Construction of any new facilities would be subject to site-specific mitigation imposed by local and potentially federal lead agencies and local air districts. Mitigation for construction related air quality impacts is expected to be the same or similar to those detailed below in Mitigation B-1. Please refer to the RES Staff report for additional information.

The following presents an evaluation of the potential out-of-state air quality impacts that could occur with implementation of the 33 percent RES.

(a). EXISTING OUT-OF-STATE SOURCES AND SENSITIVE LAND USES

Out-of-state renewable energy resources are projected by the RES Calculator to be developed in the following general areas: Alberta, Arizona/Southern Nevada, British Columbia, Montana, New Mexico, Northwest, Reno/Dixie Valley, Utah/Southern Idaho, and Wyoming.

The existing air quality environment in the proposed out-of-state areas is influenced by stationary, area, and mobile sources. According to EPA, there are areas within those mentioned above where out-of-state renewable energy resources are projected by the RES Calculator to be developed that are currently designated as nonattainment areas for ozone (8-hour), PM_{10}, $PM_{2.5}$, CO, SO_2, and lead) (EPA 2010). Sensitive land uses in such areas may include residences (e.g., single- and multi-family), schools, hospitals, nursing homes, and other uses that may include segments of the population that are sensitive to poor air quality.

2. REGULATORY SETTING

The following provides a brief description of the Federal and State regulations that could be applicable to an out-of-state renewable energy project. Local regulations may also apply; however, because the specific siting of the renewable energy facilities is not known at this time it would be speculative to present a discussion of applicable local regulations.

Table III.B-1. Applicable Laws and Regulations for Air Quality

Regulation	Description
Federal	
40 Code of Federal Regulations (CFR) (National Environmental Policy Act [NEPA])	NEPA requires all federal agencies to consider environmental factors through a systematic interdisciplinary approach before committing to a course of action. The NEPA process is an overall framework for the environmental evaluation of federal actions.

Table III.B-1. Applicable Laws and Regulations for Air Quality	
Regulation	**Description**
Clean Air Act and 40 CFR, Part 50	The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) (40 CFR, Part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for six principal pollutants, which are called "criteria" pollutants.
Other Applicable Federal-Level Regulations	This includes all other applicable regulations at the federal level for portions of the project area that are outside of the U.S. (e.g., Canada).
State	
Other Applicable State-Level Regulations	This includes all other applicable regulations at the state level for portions of the project area that are outside of California (e.g., Arizona, Nevada).

3. PROJECT IMPACTS

This section describes the project's out-of-state effects on air quality for the 20 percent RPS and 33 percent RES. The discussion includes the criteria for determining the level of significance of the effects and a description of the methods and assumptions used to conduct the analysis.

As with all of the impacts, the precise magnitude and extent of the impact would depend on the type of renewable energy project authorized, its specific location, its total length and size, and a variety of site-specific factors that are not known at this time. All of these issues would be addressed through project-specific environmental reviews that would be conducted by local land use agencies (e.g., cities, counties) or other regulatory bodies at such time the projects are proposed for implementation. ARB would not be the agency responsible for conducting the project-specific environmental review because it is not the agency with authority for making land use decisions.

(a). METHODOLOGY

Potential out-of-state impacts to air quality were assessed based on the potential for the 33 percent RES to exceed the thresholds of significance identified below. The analysis that is presented below evaluates the change from existing conditions to the 33 percent RES in 2020. However, an incremental portion of these impacts would occur regardless of whether the 33 percent RES is implemented. The CPUC approved the 20 percent RPS and this regulation would be implemented by 2020. The 33 percent RES would further the renewable energy objective and would be added to the 20 percent RPS. Therefore, the analysis below describes the impacts that would occur under the 20 percent RPS, the total impacts that would occur under the 33 percent RES (i.e., existing conditions to 33 percent RES), and the incremental impacts from 20 percent RPS to 33 percent RES. For each of these alternatives, a high and low load scenario is also evaluated (see Section II, Project Description, for additional details).

For some impacts below, the same type and magnitude would occur under each scenario and each alternative. Where this occurs, a combined analysis is presented to streamline the presentation of environmental impacts to avoid unnecessary repetition.

(b). THRESHOLDS OF SIGNIFICANCE

For purposes of this analysis, the following applicable thresholds of significance were used to determine whether implementing the 33 percent RES would result in a significant air quality impacts. The project would result in a significant impact if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

IMPACT B-1	**Short-Term Construction Impacts to Air Quality from Out-of-State Project-Generated Emissions of Criteria Air Pollutants and Precursors. Because the specific air quality impacts of the 33 percent RES cannot be identified with any certainty, and construction activities associated with these projects could generate levels that conflict with applicable air quality plans, violate or contribute substantially to an existing or projected violation, or result in a cumulatively considerable net increase in non-attainment areas, this impact is considered *potentially significant* for all renewable energy types under the 33 percent RES (high and low load).**

All Renewable Energy Project Types

All renewable energy projects no matter their size, out-of-state location, or type would be required to seek local land use approvals prior to their implementation. Part of the land use entitlement process requires that each of these projects undergo environmental review consistent with Federal environmental review requirements (e.g., NEPA) or other applicable state requirements. The environmental review process for all renewable project types under either the 20 percent RPS or 33 percent RES would assess whether project implementation would result in short-term construction air quality impacts.

At this time, the specific location, type, and number of renewable energy projects constructed out-of-state is not known and would be dependent upon a variety of market factors that are not within the control of ARB including: economic costs, energy demands, environmental constraints, and other market constraints. Nonetheless, the analysis provided herein provides a reasonable accounting of the types of environmental impacts that would occur with implementation of the 33 percent RES plausible compliance scenarios (high or low load conditions) as discussed below for short-term construction emissions. Further, subsequent environmental review would be conducted at such time that a renewable energy project is proposed and land use entitlements are sought.

During construction of renewable energy projects out-of-state, criteria air pollutant and precursor emissions could be generated from a variety of construction activities and emission sources. These emissions would be temporary and occur intermittently depending on the intensity of construction on a given day. Site grading and excavation activities would generate fugitive PM dust emissions, which is the primary pollutant of concern during construction. Fugitive PM dust emissions (including PM_{10} and $PM_{2.5}$) vary as a function of parameters such as soil silt content and moisture, wind speed, acreage of disturbance area, and the intensity of activity performed with construction equipment. Exhaust emissions from off-road construction equipment, material delivery trips, and construction worker-commute trips could also contribute to short-term increases in PM emissions, but to a lesser extent. Exhaust emissions from construction-related mobile sources also include ROG and NO_x emissions. These emission types and associated levels fluctuate greatly depending on the particular type, number, and duration of usage for the varying equipment. Criteria air pollutants that are also associated with localized concerns (e.g., CO) are discussed under Impact B-3 below.

The site preparation phase typically generates the most substantial emission levels because of the on-site equipment and ground-disturbing activities associated with grading, compacting, and excavation. Site preparation equipment and activities typically include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Although detailed construction specific information is not available at this time, based on the types of renewable energy projects listed in the Section II, Project Description it would be expected that the primary sources of construction-related emissions include soil disturbance- and equipment-related activities (e.g., use of backhoes, bulldozers, excavators, and other related equipment). Based on typical

emission rates and default parameters for above mentioned equipment and activities, construction of a out-of-state renewable energy project could result in hundreds of pounds of daily NO_x and PM_{10}, which may exceed general mass emissions limits depending on the exact location of generation. Thus, because the specific air quality impacts of renewable energy projects necessary to comply with the 33 percent RES cannot be identified with any certainty, and construction activities associated with these projects could generate levels that conflict with applicable air quality plans, violate or contribute substantially to an existing or projected violation, or result in a cumulatively considerable net increase in non-attainment areas, this impact is considered potentially significant for all renewable energy types under the 33 percent RES (high and low load). It is important to note that there is no difference in the impacts that would occur under the 20 percent RPS versus the 33 percent RES, as, based on the modeling, the magnitude of electricity generated from new out of-state renewable projects is relatively similar (e.g., approximately 9,500 GWh versus 10,900 GWh under both low and high load scenarios). Additionally, the magnitude of this impact is influenced more by the how (e.g., size of project footprint and types of construction activities required) and the where (e.g., whether located in a nonattainment area) of the new renewable projects, more so than the total amount of electricity generated.

IMPACT B-2 **Long-Term Operational Impacts to Air Quality from Out-of-State Project-Generated Emissions of Criteria Air Pollutants and Precursors. Because renewable generation produces lower levels criteria air pollutants per unit of electricity output than fossil-fuel generation it would displace and less total electricity would be generated out-of-state in comparison to existing conditions, these projects would not be anticipated to result in significant environmental impacts (e.g., generate levels that conflict with applicable air quality plans, violate or contribute substantially to an existing or projected violation, or result in a cumulatively considerable net increase in non-attainment areas). This impact is considered *less than significant* for all renewable energy types under the 33 percent RES (high and low load).**

All Renewable Energy Project Types

All renewable energy projects no matter their size, location out-of-state, or type would be required to seek local land use approvals prior to their implementation. Part of the land use entitlement process requires that each of these projects undergo environmental review consistent with Federal environmental review requirements (e.g., NEPA) or other applicable state requirements. The environmental review process for all renewable project types under either the 20 percent RPS or 33 percent RES would assess whether project implementation would result in long-term operational air quality impacts.

At this time, the specific location, type, and number of renewable energy projects constructed out-of-state is not known and would be dependent upon a variety of market factors that are not within the control of ARB including: economic costs, energy demands, environmental constraints, and other market constraints. Nonetheless, as

discussed with regards to the in-state projects, renewable generation produces less criteria air pollutants per unit of electrical output than fossil-fuel generation it would displace with implementation of the 33 percent RES plausible compliance scenarios (high or low load conditions). Additionally, in comparison to existing conditions less total electricity would be generated out-of-state under the 33 percent RES (e.g., approximately 98,000 GWh versus 60,000 under the low load scenario and 86,000 under the high load scenario). Further, subsequent environmental review would be conducted at such time that a renewable energy project is proposed and land use entitlements are sought. Thus, project-generated long-term operational emissions of criteria air pollutants would not be anticipated to result in significant environmental impacts (e.g., generate levels that conflict with applicable air quality plans, violate or contribute substantially to an existing or projected violation, or result in a cumulatively considerable net increase in non-attainment areas). It is important to note that there is no difference in the impacts that would occur under the 20 percent RPS versus the 33 percent RES (e.g., in comparison to existing conditions less total electricity would be generated out-of-state under both the low and high load scenarios). This impact is considered less than significant for all renewable energy types under the 33 percent RES (high and low load).

IMPACT B-3 **Impacts to Sensitive Receptors in the Project Area from Exposure to Substantial Pollutant Emissions (e.g., localized criteria air pollutants, toxic air contaminates) and Odors. Because the specific out-of-state air quality impacts of the 33 percent RES cannot be identified with any certainty, and these projects could potentially expose sensitive receptors to substantial localized criteria air pollutants, toxic air contaminants , or odors, this impact is considered *potentially significant* for all renewable energy types under the 33 percent RES (high and low load).**

All Renewable Energy Project Types

As discussed above under Impact B-1, all renewable energy projects no matter their size, location out-of-state, or type would be required to seek local land use approvals prior to their implementation. Part of the land use entitlement process requires that each of these projects undergo environmental review consistent with Federal environmental review requirements (e.g., NEPA) or other applicable state requirements. The environmental review process for all renewable project types under either the 20 percent RPS or 33 percent RES would assess whether project implementation would result in the exposure of sensitive receptors to air quality impacts.

At this time, the specific location, type, and number of renewable energy projects constructed out-of-state is not known and would be dependent upon a variety of market factors that are not within the control of ARB including: economic costs, energy demands, environmental constraints, and other market constraints. Nonetheless, the analysis provided herein provides a reasonable accounting of the types of environmental impacts that would occur with implementation of the 33 percent RES plausible compliance scenarios (high or low load conditions) as discussed below for the

exposure of sensitive receptors to substantial emissions. Further, subsequent environmental review would be conducted at such time that a renewable energy project is proposed and land use entitlements are sought.

The primary criteria air pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of motor vehicle activity, particularly during peak commute hours, including traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential areas, schools, playgrounds, childcare facilities, and hospitals. Consequently, CO emissions are typically analyzed at a local rather than a regional level. Additionally, because increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, the criteria to determine if project-generated emissions would result in the exposure of sensitive receptors to substantial pollutant concentrations is tied the project's effect on the delay times and LOS of local intersections.

As discussed in Section M, Transportation and Traffic, although detailed information is not currently available, renewable energy projects would be anticipated to result in short-term construction and long-term operational traffic from worker commute-, maintenance/operation-, and material delivery-related trips. The amount of construction activity would fluctuate depending on the particular type, number, and duration of usage for the varying equipment; and the phase of construction (e.g., demolition, construction, erection). These variations would affect the amount of project-generated traffic for both worker commute trips and material deliveries. The amount of operational traffic would also vary depending on the size and type of renewable energy project. Thus, depending on the amount of trip generation and the location of the renewable energy project, implementation could conflict with applicable programs, plans, ordinances, or policies, specifically the degradation of delay times and LOS of local intersections, which are tied as discussed above to localized CO impacts. Long-term operation of stationary sources could also result in localized CO emissions at sensitive receptors if located at close distance to new renewable energy projects.

During construction of renewable energy projects out-of-state, toxic air contaminants (TACs) could be generated from a variety of construction activities, but primarily composed of exhaust emissions from off-road construction equipment, material delivery trips, and construction worker-commute trips. Construction activities could be located in areas where naturally occurring substances are present in the soil, thatif These emission types and associated levels fluctuate greatly depending on the particular type, number, and duration of usage for the varying equipment. The amount of TAC's and associated unit risk factors from operational activities would also vary depending on the size and type of renewable energy project. Even though project implementation would be anticipated to produce less TACs overall due to the fact renewable energy production produces less TAC's per unit of electricity output than the fossil-fuel generation it would displace under the plausible compliance scenarios, the exposure of sensitive receptors is highly dependent on the their distance from the source.

With regards to both project-generated construction and operational TAC emissions, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment, which is positively correlated with distance from the source, and the duration of exposure to the substance. Thus, a new renewable energy project could be located in an area where sensitive receptors are currently located and no current sources exist, resulting in a net increase in exposure from project implementation.

Lastly, though the types of renewable energy projects listed in the Project Description would not be anticipated to result in any construction-related odor emissions, long-term operational activities could depending on the exact type of stationary sources on-site. Even diesel emissions at a close distance could be considered an objectionable odor source.

In summary, the specific location, type, and number of renewable energy projects constructed out-of-state is not known at this time. However, construction and operational activities could result in the generation of localized CO emissions, TACs, and odors. Thus, because the specific air quality impacts of new renewable projects needed to comply with the 33 percent RES cannot be identified with any certainty, and activities associated with these projects, depending on the exact location of the renewable energy projects in relation to existing sensitive receptors, could result in the exposure thereof to substantial pollutant concentrations or odors, this impact is considered potentially significant for all renewable energy types under the 33 percent RES (high and low load). It is important to note that there is no difference in the out-of-state impacts that would occur under the 20 percent RPS versus the 33 percent RES.

4. MITIGATION

Mitigation is required for the following significant or potentially significant impacts.

Mitigation Measure B-1

- **Proponents for the proposed renewable energy project shall coordinate with local land use agencies to seek entitlements for development of the project including completing all necessary environmental review requirements (e.g., NEPA). The local land use agency or governing body shall certify that the environmental document was prepared in compliance with applicable regulations and shall approve the project for development.**

- **Based on the results of the environmental review, proponents shall implement all mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project.**

- **Comply with local plans, policies, ordinances, rule, and regulations regarding air quality-related emissions and associated exposure.**

- **Apply for, secure, and comply with all appropriate air quality permits for project construction and operations from the local agencies with air**

quality jurisdiction and from other applicable agencies (e.g., EPA), if appropriate, prior to construction mobilization.

- **Prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction and operation of the project.**

The proponents and local land use agencies can and should be the parties responsible for the approval and implementation of the renewable energy project and its mitigation. ARB is not a land use agency and would not be responsible for ensuring that this mitigation is implemented. Implementation of the above mitigation would reduce this impact to a less-than-significant level

for all renewable energy types under the 33 percent RES plausible compliance scenarios (high and low load conditions).

Mitigation Measure B-2

- **Implement Mitigation M-1 above.**

The proponents and local land use agencies can and should be the parties responsible for the approval and implementation of the renewable energy project and its mitigation. ARB is not a land use agency and would not be responsible for ensuring that this mitigation is implemented.

Implementation of the above mitigation would reduce this impact to a less-than-significant level for all renewable energy types under the 33 percent RES (high and low load conditions).