
Revision No. 2

Plan of Development Alta East Wind Project

Prepared for
Alta Windpower Development, LLC

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Contents

1.	Project Description.....	1-1
1.1	Introduction.....	1-1
1.1.1	Describe type of facility and generation capacity (federal and non-federal lands).....	1-2
1.1.2	Applicant’s proposed schedule for Project, including anticipated timelines for permitting, construction and operation, and any phased development as appropriate	1-3
1.2	Proponents Purpose and Need for the Project	1-4
1.3	General Facility Description, Design and Orientation	1-5
1.3.1	Project location, land ownership and jurisdiction	1-5
1.3.2	Legal land description of facility (federal and non-federal lands)	1-5
1.3.3	Total acreage and general dimensions of all facilities and components	1-5
1.3.4	Number and size of wind turbines (federal and non-federal lands) ..	1-7
1.3.5	Wind turbine configuration and layout (federal and non-federal lands).....	1-8
1.3.6	Substations, transmission lines, access roads, buildings, parking areas.....	1-8
1.3.7	Ancillary facilities (administrative and maintenance facilities and storage sites).....	1-8
1.3.8	Temporary construction workspace, yards, staging areas	1-8
1.3.9	Water usage, amounts, sources (during construction and operations).....	1-9
1.3.10	Erosion control and stormwater drainage	1-9
1.3.11	Vegetation treatment, weed management, and any proposed use of herbicides.....	1-11
1.3.12	Waste and hazardous materials management	1-12
1.3.13	Fire protection.....	1-12
1.3.14	Site security and fencing proposed (during construction and operations).....	1-13
1.3.15	Electrical components, new equipment and existing system upgrades	1-14
1.3.16	Interconnection to electrical grid.....	1-15
1.3.17	Spill prevention and containment for construction and operation of facility	1-15
1.3.18	Health and safety program	1-17
1.4	Other Federal, State and Local Agency Permit Requirements.....	1-17
1.4.1	Identify required permits (entire Project area on both federal and non-federal lands)	1-17
1.4.2	Status of permits.....	1-18
1.5	Financial and Technical Capability of Applicant.....	1-20

2.	Construction of Facilities	2-1
2.1	Wind Turbine Design, Layout, Installation, and Construction Processes Including Timetable and Sequence of Construction	2-1
2.2	Phased Projects, Describe Approach to Construction and Operations	2-1
2.3	Access and Transportation System, Component Delivery, Worker Access...	2-2
2.4	Construction Work Force Numbers, Vehicles, Equipment, Timeframes	2-2
2.5	Site Preparation, Surveying and Staking	2-3
2.6	Site Preparation, Vegetation Removal and Treatment.....	2-3
2.7	Site Clearing, Grading and Excavation	2-3
2.8	Gravel, Aggregate, Concrete Needs and Sources	2-4
2.9	Wind Turbine Assembly and Construction.....	2-4
2.10	Electrical Construction Activities.....	2-5
2.11	Aviation Lighting (Wind Turbines, Transmission)	2-5
2.12	Site Stabilization, Protection, and Reclamation Practices	2-6
3.	Related Facilities and Systems.....	3-1
3.1	Transmission System Interconnect	3-1
3.1.1	Existing and proposed transmission system	3-1
3.1.2	Ancillary facilities and substations	3-3
3.1.3	Status of power purchase agreements.....	3-3
3.1.4	Status of interconnect agreement	3-3
3.1.5	General design and construction standards	3-4
3.2	Meteorological Towers	3-4
3.3	Other Related Systems.....	3-5
4.	Operations and Maintenance	4-1
4.1	Operation and Facility Maintenance Needs	4-1
4.2	Maintenance Activities, Including Road Maintenance	4-1
4.3	Operations Workforce, Equipment, and Ground Transportation.....	4-2
5.	Environmental Considerations	5-1
5.1	Special or Sensitive Species and Habitats	5-1
5.1.1	Special-status wildlife	5-3
5.1.2	Vegetation.....	5-5
5.1.3	Special-status plants.....	5-5
5.1.4	Potential impacts	5-6
5.1.5	Mitigation measures.....	5-6
5.1.6	References.....	5-7
5.2	Special Land Use Designations	5-8
5.2.2	Kern County Zoning Ordinance	5-10
5.2.3	Potential impacts	5-11
5.2.4	Mitigation measures.....	5-11
5.2.5	References.....	5-12
5.3	Cultural and Historic Resource Sites and Values	5-12
5.3.1	Potential impacts	5-12
5.3.2	Mitigation measures.....	5-14
5.4	Native American Tribal Concerns	5-14
5.5	Recreation and OHV Conflicts	5-14
5.5.1	Potential impacts	5-15
5.5.2	Mitigation measures.....	5-15

	5.5.3	References.....	5-15
5.6		Aesthetics.....	5-15
	5.6.2	Potential impacts	5-16
	5.6.3	Mitigation measures.....	5-17
	5.6.4	References.....	5-17
5.7		Aviation and/or Military Conflicts	5-17
	5.7.2	Potential military conflicts	5-19
	5.7.3	Mitigation measures.....	5-20
	5.7.4	References.....	5-20
5.8		Air Quality.....	5-20
	5.8.1	Potential impacts	5-22
	5.8.2	Mitigation measures.....	5-22
	5.8.3	References.....	5-22
5.9		Geologic Hazards and Soils	5-23
	5.9.1	Potential impacts	5-24
	5.9.2	Mitigation measures.....	5-25
	5.9.3	References.....	5-25
5.10		Noise.....	5-26
	5.10.2	Sensitive receptors.....	5-27
	5.10.3	Potential impacts	5-27
	5.10.4	Mitigation measures.....	5-28
	5.10.5	References.....	5-28
5.11		Paleontological Resources	5-28
	5.11.1	Potential impacts	5-29
	5.11.2	Mitigation measures.....	5-30
	5.11.3	References.....	5-30
5.12		Socioeconomics and Environmental Justice	5-30
	5.12.1	Potential impacts	5-31
	5.12.2	Mitigation measures.....	5-31
	5.12.3	References.....	5-31
5.13		Water Resources	5-31
	5.13.1	Potential impacts	5-31
	5.13.2	Mitigation measures.....	5-32
	5.13.3	References.....	5-32
6.		Maps and Drawings	6-1

Tables

1-1	BLM Parcels Proposed for Wind Energy Development ¹	1-2
1-2	Land Ownership in Project Area.....	1-3
1-3	Anticipated Project Development Schedule	1-3
1-4	Approximate Dimensions of Project Components and Estimated Temporary and Permanent Land Disturbance	Error! Bookmark not defined.
1-5	Preliminary List of Potential Permits, Authorizations and Consultations.....	1-18
2-1	Construction Workforce and Equipment Required for a Typical 300 MW Project ...	2-2
5-1	Special-status Wildlife Species with Potential to Occur in the Project Area	5-4
5-2	Special-status Plant Species with Potential to Occur in the Project Area	5-5

5-3	Alta East Special Land Use Designations.....	5-9
5-4	Sites Evaluated during the Alta East Archaeological Survey	5-13
5-5	KCAPCD Attainment Status.....	5-21
5-6	KCAPCD Thresholds of Significance	5-21

Figures (located in Section 6)

6-1	Alta East Project Area
6-2a	Wind Energy Development Area (Option A)
6-2b	Wind Energy Development Area (Option B)
6-3	Transmission Line Alternatives
6-4	Completed Biological Surveys
6-5	BLM and Kern County Land Use Designations
6-6	Kern County Zoning Designations

Engineering Drawings:

Preliminary Collector System Layout
Civil Construction Plans

Appendices

A	Assessor Parcel Numbers in Alta East Project Area
B	Proposed Mitigation Measures
C	Biological Technical Reports
D	Cultural Resources Inventory Report
E	Visual Resources Technical Memorandum
F	Air Quality Technical Memorandum
G	Geological Resources Technical Memorandum
H	Noise Technical Memorandum
I	Paleontological Resources Technical Memorandum

Acronyms and Abbreviations

ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
AOCM	Alta-Oak Creek Mojave
APLIC	Avian Power Line Interaction Committee
ARB	California Air Resources Board
AWD or Applicant	Alta Windpower Development, LLC
AWEC	Alta Wind Energy Center
BLM	U.S. Bureau of Land Management
BMPs	Best Management Practices
CACA	California Serial Number
Cal/OSHA	California Division of Occupational Safety and Health
CBC	California Building Code
CBOC	California Burrowing Owl Consortium
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRHR	California Register of Historic Resources
CRIR	Cultural Resources Inventory Report
CUP	Conditional Use Permit
DOGGR	California Division of Oil, Gas and Geothermal Resources
EIR / EA	Environmental Impact Report/Environmental Assessment
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act

FONSI	Finding of No Significant Impact
FPS	Floodplain Secondary Combining
GANDA	Garcia and Associates
KCAPCD	Kern County Air Pollution Control District
kV	kilovolts
LAC	LandAmerica Assessment Corporation
LGIA	Large Generator Interconnection Agreement
MDA	Master Development Agreement
MHWA	M.H. Wolfe and Associates
MW	megawatts
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
NTIA	National Telecommunications Information Administration
O&M	operations and maintenance
OHV	off-highway vehicles
PEIS	Programmatic Environmental Impact Statement
POD	Plan of Development
PPA	power purchase agreement
PRMMP	Paleontological Resource Monitoring and Mitigation Plan
Project	Alta East Wind Energy Project
ROW	Right-of-Way
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SBB&M	San Bernardino Baseline and Meridian
SCADA	Supervisory Command and Data Acquisition
SCE	Southern California Edison
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasure

SR	State Route
SWPPPs	Storm Water Pollution Prevention Plans
TCVWD	Tehachapi Cummings Valley Water District
TGP	Terra-Gen Power, LLC
TRTP	Tehachapi Renewable Transmission Project
TWRA	Tehachapi Wind Resource Area
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
WE	Wind Energy; Wind Energy Combining District
WEST	Western EcoSystems Technology, Inc.
WMP	West Mojave Plan
WTG or turbines	wind turbine generators

1. Project Description

1.1 Introduction

Alta Windpower Development, LLC (“Applicant” or “AWD”) has prepared this Plan of Development (POD) to describe the construction activities, as well as operation and maintenance (O&M) activities, associated with the Alta East Wind Project (“Project”) proposed in the Tehachapi region of southern California. A portion of the Project is proposed to be located on land managed by the U.S. Bureau of Land Management (BLM).

On May 12, 2010, AWD submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the BLM to secure a Right-of-Way (ROW) Grant for the Sun Creek Wind Project. Since that submittal, the Project boundary has undergone further refinement and the Project name has changed to the Alta East Wind Project. This revised POD provides updated Project information on the Alta East Wind Project including maps showing the amended Project boundary, and technical environmental evaluations. The primary objective of this POD is to supplement the Standard Form 299 by providing the following Project-related information as required by the BLM guidance document for Wind Energy PODs¹ (with corresponding sections in this POD):

- A Project Description, including: the purpose and need for the Project; general facility description, design and orientation; and permitting requirements (current section, Section 1)
- Construction of Facilities (Section 2)
- Related Facilities and Systems (Section 3)
- Operations and Maintenance (Section 4)
- Environmental Considerations (Section 5; Appendices C through I), which describe the anticipated impacts and proposed mitigation to various resources, including:
 - Special or sensitive species and habitats
 - Special land use designations
 - Cultural and historic resource sites and values
 - Native American Tribal concerns
 - Recreation and off-highway vehicle (OHV) conflicts
 - Visual Resource Management (VRM) designations (or Aesthetics)
 - Aviation and/or military conflicts
 - Other environmental considerations
- Maps and Drawings (Section 6), which include site relevant maps, drawings and plans

¹ The guidance document was appended to Instruction Memorandum No. 2009-043, issued December 19, 2008, and is available online at: http://windeis.anl.gov/documents/docs/IM2009-043_att2.pdf
Instruction Memorandum No. 2009-043 is available online at: http://www.windeis.anl.gov/documents/docs/IM_2009-043_BLMWindEnergyDevelopmentPolicy.pdf

- Appendix A, which provides parcel ownership information.
- Appendix B, which provides a list of proposed mitigation measures for the Project consistent with the findings in the studies and the mitigations in place for other, similar projects in the area.

1.1.1 Describe type of facility and generation capacity (federal and non-federal lands)

The proposed development is a wind energy facility, consisting of up to 120 wind turbine generators (“WTG” or “turbines”) with a nameplate capacity rating of approximately 300 megawatts (MW), their ancillary facilities and supporting infrastructure, pursuant to Chapter 16.94 of the Kern County Zoning Ordinance. Up to 120 WTGs would be located on approximately 3,200 acres on land managed by Kern County and the BLM. Approximately 65 percent of the Project area would be located on land managed by BLM, and approximately 69 to 72 percent of the WTGs would be located on land managed by BLM. Specifically, the Project would be located on portions of parcels managed by the BLM, as listed in Table 1-1.

TABLE 1-1
BLM Parcels Proposed for Wind Energy Development¹

Township ²	Range ²	Section ²	Assessor Parcel Number	Existing Parcel Serial No. ¹
32 South	35 East	26 SW ¼, W ½ SE ¼	224-241-28	CACA 44611
32 South	35 East	34 All	224-242-10	CACA 44611
32 South	35 East	28 Lots 1-4, N ½, SE ¼	224-281-03	CACA 44611
32 South	35 East	32	224-281-05	³
12 North	13 West	34 All	224-291-01	CACA 51335

Notes:

¹ Per Pre-filing meeting with BLM on October 7, 2010, AWD is requesting consolidation of existing ROW Grants (CACA 44611 and 51335) into a single CACA 51335. A request for this consolidation was submitted to BLM on October 8, 2010.

² San Bernardino Baseline and Meridian, Kern County, CA

³ AWD is evaluating the extent of current Type III right-of-way CACA 13768 to determine how to use unused lands for inclusion in Alta East Project. AWD will provide evaluation updates to BLM.

A preliminary estimate of total land area within the Project area is approximately 3,200 acres, of which approximately 2,083 acres are under the jurisdiction of BLM. Wind energy development area is anticipated to cover approximately 2,431 acres onsite, of which 1,750 are on BLM land. Two options (Option A and Option B) for turbine layout on the project site have been identified. Turbines under either Option fall within established wind energy development areas (further defined below). One turbine layout will ultimately be selected during final design and constructed.

Lands that would be disturbed during construction would primarily be within the established wind energy development areas, and would be significantly less than the total project area acreage. An estimate of potential temporary and permanent land disturbance is provided in Tables 1-4A and 1-4B in Section 1.3.3. Table 1-2 summarizes land ownership in

the Project area. The location of the Project site is shown in Figure 6-1: Alta East Project Site Map (all figures located in Section 6).

TABLE 1-2
Land Ownership in Project Area

Land Area	Approximate Acreage
Total Lands in Project Area	3,199
<i>Lands under the jurisdiction of the BLM</i>	2,083
<i>Lands under the jurisdiction of Kern County</i>	1,116
Proposed Wind Energy Development Area	2,431
<i>On BLM lands</i>	1,750
<i>On Kern County lands</i>	681

1.1.2 Applicant’s proposed schedule for Project, including anticipated timelines for permitting, construction and operation, and any phased development as appropriate

Construction is anticipated to commence in the spring of 2012 or earlier, if all required permits and authorizations have been secured. Since the Project will include some private lands on which wind energy development is not currently zoned, a zone change / Conditional Use Permit (CUP) application was filed with Kern County on August 25, 2010 and was subsequently amended and resubmitted on October 22, 2010. The project description to the County has since been updated with the latest information contained herein in February 2011. Construction of the Project will take approximately 9 to 12 months to complete. Hours of construction would typically be between 5:30 a.m. and 9:00 p.m., Monday through Friday (8 hour 5 day/week schedule). If required, construction would also occur between 7:00 a.m. to 6:00 p.m. on Saturdays and Sundays to meet critical schedule milestones.

Table 1-3 summarizes the estimated Project development schedule as it relates to major phases. Section 1.4 includes a list of all permits required by the Project. Section 2.1 includes a timetable indicating duration and sequence of construction.

TABLE 1-3
Anticipated Project Development Schedule

Phase	Estimated Dates
Submittal of Preliminary ROW grant application (Standard Form 299) to BLM	May 2010
Prepare and Update Plan of Development	October 2010
Field studies and resource reports for EIR / EIS ¹	June 2010 – April 2011
Prepare Kern County Zone Change / Conditional Use Permit (CUP) Application	October 2010
Prepare EIR / EIS	Fall 2010-Spring 2011
Certification of EIR / EIS by Kern County / BLM	Summer/Fall 2011
Kern County Issuance of zone change and CUP	Summer/Fall 2011

TABLE 1-3
Anticipated Project Development Schedule

Phase	Estimated Dates
BLM issues Record of Decision, followed by BLM ROW grant	Spring 2012
Construct and Commission the facility	Spring 2012-Fall 2012
Total elapsed time	Approximately 30 months

Note:

¹ See Section 5.0 and Appendices C through I for resource-specific survey reports.

1.2 Proponents Purpose and Need for the Project

The United States federal government has recently turned to the renewable energy industry to help solve some of its biggest challenges: national security, job creation and climate change. President Barack Obama wants to double the amount of renewable energy the U.S. can generate by 2012. The wind industry is poised to play a leading role in our nation's attempt to reduce its reliance on traditional fossil fuel, to cut its greenhouse gas emissions and to boost the economy. Existing wind power capacity in the United States stands at approximately 35,000 MW representing only 2.5% of the nation's electricity consumption. A report supported by the Department of Energy concludes that it is possible for wind energy to supply up to 20% of our nation's electricity needs. The Alta East Wind Project would help the federal government reach its critical renewable energy goals, while generating land use royalties for BLM of approximately \$[xx] million annually.

In addition to federal efforts to integrate more wind power into our nation's energy mix, the state of California has enacted legislation to support the growth of wind power. California's Renewable Portfolio Standard (RPS) is one of the most ambitious efforts in the country to integrate renewable energy. California's RPS requires investor-owned utilities to purchase 20% of their power from renewable resources and the standard is expected to be increased to 33% by 2020. The RPS complements California Assembly Bill 32, which established a first-in-the-world comprehensive program of regulatory and market mechanisms to reduce greenhouse gas emissions. The Alta East Wind Project would support both pieces of legislation by serving as a critical source of clean renewable energy, reducing the need for electricity generated from fossil fuels and offsetting greenhouse gas emissions.

In response to California clean energy legislation, Southern California Edison (SCE) executed a Master Power Purchase and Wind Project Development Agreement (MDA) with AWD in December 2006. According to the agreement, AWD is to deliver up to 1,550 MW of wind energy from new projects to be developed in the Tehachapi Wind Resource Area from 2010 through 2015. Power purchase agreements have been executed under the MDA for the Alta East Wind Project.

In addition to helping the nation, state and utilities meet their renewable energy goals, the Alta East Wind Project would provide substantial economic benefits to the BLM and Kern County. Specifically, the Project would do the following:

- Provide increased revenue to BLM for the use of the federal land
- Increase the tax base of Kern County

- Create a substantial number of temporary and permanent jobs in the county
- Boost local business activity during construction and operation
- Provide revenue to county residents who own underutilized land that has little potential to be developed for other uses while allowing these landowners to retain much of their current land use

1.3 General Facility Description, Design and Orientation

1.3.1 Project location, land ownership and jurisdiction

The Project is proposed to be located on approximately 3,200 acres on the north and south sides of State Route (SR) 58 in southeastern Kern County, California. The Project area is approximately 3 miles northwest of the Town of Mojave and approximately 11 miles east of the City of Tehachapi.

The Project site includes both private and federal lands. Ownership by parcel is listed in Appendix A, at the end of this document and is updated with the latest project information contained herein. Federal lands within the Project area are under the jurisdiction of the BLM and private lands are under the jurisdiction of Kern County. Approximately 681 acres will need to be rezoned to be consistent with the Kern County Zoning Ordinance Wind Energy (WE) Combining District, as discussed in greater detail in Section 5.2, Special Land Use Designations.

1.3.2 Legal land description of facility (federal and non-federal lands)

The Project site is located in Kern County within:

- Sections 26, 27, 28, 32, 33, 34, and 35 of Township 32 South, Range 35 East (San Bernardino Baseline and Meridian [SBB&M])
- Section 34 of Township 12 North, Range 13 West (SBB&M)
- Section 3 of Township 11 North, Range 13 West (SBB&M)
- Section 31 of Township 12 North, Range 12 West (SBB&M)

Portions of these lands are also included in existing BLM ROW grants/applications held by AWD, or by a subsidiary of AWD's parent company, Terra-Gen Power, including:

- Grant CA-44611: Section 26 (SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$); Section 28 (Lots 1-4, N $\frac{1}{2}$, SE $\frac{1}{4}$), and Section 34 of Township 32 South, Range 35 East, and
- Grant Application CA-51335: Section 34 of Township 12 North, Range 13 West.

1.3.3 Total acreage and general dimensions of all facilities and components

The Project lies on approximately 3,200 acres of land. Within the 3,200-acre Project area, wind energy development would occur within proposed wind energy development areas (see Figures 6-2a and 6-2b). The permanent footprint will consist of the wind turbines, as well as a substation, transmission lines, access roads, buildings, parking areas and ancillary facilities as described below (Tables 1-4A and 1-4B) within the proposed wind energy

development areas. Total land area within the anticipated wind energy development area is approximately 2,431 acres. Lands that would be disturbed during construction would be within the established wind energy development areas, and would be significantly less than the total development area acreage, as shown in Tables 1-4A and 1-4B. A portion of the Project site is located on previously disturbed land, including land that is either currently or has previously been used for grazing, other agricultural uses, or other energy generating uses.

TABLE 1-4AOption A - Approximate Dimensions of Project Components and Estimated Temporary and Permanent Land Disturbance¹

Item	Total	Unit	Typical Temporary Disturbance	Temporary Total (acres)	Typical Permanent Impervious	Permanent Total (acres)
Wind Turbine	103	EA	1.3 acres	133.90	2,500 square feet	5.91
Access Road	28,400	FT	35 feet wide	22.82	25 feet wide	16.30
Crane Path	-	FT	50 feet wide	-	-	-
Access Road with Crane Path	107,400	FT	50 feet wide	123.28	25 feet wide	61.64
Underground Electric	165,800	FT	20 feet wide	76.12	-	-
Laydown Area	3	EA	5 acres	15.00	-	-
Substation	1	EA	6 acres	6.00	6 acres	6.00
O & M Facility	1	EA	3 acres	3.00	3 acres	3.00
Interconnect	-	EA	8 acres	-	6 acres	-
230 kV T-Line Pole	-	EA	1 acre	-	200 square feet	-
Met Tower	2	EA	1.3 acre	2.60	1100 square feet	0.05
Concrete Batch Plant	1	EA	4 acre	4.00	-	-
Other ²	-		-	30.00	-	10.00
Total Disturbance				416.72		102.9

Notes:

¹ Estimated disturbed areas for the aboveground transmission route will be provided, once a preferred route has been identified.

² Additional disturbance area included under "Other" includes possible disturbances due to fencing and is listed above in order to provide a conservative estimate of land disturbance.

TABLE 1-4B
Option B - Approximate Dimensions of Project Components and Estimated Temporary and Permanent Land Disturbance¹

Item	Total	Unit	Typical Temporary Disturbance	Temporary Total (acres)	Typical Permanent Impervious	Permanent Total (acres)
Wind Turbine	104	EA	1.3 acres	135.20	2,500 square feet	5.97
Access Road	28,400	FT	35 feet wide	22.82	25 feet wide	16.30
Crane Path	-	FT	50 feet wide	-	-	-
Access Road with Crane Path	112,100	FT	50 feet wide	128.67	25 feet wide	64.34
Underground Electric	199,400	FT	20 feet wide	91.55	-	-
Laydown Area	3	EA	5 acres	15.00	-	-
Substation	1	EA	6 acres	6.00	6 acres	6.00
O & M Facility	1	EA	3 acres	3.00	3 acres	3.00
Interconnect	-	EA	8 acres	-	6 acres	-
230 kV T-Line Pole	-	EA	1 acre	-	200 square feet	-
Met Tower	2	EA	1.3 acres	2.60	1,100 square feet	0.05
Concrete Batch Plant	1	EA	4 acres	4.00	-	-
Other ²	-		-	30.00	-	10.00
Total				438.84		105.66

Notes:

¹ Estimated disturbed areas for the aboveground transmission route will be provided, once a preferred route has been identified.

² Additional disturbance area included under “Other” includes possible disturbances due to fencing and is listed above in order to provide a conservative estimate of land disturbance.

1.3.4 Number and size of wind turbines (federal and non-federal lands)

The proposed turbines to be installed in the Alta East Project are the Vestas V90, up to 3 MW each. The proposed Project would consist of up to 120 state-of-the-art utility scale WTGs with a horizontal axis design, light gray color and non-reflective finish. Tubular steel towers standing 80 meters (262 feet) tall on a 3-meter diameter (10 feet) base with internal maintenance access ladders would be installed to support each turbine’s nacelle, hub, and three-bladed rotor. The turbines planned for the Project have a rotor diameter of 90 meters (295 feet). Assuming the representative dimensions mentioned in this paragraph, the total height of the turbine at the highest point of the rotor blade’s rotation is 125 meters (410 feet) and the ground clearance for the rotor blades at their lowest point of rotation is 35 meters (115 feet). The turbines are designed to withstand wind speeds in excess of 120 miles per hour, a speed that exceeds recorded and projected maximum wind speeds at the Project site.

1.3.5 Wind turbine configuration and layout (federal and non-federal lands)

The WTGs will be arranged in rows in accordance with applicable industry siting recommendations for optimum energy production and minimal land disturbance. The proposed turbine layout Options A and B are shown in Figures 6-2a and 6-2b. Typically, WTGs are spaced approximately 1.2 to 2.0 rotor diameters apart within rows while the rows are spaced 8 to 10 rotor diameters apart. Of the up to 120 turbines, 67 percent are on federal land.

1.3.6 Substations, transmission lines, access roads, buildings, parking areas

The proposed Project area location is adjacent to and/or near existing wind farms, transmission lines, commercial cement manufacturing operations, grazing land and mining operations. Thus, the land in and around the proposed Project area has already been developed for some industrial and agricultural uses.

The Project's permanent facilities will include WTGs, service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, Project substation, meteorological towers, and an O&M facility. Existing and mapped County roads will be used to access the site, wherever possible.

Along with the WTGs and Balance of Plant electrical systems, the Project substation will be commissioned prior to commercial operation. Commissioning includes testing of all components and sign-off by SCE prior to energization of the substation. Once energization is completed, additional testing is conducted to assure the substation systems are fully and safely functioning.

1.3.7 Ancillary facilities (administrative and maintenance facilities and storage sites)

The Project's permanent ancillary facilities for administration and maintenance will include one O&M facility. The facility will be approximately 2 to 3 acres in size and have a foundation footprint of approximately 100 by 150 feet (building). The facility will include a main building with offices, Supervisory Command and Data Acquisition (SCADA) system, control room, spare parts storage, restroom, shop area, outdoor parking facilities, lay-down area, a turn-around area for larger vehicles, outdoor lighting, and gated access with partial or full perimeter fencing as well as a small information center for potential visitors.

1.3.8 Temporary construction workspace, laydown, staging areas

The Project's temporary facilities will include construction access roads, lay-down areas, and a concrete batch plant. Construction lay-down areas, approximately 5 acres each, will be located at convenient points around the Project site to permit the staging of construction equipment, construction contractor trailers, and the offloading and temporary storage of Project equipment and materials. The laydown areas will be cleared of vegetation and compacted to support the construction equipment. At the end of construction, most of these areas will be re-claimed and re-vegetated, but one or two of these areas may be retained for long-term parts and equipment storage and turn-around. Prior to constructing the O&M facility, it is possible that the area designated for the O&M facility will be leveled and graded to temporarily serve as a central base of construction operations, including construction trailers and portable toilets.

1.3.9 Water usage, amounts, sources (during construction and operations)

During construction, water use would be temporary and required for onsite mixing of concrete as well as for dust abatement activities. Any water that is needed for construction would likely be trucked in from nearby municipalities, such as Mojave or Tehachapi, or by new wells. Operation of a wind energy facility would require very small amounts of water. Water for the O&M Building during operation would either be provided by a new well, by purchase of water from the Tehachapi Cummings Valley Water District (TCVWD), or would be trucked in from off-site and stored adjacent to the building.

1.3.10 Erosion control and stormwater drainage

Construction and industrial operations at the site will be subject to the General Construction and General Industrial Storm Water National Pollution Discharge Elimination System (NPDES) permits. Compliance with these permits will require preparation and implementation of construction and operation Storm Water Pollution Prevention Plans (SWPPPs) that address the following requirements (among others):

- Identification of activities that may pollute stormwater;
- Identification of Best Management Practices (BMPs) to control stormwater pollution, including water erosion and wind erosion;
- BMP inspection, maintenance and repair;
- Training; and
- Site inspection and monitoring.

Erosion and sedimentation control BMPs will be designed and implemented to meet the requirements of the General Construction and General Industrial Storm Water NPDES permits as well as any requirements, as specified by BLM in the 2005 *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM Wind Energy PEIS), as well as the BMPs detailed in recent BLM ROW grants (including Grant CA-13528) received by the Applicant on nearby wind development projects. In addition, grading and earthwork will follow the general requirements of the Kern County General Plan and the Kern County Development Code.

Areas to be disturbed during construction include lands surrounding the turbine strings, transmission lines, and access roads. Soil stabilization measures will be used to prevent soil from being detached by stormwater runoff or wind erosion. The Project will include temporary and permanent BMPs to protect the soil surface by covering or binding soil particles or preventing the concentration of runoff. The Project will incorporate erosion-control measures required by regulatory agency permits and contract documents, as well as other measures selected by the contractor. Site-specific BMPs will be identified in the SWPPP, with final selection and design by the contractor, and associated figures to be included in the final active Project SWPPP. Evaluation of impacts to surface waters will be conducted during advanced engineering design; a delineation of surface water features will be completed and provided to the BLM prior to the National Environmental Policy Act (NEPA) evaluation, once available.

After construction, preconstruction land contours at the Project site would be restored to the extent feasible. All areas of temporary disturbance not retained for long-term use would be reseeded with a seed mixture appropriate to the Project site in accordance with Kern County or other regulatory agencies. All construction debris and waste would be removed from the site and disposed of at an appropriate location. Project design features and/or mitigation measures that will aid in the protection of soil resources could include, at a minimum, the following:

- Erosion and sedimentation control calculations will be performed to verify acceptable stormwater velocities, calculate BMP clean-out frequencies and size of rip-rap.
- Construction and final drainage will be designed to promote sheet flow, avoid unnecessary concentration of runoff, and control runoff velocity.
- Stone filters and check dams will be strategically placed throughout the Project site to provide areas for sediment deposition and to promote the sheet flow of stormwater prior to leaving the Project site boundary. Where available, native materials (rock and gravel) will be used for the construction of the stone filter and check dams. A stone crusher may be provided on-site to utilize local stone for the production of gravel.
- Diversion berms, culverts and water bars will be utilized to redirect stormwater.
- Diversion channels will be armored as required to prevent erosion and scouring.
- Flat detention/infiltration ponds and ditches will be used.
- Where possible, maintenance roads will be designed not to disrupt regional flow patterns.
- Silt fences or other approved methodologies will be utilized during each phase of construction to minimize wind and water erosion. Locations have yet to be determined and will be provided during the detailed design phase.
- In areas of temporary disturbance (e.g., pipeline or transmission line alignment, temporary construction support areas), the surface will be recontoured to promote sheet flow and restore and match the original or surrounding drainage function. Native vegetation will be restored to promote healing of the landscape.
- Periodic maintenance will be conducted as required after major storm events and when the volume of material behind the check dams exceeds 50 percent of the original volume. Stone filters and check dams are not intended to alter drainage patterns but are intended to minimize soil erosion and promote sheet flow.
- Erosion and sedimentation control BMP design will be in accordance with applicable government codes and standards.

For each WTG, the turbine pad surrounding the foundation would be constructed of compacted soil graded to draw stormwater runoff away from the foundations.

The stormwater drainage system will be designed using the Soil Conservation Service (SCS) method (TR-55) to determine the amount of rainfall during a specific rainfall event, and in

accordance with requirements specified in the most current version of the Kern County design requirements.

All surface water runoff during and after construction will be controlled in accordance with the requirements of the General Construction and General Industrial Storm Water NPDES Permit, the requirements of Kern County, and all other applicable laws, ordinances, regulations, and standards.

1.3.11 Vegetation treatment, weed management, and any proposed use of herbicides

The developed portions of the site will be cleared of vegetation, grubbed and graded level. This is necessary for construction access and fire prevention.

All vegetation underneath the turbine strings as well as weeds in disturbed areas outside of the strings will be managed in accordance with a Weed Management Plan to be approved by the BLM, including use of a BLM-approved herbicide. A pre-emergent herbicide will be applied in the spring, and spot foliar applications will be implemented throughout the year to maintain the area free of vegetation.

Project design features, along with all applicable mitigation measures from the BLM Wind Energy PEIS and BMPs listed in BLM ROW grants received by the Applicant on nearby wind development projects, will aid in the management of weeds. Relevant PEIS mitigation measures include the following:

- A Noxious Weed Plan will be developed for control of noxious weeds and invasive plants that could occur as a result of new surface disturbance activities at the site. The plan would address monitoring, weed identification, the manner in which weeds spread, and methods for treating infestations.
- Access roads and newly established utility and transmission line corridors will be monitored regularly for invasive species establishment, and weed control measures will be initiated immediately upon evidence of invasive species introduction.
- Fill materials that originate from areas with known invasive vegetation problems will not be used.
- Certified weed-free mulch will be used when stabilizing areas of disturbed soil.
- Habitat restoration activities and invasive vegetation monitoring and control activities will be initiated as soon as possible after construction activities are completed.
- All areas of disturbed soil will be reclaimed using weed-free native shrubs, grasses, and forbs.
- Pesticide use, if required, will be limited to non-persistent, immobile pesticides and will only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.
- Vehicles and equipment will be cleaned (with water or high pressure air) prior to commencing work in off-road areas, at existing construction yards or legally operating

car washes, or at on-site washing stations at Project access points. AWD will document that vehicles have been washed prior to commencing work.

1.3.12 Waste and hazardous materials management

Hazardous materials are those chemicals listed in the U.S. Environmental Protection Agency's (USEPA's) Consolidated List of Chemicals Subject to Reporting under Title III of the Superfund Amendments and Re-authorization Act of 1986. No extremely hazardous materials (as defined by 40 CFR 335) are anticipated to be produced, used, stored, transported, or disposed of as a result of this Project. Production, use, storage, transport, and disposal of hazardous materials associated with the proposed Project would be in strict accordance with federal, state, and local government regulations and guidelines. Potentially hazardous materials used in the O&M of the Project would be stored in the O&M building in approved aboveground containers with appropriate spill containment features.

Turbine lubricants used in the turbine gearbox are potentially hazardous. The gearbox would be sealed to prevent lubricant leakage. The gearbox lubricant would be sampled periodically and tested to confirm that it retains adequate lubricating properties. When the lubricants have degraded to the point where they no longer contain the needed lubricating properties, the gearbox would be drained, and new lubricant would be added.

Transformers contain oil for heat dissipation. The transformers are sealed and contain no moving parts. The transformer oil would not be subject to periodic inspection and does not need replacement.

Construction equipment and O&M vehicles would be properly maintained at all times to minimize leaks of motor oils, hydraulic fluids, and fuels. During construction, refueling and maintaining vehicles that are authorized for highway travel would be performed offsite at an appropriate facility. Construction vehicles that are not highway-authorized would be serviced on the Project site by a maintenance crew using a specially designed vehicle maintenance truck. During operation, O&M vehicles would be serviced and fueled at the O&M building or at an offsite location. A Spill Prevention Control and Countermeasure (SPCC) plan would be prepared for the proposed Facility and would contain information regarding training, equipment inspection and maintenance, and refueling for construction vehicles, with an emphasis on preventing spills.

The Hazardous Materials Business Plan for the proposed Project would contain specific information regarding the types and quantities of hazardous materials, as well as their production, use, storage, transport, and disposal. This plan would be included as a requirement of the ROW grant for the proposed Project.

Further measures to ensure hazardous materials are handled and disposed of properly will be provided in the Facility Management Plan. Per Section 1.3.17, an SPCC Plan will also be developed prior to construction and operation of the facility.

1.3.13 Fire protection

Each turbine nacelle is equipped with an internal fire detection system with sensors located in the nacelle as well as the tower base. The proposed fire detection/extinguishing system would be designed specifically for wind turbines and would comply with international standards for fire protection systems. It is also certified and recognized by insurance

providers. The system would be maintenance-free and would work independently of the wind turbine's power supply, and would therefore not be affected by any electrical influences. Multiple temperature sensors would be located in the nacelle in the tower and would detect nacelle overheating or ignition. The system would report the event to the wind turbine control unit, which would then trigger an alarm and shut down the wind turbine. The alarm would trigger the fire extinguishing system, which would activate the extinguishing devices where the fire has been reported. The chemicals used would be biodegradable. A fire detection system within each WTG would interface with the main controller and the SCADA system. After an emergency stop is executed, the turbine would be inspected in person, and the stop-fault would be reset manually before automatic operation will be reactivated.

For protection from potential lightning strikes, each wind turbine, including the rotor blades, would be equipped with a lightning protection system. The lightning protection system would be connected to an underground grounding arrangement to facilitate lightning flowing safely to the ground. In addition, all equipment, cables, and structures comprising the wind turbines would be connected to a metallic Project-wide grounding network.

1.3.14 Site security and fencing proposed (during construction and operations)

Kern County's fencing requirements for proposed wind developments are found in Section 19.4.140(c) of the County Zoning Ordinance:

"Fencing shall be erected for each wind machine or on the perimeter of the total project. Wind project facilities shall be enclosed with a minimum four (4)-foot high security fence constructed of four (4) strand barbed wire or materials of a higher quality. Fencing erected on the perimeter of the total project shall include minimum eighteen (18)-inch by eighteen (18)-inch signs warning of wind turbine dangers. Such signs shall be located a maximum of three hundred (300) feet apart and at all points of ingress and egress. Where perimeter fencing is utilized, the Planning Director may waive this requirement for any portion of the site where unauthorized access is precluded due to topographic conditions."

The Applicant would comply with the Kern County Zoning Ordinance and proposes to use site-specific security fencing to secure the Project site consisting of new steel "T" posts installed at 10- to 15-foot intervals and with four strands of barbed wire a minimum of four feet high. Higher quality fencing materials may be used if site conditions warrant doing so. The bottom strand of wire will be a minimum of 18 inches above ground to allow small animals to pass under the fence and mitigate habitat fragmentation. Depending on the species in the area, a smooth wire may be used for the bottom strand. The Applicant will upgrade, repair, or replace any existing fencing as necessary to comply with the above standard. The Applicant will install 18-inch by 18-inch signs warning of wind turbine dangers on all perimeter fencing at 300-foot intervals and at all points of ingress and egress.

Two types of gates will be utilized:

- Main access entrances off county highways will require county highway encroachment permits. The main access gates will consist of two 12-foot wide swing gates, providing a 24-foot opening. The gates will be installed a reasonable distance off the highways to

permit trucks delivering turbine components to pull completely off the highway before stopping to open the gate. The access areas will be graveled to prevent tracking of mud onto the paved highways.

- Interior access gates will be utilized to provide service access between the various fenced areas and will consist of one 10- to 16-foot wide swing gate, wide enough to permit access for the normal maintenance vehicles and equipment needed to maintain the turbines and site. The post at the free end of the gate will be removable to permit the fence to be temporarily opened to 24 feet to allow access for large vehicles or cranes occasionally needed to maintain the turbines.

If the land is being used for grazing or is identified as desert tortoise habitat, cattle guards will be installed if appropriate.

Temporary construction fencing will be installed in accordance with applicable California Division of Occupational Safety and Health (Cal/OSHA) and County regulations around work sites such as excavations for foundations and underground cabling, batch plant, substation sites, and set-up areas, to assure security and personnel safety during construction. Where appropriate, construction fencing may be retained for permanent fencing, and would be constructed to meet standards for permanent installations. If additional permanent fencing is required, these permanent fences and gates would be installed following completion of construction.

The proposed Project site contains multiple existing rights of way for transmission lines, railroad, gas pipelines, the California Aqueduct, and public highways, all of which cut the overall site into various individual areas. Additionally, new high voltage transmission lines associated with the Tehachapi Renewable Transmission Project are being constructed by SCE across portions of the area. Project fencing will be installed in such a way as to not interfere with legal access to holders of the various rights-of-way.

1.3.15 Electrical components, new equipment and existing system upgrades

The following major equipment will be delivered to the Project site to construct the Project substation: control house, electrical breakers, 230/34.5-kilovolt (kV) transformers, overhead electrical bus, and pole structures. Additional bulk materials such as conductor, electrical boxes, conduit, switches, meters, relays, and all other substation-related equipment will also be delivered as needed.

The underground electrical collection system cables will be buried in trenches during construction. The trenches are excavated using a backhoe or a trenching machine, once construction of the roads and WTG foundations are underway for a row of WTGs, as the underground electrical cable is typically run along the length of the roads. To the extent practical, the communication system cabling is buried in the same trench with the electrical collection system cables to minimize the amount of site disturbance. Clean fill will be placed immediately around the cables in the trench and excavated material is used to the extent possible to fill in the remaining trench space. As required by electrical code, the underground lines are marked by a buried warning tape placed close to the surface to warn personnel of the presence of underground lines to avoid accidental excavation of the lines in the future. The electrical and communication cabling are run to each WTG in series through the transformer terminals, which would likely be contained within the WTG itself. Where

feasible, portions of the electrical and communications systems may run from junction boxes to the substation on overhead lines mounted on wood, steel, or concrete poles to minimize the amount of disturbance and reduce cost.

1.3.16 Interconnection to electrical grid

Electricity will be collected from each WTG through its associated transformer and transferred to a collector substation via the electrical collection system. Within each WTG, the transformer (either internal or external) will step-up the voltage (likely to 34.5 kV for this Project) for collection purposes. Typically, the collection system consists of underground cables connecting individual WTGs together and conducting the electrical power to the Project substation(s). Underground electrical cables will be installed in trenches approximately 3 to 5 feet deep for each cable circuit. In cases where the distance to the substation is excessive, or where terrain and/or obstacles dictate such, the underground cables may connect to an overhead collection system on wood or steel poles that will more efficiently transport the power to the Project substation. The voltage is increased from 34.5 kV to the interconnection voltage of 230 kV at the substation.

As part of the TRTP, SCE is constructing a major transmission substation, the Windhub Substation, located on Oak Creek Road southwest of the Project. Windhub will receive renewable wind energy generated from the Tehachapi Wind Resource Area for transmission. The Alta East Project will deliver its electricity to SCE at the Windhub Substation.

AWD proposes to construct one 230/34.5-kV collector substation at the Project site. This substation will cover an area of approximately 300 feet by 300 feet, and will consist of the following: 1) a control house, 2) electrical breakers, 3) one or more 230/34.5-kV transformers, 4) an overhead electrical bus connecting the various electrical apparatus, and 5) pole structures to support electrical conductors entering the substation and exiting to the 230 kV transmission line(s). The actual capacity of the Project substation will depend upon the total number of wind turbines which supply it power.

At least one switchyard will be required for the Project. The switchyard will collect power coming from the substation and consolidate the power onto high voltage overhead transmission lines.

1.3.17 Spill prevention and containment for construction and operation of facility

An SPCC Plan will be developed in accordance with federal regulations to protect the environment from spills of gasoline, transformer oil, or diesel. The SPCC Plan will describe the measures to be taken to reduce the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes), oil, and oil products during the construction and operation of the facility. The SPCC Plan will be submitted to the BLM for review and approval prior to implementation. At a minimum, the SPCC will include the following:

- Assessment of potential spills and secondary containment.
- Proper transportation, handling, use, storage, and disposal procedures.

- A comprehensive training program covering the procedures outlined in the plan.
- Inspection, record-keeping/ documentation, and notification requirements.
- An outline of the required spill prevention and response (cleanup) procedures for the facility.

Waste management for solid non-hazardous waste and hazardous waste will be implemented for the Project in accordance with an approved Waste Management Plan. These wastes will be disposed of off-site at a properly licensed facility.

In addition to the above, Project design features, along with all applicable mitigation measures from the BLM Wind Energy PEIS and BMPs listed in BLM ROW grants received by the Applicant on nearby wind development projects, will aid in the management of hazardous materials. Relevant PEIS mitigation measures include the following:

- A hazardous materials management plan will be developed addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan will identify all hazardous materials that would be used, stored, or transported at the site, as well as inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, disposition of excess materials, and requirements for notices to federal and local emergency response authorities and include emergency response plans.
- A spill prevention and response plan will be developed identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits are adequately stocked at all times, and procedures for making timely notifications to authorities.
- A stormwater management plan will be developed to ensure compliance with applicable regulations and prevent off-site migration of contaminated stormwater or increased soil erosion.
- Secondary containment will be provided for all on-site hazardous materials and waste storage, including fuel.
- Wastes will be properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.
- Any wastewater generated in association with temporary, portable sanitary facilities will be periodically removed by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews will be adequate to support expected on-site personnel and will be removed at the completion of construction activities.

1.3.18 Health and safety program

The Project will utilize WTGs designed with several levels of built-in safety to comply with Cal/OSHA and American National Standards Institute (ANSI) requirements. While each WTG will operate automatically and independently, the Project WTGs will be monitored carefully by personnel located in the O&M facility. The O&M facility will utilize a central SCADA system to remotely control the WTGs, connected to the Project turbines via a fiber optic communications network.

As noted previously, each WTG has a lightning rod atop the nacelle. The anemometer, wind vane, other sensitive parts in the nacelle, and the controller are protected from noise or surge spike due to lightning by an upgraded shielded protection system. Each of the blades also has lightning shielding which protects the blade from damage caused by lightning. The WTG mounted protection is tied to a bare copper grounding cable installed around the foundation for lightning and electrical protection. A fire detection system within each WTG interfaces with the main controller and the SCADA system.

Portions of the Project are located within the influence area of the Mojave Airport as well as within the Mojave Specific Plan, requiring the County to confirm that the Project is compatible with the County's land use regulations for the Mojave Airport. In addition, installation of the WTGs will be required to comply with Federal Aviation Administration (FAA) Advisory Circular 70/7460-1, Obstruction Lighting/Marking, requirements. The Applicant will file form 7460-1, Notification of Proposed Construction or Alteration, with the FAA for each WTG, to determine whether the structures would pose a hazard to air navigation and/or are required to meet height restrictions. The FAA will determine the appropriate lighting required for the Project and the appropriate exterior finish for the WTGs for daylight marking to ensure safety. Also, all development within the Mojave Airport influence area must dedicate a navigation easement to the airport's operator, the East Kern Airport District.

1.4 Other Federal, State and Local Agency Permit Requirements

1.4.1 Identify required permits (entire Project area on both federal and non-federal lands)

With zone change and a CUP, the Project would be consistent with the Land Use Element of the Kern County General Plan and the Mojave Specific Plan, and there would be no need for an amendment to these plans. Since the County prefers to authorize commercial wind turbine uses through Wind Energy rezoning as an overlay of existing zoning, a zone change application has been submitted to the County for a change of zone from current zoning to include a WE Combining District overlay. The Application to Kern County will apply to three different Kern County zoning maps (197, 198, and 214). The existing zoning of the Project land involves all of the following: Limited Agriculture (A-1), Wind Energy Combining (WE), and Estate (E-20 acres). The Applicant requests zone changes to the existing underlying zoning where the existing zoning is inconsistent with the Kern County General Plan.

Other discretionary permits, reviews or authorizations that could be required for the proposed Project include: a CUP for the use of a concrete batch plant, Airport Land Use Plan Compatibility review for military and civilian airports in the Project vicinity, a Public Utilities Code Section 851 permit, a Streambed Alteration Agreement, General Permit for Stormwater Discharges, Section 401 Water Quality certification, California Department of Fish and Game (CDFG) take authorization pursuant to Fish and Game Code 2081, BLM ROW grants, federal Endangered Species Act (ESA) review and Incidental Take Authorization, and FAA Part 77 determination.

1.4.2 Status of permits

A preliminary draft application for a ROW Grant was filed with the BLM for the Alta East Project in May 2010. AWD will pursue the requisite permits from the County and federal and state resource agencies that may be necessary concurrent with the NEPA/ California Environmental Quality Act (CEQA) review process. Table 1-5 lists the federal, state, and local permits that are anticipated to be required.

In order for the BLM to issue a ROW Grant, federal environmental review and a positive conclusion from the BLM is required. This would allow AWD to use federal land. For the purposes of environmental review and permitting, it is expected that BLM will be the lead federal agency for compliance with NEPA and Kern County will be the lead agency for compliance with CEQA.

TABLE 1-5
Preliminary List of Potential Permits, Authorizations and Consultations

Agency	Permit/Authorization	Action Requiring Permit Approval or Review
Federal		
U.S. Bureau of Land Management (BLM)	ROW Grant pursuant to Federal Land Policy and Management Act (FLPMA)	Use of BLM land
	Environmental Assessment per the National Environmental Policy Act (NEPA) Record of Decision/Finding of No Significant Impact (FONSI)	Required review as part of obtaining a federal permit or approval, siting on federal lands (e.g., issuance of right-of-way grant)
State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office	Section 106 of the National Historic Preservation Act Native American Consultation	Any activity that may affect prehistoric or historic resources eligible for the National Historic Register of Historic Places
U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation	Activities that may take a federally-listed species
Federal Aviation Administration (FAA)	Notice of Proposed Construction or Alteration Application (FAA Form 7460-1)	This notice is required for construction of wind turbines and use of construction cranes (structures greater than 200 feet).
	Determination of No Hazard Air Navigation Permit	Form 7460-2 Part II must be submitted for each turbine.

TABLE 1-5
Preliminary List of Potential Permits, Authorizations and Consultations

Agency	Permit/Authorization	Action Requiring Permit Approval or Review
State		
California Department of Fish and Game (CDFG)	1602 Streambed Alteration Agreement (if required)	Activities modifying a river, stream, or lake
	2081 Incidental Take Permit and/or 2080.1 Consistency Determination (if required)	Activities that may take a state-listed species
Lahontan Regional Water Quality Control Board	Waste Discharge Requirements (WDRs)	Issuance of WDRs for activities that involve discharge into State waters
	National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activity	Stormwater discharges associated with construction activities disturbing 1 acre of land or more
California Department of Transportation (Caltrans)	Oversized/Heavy Load Permit	Allow transport of oversized equipment on State roads
Kern County		
Kern County	Wind Energy Zone Overlay to allow Wind Energy	Allow installation of turbines in Project area
	Conditional Use Permit (CUP)	Permit construction of concrete batch plant on private lands
	Supplemental Environmental Impact Report per the California Environmental Quality Act (CEQA)	Review of environmental effects triggered by zone change application
	Detailed Plot Plan Review	Planning Department review of final design
	Building, Electrical, and Well Permits	Permit to construct structures on private lands
	Grading Permit	Permit grading of private lands
	Setback Waivers	Authorize erection of turbines on private lands outside baseline setback standards
	Noise Waivers	Waivers of noise requirement
	Encroachment Permit	Permit connection of any Project access roads to county road
	Franchise Agreement	Permit use of county right-of-way for transmission line
Authority to Construct/Permit to Operate	Pre-construction approval to ensure Project is in compliance with air pollution regulations	

TABLE 1-5
Preliminary List of Potential Permits, Authorizations and Consultations

Agency	Permit/Authorization	Action Requiring Permit Approval or Review
Union Pacific Railroad		
UPRR	Encroachment Permit	Construction of new transmission line that will need to cross UPRR tracks

1.5 Financial and Technical Capability of Applicant

Alta Windpower Development is an indirect, wholly owned subsidiary of Terra-Gen Power, LLC (Terra-Gen or TGP). Terra-Gen is an affiliate of ArcLight Capital Partners and Global Infrastructure Partners, investment firms that manage funds valued over \$6.8 billion and \$5.6 billion, respectively. With more than 830 MW of generating capacity in operation and 720 MW under construction, TGP is one of the nation’s leading renewable energy providers and is the only American company that provides electricity on a utility scale from all three major renewable energy sources: wind, solar and geothermal power. Terra-Gen currently has 21 renewable energy projects in operation in six states, and more than 5,000 megawatts of renewable energy capacity under development.

TGP is currently developing the world’s largest wind energy project, the Alta Wind Energy Center (AWEC), in the Tehachapi-Mojave area in Kern County, California. When completed, AWEC will have the capacity to generate 1,550 MW of clean renewable energy – nearly double the capacity of the largest existing wind energy project and enough to supply power to 1.1 million people, or the equivalent of 275,000 homes. The Alta projects are expected to create more than 3,000 domestic manufacturing, construction and operation and maintenance jobs, and to contribute more than \$1.2 billion to the local economy in Kern County. To date, TGP has raised \$1.6 billion of funding in the bank and capital markets to support ongoing construction of AWEC’s first 720 MW. The energy center would increase the installed wind power capacity in California by 25 percent.

Further information about TGP, ArcLight Capital and Global Infrastructure Partners can be found at the following websites: www.terra-genpower.com/, www.arclightcapital.com and www.global-infra.com.

2. Construction of Facilities

Advanced engineering and preliminary drawings (30 percent complete) are included in Section 6.

Wind turbine supply and commissioning will be managed by the WTG manufacturer(s) and specialized contractors, including the general contractor, who will handle all remaining construction work, known as the Balance of Plant (BOP) work. The BOP work will be performed under one or more engineering, procurement, and construction (EPC) contracts. The BOP includes installation of all WTGs, non-WTG facilities, and infrastructure including roads, electrical collection system, transmission lines and substation, as well as any buildings. Thus, the BOP contractor will bear responsibility for preparation of the land for construction.

2.1 Wind Turbine Design, Layout, Installation, and Construction Processes Including Timetable and Sequence of Construction

The WTGs will be approximately 125 meters (approximately 410 feet) in total height, measured from the top of the foundation to blade tip with a blade in the vertical position. The power output of each WTG will be up to 3 MW. The installed WTGs will be state-of-the-art utility, multi-MW class machines and will be arranged in rows in accordance with applicable industry siting recommendations for optimum energy production and minimal land disturbance.

Each WTG will have a concrete and steel reinforced foundation. The design of the foundation will depend upon the results of the geotechnical investigation for the Project. This open area will be maintained free of vegetation for safety and fire control. Turbine installations will also include an open area surrounding the turbine for access and safety that will be gravel covered. This open area will be maintained free of vegetation for safety and fire control.

2.2 Phased Projects, Describe Approach to Construction and Operations

The Applicant has identified wind development areas within which all WTGs and related infrastructure will be located (Wind Energy Development Area) (see Figures 6-2a and 6-2b). The number of turbines per corridor may vary in the final layout and shall not be relied upon as a plan document before the layout is finalized.

2.3 Access and Transportation System, Component Delivery, Worker Access

There will be two types of roads required for the Project: temporary roads used during construction to access areas within the Project site, and permanent roads used during operations to access Project facilities for maintenance. The Project road network will have a larger footprint during construction due to the size of the equipment – especially the cranes required to erect the WTGs and the trailers required to bring the nacelle, hub, blades, tower sections and transformers to the site. Some of these roads may be removed and restored after initial construction; some may be reduced in size; and others may be maintained at their construction size for the life of the Project to allow for crane usage during operations and maintenance.

Temporary construction roads will make use of any applicable existing permanent site roads along the WTG rows by temporarily widening these roads to approximately 40 feet. These traffic ways will be engineered and compacted to carry the weight of heavy cranes and delivery vehicles. Following completion of construction, the temporary part of these roads will be disked and re-vegetated, leaving approximately 20- to 24-foot wide permanent site roads.

2.4 Construction Work Force Numbers, Vehicles, Equipment, Timeframes

After the Project site has been prepared for construction, the raw materials and equipment necessary to build the Project will be delivered to the site. The raw materials required include gravel for roads, concrete, sand, and cement for foundations; and water for concrete, dust control, and erosion controls. The heavy equipment listed in Table 2-1 will be used during construction – all of which will primarily run on diesel fuel.

TABLE 2-1
Construction Workforce and Equipment Required for a Typical 300 MW Project

Construction Activity	Workforce	Equipment
Office Staff / Management	10	Pickup and small vehicles
Foundations	30	Dozer, grader, excavator or drill rig, crane, concrete pump trucks, concrete trucks, pickup trucks with trailers, all terrain forklifts, water trucks, dump trucks, compactors, generators, welders
Roads	24	Dozer, grader, front end loaders, compactor, roller, pickup trucks, water trucks, dump trucks, compactors, scrapers
WTG Component Unloading Crew (pad site)	15	Cranes, all terrain forklifts, pickup trucks with trailers
WTG Erecting	40	Cranes, pickup trucks with trailers
Environmental	8	Pickup and flat bed trucks
Substation	20	Cranes, forklifts, pickup trucks, water trucks, concrete pump trucks, concrete trucks, dump trucks, compactors, generators, welders, scrapers

TABLE 2-1
Construction Workforce and Equipment Required for a Typical 300 MW Project

Construction Activity	Workforce	Equipment
Collection System	20	Trencher, grader, forklift, small cranes
Directional Boring	8	Boring machine, pickup trucks
Transmission line	35	Cranes, excavator, drill rig, pickup trucks
Laborers	20	Pickup trucks
Owner Representatives	7	Pickup trucks
Turbine Supplier	25	Pickup trucks
Total Number of People:	262	

2.5 Site Preparation, Surveying and Staking

Preparation for construction will begin when all necessary Kern County, state, and federal approvals have been obtained and detailed land surveys have been completed, geotechnical investigations have been finalized, engineering design is completed, and the required construction permits have been obtained from the various permitting agencies. Prior to mobilization to the site, the construction crew will survey and stake all approved work areas, staging areas, associated ROWs, and access roads. The site areas affected by construction will be securely fenced prior to the beginning of construction activities.

2.6 Site Preparation, Vegetation Removal and Treatment

Preparation of the Project site for construction will involve land clearing and grading by removing topsoil and vegetation for roads, WTGs, and substation. Land clearing and grading will be performed according to the BLM policies, Soil Erosion and Sedimentation Mitigation Plan approved by Kern County, the Project’s state-approved SWPPP, and the grading and building permits issued by Kern County. Cleared vegetation will either be shredded and distributed as mulch or disposed of off-site.

2.7 Site Clearing, Grading and Excavation

Once all areas are appropriately staked and signed and access to the site has been established, grading activities will begin. As stated above, preparation of the Project site for construction will involve land clearing and grading by removing topsoil and vegetation for roads, WTGs, and substation. Land clearing and grading will be performed according to the BLM policies, Soil Erosion and Sedimentation Mitigation Plan approved by Kern County, the Project’s state-approved SWPPP, and the grading and building permits issued by Kern County.

2.8 Gravel, Aggregate, Concrete Needs and Sources

Concrete will be used to construct the ancillary facilities, WTG foundations and pads, and possibly for pole foundations. Gravel will be required for the surfacing of roads and parking areas, and for use in concrete. At this time, gravel is anticipated to be trucked in from a local quarry. A temporary concrete batch plant may also be located on-site to support these construction activities.

2.9 Wind Turbine Assembly and Construction

Once adequate turbine pad sites and site roads are prepared, the individual WTG components, tower sections, nacelle, hub and rotor blades, are shipped to the construction site. The size of several WTG components typically requires special delivery trailers to be provided by the trucking companies. Some of the deliveries will require load permits from state or county agencies. The WTG components will be delivered directly to and unloaded at each prepared WTG site or, when unloading at the pad sites is not feasible, unloaded at one of the set up yards for storage until the WTG site is ready.

For each WTG, the turbine pad will be constructed of compacted soil graded to draw stormwater runoff away from the foundations. The construction process can be described as follows:

- The site is graded to the desired elevation and the foundation hole excavated.
- Once a hole for the foundation is excavated, a seal slab (approximately 3- to 6-inch thick concrete floor) is poured at the bottom of the foundation hole in advance of rebar placement. Forms are set in place, and then steel reinforcement, anchor bolts and conduit are placed into the foundation hole.
- The foundation is poured, allowed to cure, and ground control grids are installed.
- The tower sections are raised into place using a crane and then bolted together.
- A crane is used to raise the nacelle to its place atop the tower, where it is bolted into place.
- The blades are attached to the hub on the ground and then the rotor assembly is hoisted into place on the front of the nacelle and bolted into place (in some cases – for large turbines – a single blade installation may be required by attaching the blades to the hub after the hub is attached to the nacelle atop the tower).
- All internal cabling is connected and terminated.

A gravel ring will also be installed around the base of each turbine that would connect the turbine to the access road. Following completion of commissioning, the turbine pads will be graded to repair any construction damage and to assure proper drainage of stormwater away from the foundation.

2.10 Electrical Construction Activities

Electrical construction will include installation of the electrical collection system, substation, and overhead and underground transmission lines necessary to energize the Project. At least one switchyard will also be required for the Project.

Project electricity would be collected from each WTG through its associated transformer and transferred to a substation via the electrical collection system. Typically, the collection system consists of underground cables connecting individual WTGs together and conducting the electrical power to the collector substation. Underground electrical cables would be installed in trenches approximately 3 to 5 feet deep for each cable circuit. In cases where the distance to the substation is excessive, or where terrain and/or obstacles dictate such, the underground cables may connect to an overhead collection system on wood or steel poles that would more efficiently transport the power to the collector substation. From the Project substation, aboveground transmission lines would be installed connecting the Alta East Project to the existing Windhub Substation.

The substation site within the Project will be built to Kern County building code requirements and graded to provide for stormwater drainage. The substation site will also be graveled and enclosed within a security fence. A suitable grounding grid will be installed to protect the substation against lightning and shorts.

Switchyard construction will consist of site grading, concrete equipment foundation forming and pouring, crane-placed electrical and structural equipment, underground and overhead cabling and cable termination, ground grid trenching and termination, control building erection, and installation of all associated systems including, but not limited to lighting, communication and control equipment, and lightning protection.

2.11 Aviation Lighting (Wind Turbines, Transmission)

The Alta East Project would be constructed and operated in accordance with FAA rules for structural lighting, locations, and height. Safety lighting would be installed on the exterior of some of the nacelles in compliance with FAA rules. Specific requirements for the Project would be developed in conjunction with the FAA based on the turbine heights and site-specific aviation conditions.

Turbine structures and, where applicable, permanent met towers, will be marked and/or lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting - Chapters 4, 12 and 13 (Turbines). The FAA recently changed its guidance for wind turbine lighting and now requires only synchronized red flashing lights at night (and none during daylight hours); the FAA also requires that WTGs be light grey or white in color. Lighting for the Project would be consistent with all FAA requirements. This lighting is for safety purposes and is dictated by the FAA but it will be minimized to address potential avian impacts to the extent allowed by the FAA. Transmission line structures are not expected to exceed 200 feet, and therefore would not be subject to FAA review, and lighting requirements.

2.12 Site Stabilization, Protection, and Reclamation Practices

After the construction of the Project is complete, the site will be cleaned up and restored to facilitate operations activities. All waste, debris, and construction equipment will be removed from the site. During construction, the site will be kept as clean as possible on a daily basis, but post construction, any visible waste on the Project site will be removed. Site restoration requirements will be set forth in the Project's construction and operation permits but may include re-vegetation of all construction areas not needed during operations. The majority of the staging and laydown areas will be re-vegetated, although the Project will likely keep a few sites available for long-term maintenance. The overall footprint of the Project's road system will also be reduced, which will include eliminating some roads and reducing the width of the majority of others used during construction.

3. Related Facilities and Systems

3.1 Transmission System Interconnect

Electricity is collected from each WTG through its associated transformer and transferred to a substation via the electrical collection system. Low voltage electricity is generated by the wind turbine in the range of 600 to 1,000 volts. At each WTG, a transformer will step-up the voltage (likely to 34.5 kV) for collection purposes. Typically, the collection system consists of underground cables connecting individual WTGs together and conducting the electrical power to the Project substation(s). Underground electrical cables will be installed in trenches approximately 3 to 5 feet deep for each cable circuit. In cases where the distance to the substation is excessive, or where terrain and/or obstacles dictate such, the underground cables may connect to an overhead collection system on wood or steel poles that will more efficiently transport the power to the Project collection substation. The voltage is increased from 34.5 kV to the interconnection voltage of 230 kV at the Project's collection substation. The Project will interconnect at the Windhub Substation that is part of the SCE's TRTP.

From the collection substation, electricity will be delivered to the grid by way of i) a new overhead 230-kV transmission line directly interconnecting into the SCE Windhub Substation, or ii) a new overhead 230-kV transmission line interconnecting directly into an existing substation located in the Alta-Oak Creek Mojave (AOCM) Project

3.1.1 Existing and proposed transmission system

There are a number of existing and proposed high voltage transmission (HVT) lines in the Project area. All of these lines are located within the area associated with the AOCM Project. The transmission lines include the following:

- (i) The Sage Brush Partnership owns a 230 kV transmission line transmitting power from existing wind farms north of the proposed Project site to a point of interconnection with SCE several miles south of the Project site. The line follows Tehachapi Willow Springs Road along Sections 3, 8, and 9 of T11N, R14W to the intersection of Tehachapi-Willow Springs and Oak Creek Road in Section 15, T11N, and R13W. The Sage Brush Line then follows Oak Creek Road east out of the Project area until Section 18 of T11N, R13W, where it enters the AOCM Project.
- (ii) SCE has two 66 kV transmission lines in the AOCM Project area. The lines start at SCE's existing Cal Cement Substation at the CPC cement plant. One line runs south, parallel to the west boundary of Sections 19, 30, and 31 of T11N, R1W, and continues south off the AOCM Project site. The second line has a more complex path, beginning at the cement plant, running east across the middle of Section 19; then south 1.5 miles, parallel to the east boundary of Sections 19 and 30 of T11N, R13W; then west, parallel to the south boundary of Section 30 of T11N, R13W and Section 25 of T11N, R14W; then south, parallel to the west boundary of Section 36 of T11N, R14W; and continuing south off the Project site.

- (iii) LADWP has a high voltage transmission corridor which contains a dirt access road within the easement and two HVT lines that will cross the southeast corner of the AOCM Project area. AWD understands that LADWP is in the process of adding a third HVT line to this corridor. This corridor runs diagonally southwest across Section 35 of T11N, R13W, continuing southwesterly in a straight line across Section 2 of T10N, R13W and off the AOCM Project site.
- (iv) SCE is constructing two new 500 kV HVT lines across the AOCM Project area to their new substation, Windhub, just east of CPC's existing cement plant. One line is rated at 500 kV power and the other is rated at 230 kV. Windhub is the point of interconnection for delivery of electrical power generated by the AOCM Project to SCE. Both of these HVT lines will start at the Windhub Substation, located on Section 20, T11N and R13W. The 500 kV line will run due south across Sections 20 to the middle of Section 29, T11N, R13W, then turn southwest to traverse Section 31 of T11N, R13W and Section 1 of T10N, R14W, and out of the Project site. The 230 kV line will run southwest from Wind Hub across Sections 20 and 30 of T11N, R13W and into Section 36 of T11N, R14W, where it turns south, crosses Tehachapi-Willow Springs Road and continues out of the Project site.
- (v) A third new 230 kV line will be constructed by SCE from Windhub, running west along Oak Creek Road, then northwest along Tehachapi-Willow Springs Road for a short distance before turning north through the existing wind farms to a new substation SCE will construct in the Tehachapi Valley. This line will cross a small portion of the AOCM Project in Section 10 near the intersection of Oak Creek Road and Tehachapi-Willow Springs Road.
- (vi) SCE has two 66 kV lines and one 15 kV transmission line passing across the CPC Proper Subarea near the intersection of Tehachapi-Willow Springs Road and Oak Creek Road (Section 15, T11N, R14W).
- (vii) SCE has a two circuit 12 kV distribution line that runs parallel to Cameron Road, on the south side of the road, in Section 10, T11N, R14W.
- (viii) SCE has a two circuit (66 kV & 12 kV) transmission line along the east side of Tehachapi-Willow Springs Road through Sections 9 and 15, T11N, R14W.

AWD is currently evaluating two potential transmission routes to deliver Project electricity to the SCE Windhub Substation, located approximately 3.5 miles southwest of the Alta East Project (see Figure 6-3). The selected transmission installation will be comingled with the above-described existing and proposed transmission network. The transmission alternatives would all utilize aboveground 230 kV lines and would be installed on standard wooden poles.

Transmission Line Alternative A ("Alternative A") is a 230 kV line approximately 15 miles long. It would exit the Project area traveling southward through privately-owned land parallel to Pipeline Road, and in a stair step pattern heading west at 45th Street West and south at 50th Street West to cross Oak Creek Road. After Oak Creek Road, Alternative A turns west along Big Inch Pipeline Road and then heads southward to meet Sunset Avenue. Alternative A follows Sunset Avenue to the west, and in a stair step pattern extends north just after 80th Street West eventually following 90th Street West to pass adjacent to Substation

3A using the shared AOCM utility corridors to connect into Windhub. Substation 3A is owned and operated by affiliates of AWD and is located approximately 3 miles southeast of the Windhub substation. Alternative A would cross the Los Angeles Aqueduct, and the Burlington Santa Fe Railroad line.

Transmission Line Alternative B (“Alternative B”) is a 230kV line approximately 9 miles long. It would exit the Project site to the west-southwest following an existing access road within an adjacent wind energy developed area. Alternative B then extends south within Township 11 N Range 14W Section 1, and ultimately enters the AOCM project through a shared corridor to connect directly into the SCE Windhub Substation. Alternative B would cross lands under the jurisdiction of the BLM.

3.1.2 Ancillary facilities and substations

As part of the TRTP, SCE is constructing a major power substation, the Windhub Substation, located along Oak Creek Road (southwest of the Project) to receive renewable wind energy generated from the Wind Resource Area. SCE is also constructing 500 kV and 230 kV overhead transmission lines into the Windhub substation from the south. The Project will deliver its electricity to SCE at the Windhub Substation.

As stated previously, AWD may construct one 230/34.5-kV Project collection substation within the Project area to minimize power losses in the collection system. The Project substation switchyard will cover an area of approximately 300 feet by 300 feet and will consist of the following: 1) a control house, 2) electrical breakers, 3) one or more 230/34.5-kV transformers, 4) an overhead electrical bus connecting the various electrical apparatus, and 5) pole structures to support electrical conductors entering the substation and exiting to the 230 kV transmission line.

The substation site within the Project will be graded to provide for stormwater drainage. A suitable grounding grid will be installed to protect the substation against lightning and electrical faults. The substation will be built to Kern County building code requirements, and the site will be graveled and enclosed within a security fence.

3.1.3 Status of power purchase agreements

AWD executed a Master Power Purchase and Wind Project Development Agreement with SCE in December of 2006 to deliver up to 1,550 MW of wind energy from new projects to be developed in the Tehachapi Wind Resource Area from 2009 through 2015. This MDA shows the substantial commitment of California’s largest energy retailer to achieve the State’s Renewable Portfolio Standard of 33% renewable energy by 2020. The proposed Alta East Wind Project is expected to provide approximately 300 MW of wind generation capacity under the MDA. AWD executed two project-specific power purchase agreements for the Alta East Project under the MDA for a total of 300 MW on April 30, 2010.

3.1.4 Status of interconnect agreement

AWD has 130 MW of unused interconnection capacity available under existing Large Generator Interconnection Agreements (LGIA) for 1,150 MW at Windhub, and an additional 720 MW interconnecting into Windhub for which draft LGIAs have been issued and are in the process of finalization.

3.1.5 General design and construction standards

The transmission line will be designed and maintained to SCE standards, which are consistent with the CPUC General Order (G.O.) 95, the National Electric Safety Code, and other local and state building codes. Construction of transmission lines will follow those described in *Mitigating Bird Collision with Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC], 2006).

In addition to design and construction standards, the regular inspection of transmission lines, instrumentation and control, and support systems is critical for safe, efficient, and economical operation. Early identification of items needing maintenance, repair, or replacement will ensure continued safe operation of the proposed Project. AWD will inspect all of the structures from the surface annually for corrosion, misalignment, and excavation. Ground inspection will occur on selected lines to check the condition of hardware, insulators, and conductors. This inspection will include checking conductors and fixtures for corrosion, breaks, broken insulators, and failing splices.

3.2 Meteorological Towers

Meteorological towers (met towers) have been installed over the past few years on the Project site prior to Project development to measure and collect data necessary to properly assess Project viability and determine optimum turbine layout. Once the Project has been constructed, some of the larger, un-guyed towers already installed may remain as permanent met towers and some additional permanent towers will be installed to assist in the operation of the Project, help meet reporting obligations, and help to maximize Project efficiency during operations. The permanent met towers will be free-standing lattice towers with concrete foundations. These towers support anemometers, wind direction sensors, and temperature and relative humidity gauges at the same height of the WTG rotor hubs to monitor wind and other climate data needed to support operations. The exact number and location of the permanent met towers will be determined based on site terrain and contractual obligations under the MDA with SCE. All met towers will remain within the Project site.

Where necessary to carry out WTG performance tests for the turbine performance warranty or for compliance with contractual requirements, temporary met towers may be installed in conjunction with some of the permanent met towers. Typically, the temporary met towers are placed on sites intended for installation of WTGs. Data is collected over a period of time and correlated to data collected by a corresponding permanent met tower installed upwind of the temporary met tower. Once the data collected by the permanent met towers is correlated to the temporary met tower's data, the temporary met towers will be removed to make room for the WTG. This WTG and the permanent met tower can then be used to verify that the WTGs actually produce in accordance with the guaranteed power curve of the WTG.

3.3 Other Related Systems

Communications system requirements (microwave, fiber optics, hard wire, wireless) during construction and operation

The SCADA system is critical to proper operations and maintenance of the Project and utilizes proprietary software, a fiber optic transmission system, a telephone communications network, and other means of communication such as radio-links and phase loop communication systems. The SCADA system manages the wind farm in several domains. It functions as a state-of-the-art monitoring and diagnostic tool that optimizes the Project's operations. It allows for the remote start, stop, reset, and tag out for individual WTGs, thus minimizing the manpower and site visits needed to run the Project, and utilizes network interfaces to collect and analyze diagnostic information generated from the WTGs, meteorological towers, and substation. The SCADA system will also control the Project substation, allowing a fully centralized operation of the Project.

Data generated by the SCADA system will be used for optimizing operations and initiating, planning, and managing Maintenance Activities in line with manufacturer requirements, operational requirements, wind regime, and County Conditions of the Permit.

The controller at each WTG transmits operational data via fiber optic cables to data collection equipment. The communication cables will first run underground, buried in the same trenches used for the collection system lines. The fiber optic cables will be routed to the control room at the O&M facility as well as the wind farm substation. A redundant fiber optic connection will be provided to link the Project collector substation with the control center at the SCE Windhub Substation. This will be for protective relaying, status monitoring, and metering purposes.

4. Operations and Maintenance

4.1 Operation and Facility Maintenance Needs

There will be two types of roads required for the Project: temporary roads used during construction to access areas within the Project site, and permanent roads used during operations to access Project facilities for maintenance. The Project road network will have a larger footprint during construction because of the size of the equipment – especially the cranes required to erect the WTGs and the low boy trailers required to bring the nacelle, blades, tower and transformers to the site. Some of these roads may be removed and restored after initial construction; some may be reduced in size; and others may be maintained at their construction size for the life of the Project to allow for crane usage during operations and maintenance.

Temporary construction roads will make use of any applicable, existing permanent site roads along the WTG rows by temporarily widening these roads to approximately 40 feet. These traffic ways will be engineered and compacted to carry the weight of heavy cranes and delivery vehicles. Following completion of construction, the temporary part of these roads will be disked and re-vegetated, leaving approximately 20- to 24-foot wide permanent site roads.

4.2 Maintenance Activities, Including Road Maintenance

AWD will develop a Project Operations and Maintenance protocol to be implemented throughout the life of the Project. The protocol would specify routine turbine O&M, which typically adheres to the maintenance program developed by the turbine manufacturer. O&M personnel would conduct maintenance activities for wind turbines as required by the routine maintenance schedule provided by the turbine supplier or as required to keep the equipment in operation. On average, each turbine would require 40 to 50 hours of scheduled mechanical and electrical maintenance per year. Routine maintenance may include, but would not be limited to, replacing lubricating fluids, checking parts for wear and replacing, as required, and recording data from data-recording chips in all pertinent equipment including anemometers. O&M personnel would also inspect and maintain access roads, crane and turbine pads, erosion control systems, substation, transmission lines and perimeter fencing areas regularly and maintain them to ensure minimal degradation.

The wind turbines would also be monitored continuously by the Project SCADA system. Each turbine would be equipped with monitors that communicate major aspects of operation through communication lines. The SCADA system would send notifications to the operations group if operational characteristics deviate outside set limits. As described previously, the turbines would be equipped with an automatic braking system to shut down the turbines and slow or stop blade rotation in such an event. O&M personnel would address all operational deviations and place the equipment back in service in a safe and timely manner.

Project fencing will be provided, in accordance with Kern County zoning requirements. Based on current Kern County ordinances, the exterior boundary of the property or each wind turbine cluster or row may be fenced. All Project fencing requirements would be evaluated and the best-fit scenario would be incorporated into the Project based on the final determination by

Kern County. Additional security measures would be identified on an as-needed basis, and would fall under the control of the assigned operations and maintenance provider.

4.3 Operations Workforce, Equipment, and Ground Transportation

Up to approximately 15 full-time and part-time staff, including wind turbine technicians, operations personnel, administrative personnel and managers, would be employed to operate and maintain the Project. Staff would be responsible for implementing the proposed Project's Standard Operating Procedures, operating the SCADA system, and performing maintenance and repair work. Staff would also ensure that all permit conditions are implemented and complied with and be responsible for operating the proposed Project at maximum efficiency. Best management practices for wind energy facilities would be followed and all maintenance activities would be designed to maximize wind farm performance and maintain respect for the environment and the community.

Additionally, each WTG supplier would have personnel on the proposed Project site as necessary to perform warranty maintenance and operations services during the warranty period on the WTGs. These personnel may work out of an offsite office building in one of the local communities.

The routine O&M work would be performed by the O&M staff and would be conducted at the proposed Project site itself. When specialized equipment or expertise is required (i.e., cranes for major repairs, power line or substation repairs, etc.), the proposed Project would sub-contract with the appropriate contractors.

Standard operating procedures for wind energy facilities typically require maintenance to be performed every six or twelve months. The major WTG components would be inspected and tested once or twice per year depending on manufacturer's requirements. This servicing usually results in taking each WTG offline for one day at a time. Electrical equipment is inspected on a regular basis throughout the year without having to take any WTGs offline.

5. Environmental Considerations

This section identifies potential impacts resulting from the Project to a number of environmental resources. Preliminary mitigation measures are proposed for impacts that could be significant. While a formal environmental analysis will be required to determine the significance of any impacts resulting from the Project, it is anticipated that impacts from resource areas discussed here will either be less than significant, or reduced to a less-than-significant level with mitigation. The following topics are discussed in this section:

- Special-status or sensitive species and habitats
- Special land use designations
- Cultural and historic resource sites and values
- Native American Tribal concerns
- Recreation and OHV conflicts
- Visual Resource Management (VRM) designations
- Aviation and/or military conflicts
- Other environmental considerations including:
 - Air quality
 - Geologic hazards and soils
 - Noise
 - Paleontological resources
 - Socioeconomics and environmental justice
 - Water resources

In 2005, the BLM released the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM Wind Energy PEIS). This document includes mitigation measures for a number of resource areas, including most of the topics discussed in this section. Because a portion of the proposed Alta East Project would occupy land managed by BLM, mitigation measures from the BLM Wind Energy PEIS, as applicable, as well as BMPs listed in BLM ROW grants received by the Applicant on nearby wind development projects, are included among the measures identified to mitigate potential impacts from the Project. These measures are listed in Appendix B.

5.1 Special or Sensitive Species and Habitats

AWD will plan and implement all aspects of the Alta East Wind Project with the intent of avoiding or minimizing impacts, to the extent practicable, from any new infrastructure to special-status plants and wildlife species and sensitive natural communities.

A variety of biological surveys have been completed by CH2M HILL, Sundance Biology, Inc. (Sundance), Phoenix Ecological Consulting (Phoenix), Western EcoSystems Technology, Inc. (WEST), Garcia and Associates (GANDA), Sycamore Environmental Consultants, Inc. (Sycamore), M.H. Wolfe and Associates (MHWA), and Bill Vanherweg from 2006 to the present to establish an understanding of the Project site from a biological perspective and to enable AWD to plan the Project in a manner that would minimize impacts to ecological resources.

BLM, CDFG, and U.S. Fish and Wildlife Service (USFWS) were consulted in finalizing the biological study protocols. AWD will continue to revise the proposed wind energy facility and transmission line layouts and plans in order to avoid, minimize, or mitigate impacts to sensitive environmental resources. Environmental resource issues associated with this Project are presented in the following sections, along with recommended mitigation and best management practices (BMPs). Information on special-status plant and wildlife species and sensitive natural communities in Kern County was gathered from the USFWS (USFWS, 2010), USFWS critical habitat information, BLM's Final Environmental Impact Report and Statement for the West Mojave Plan (BLM, 2005), and searches of the CDFG California Natural Diversity Data Base (CNDDDB) (CNDDDB, 2010) and California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2010) for the Project site and surrounding U.S. Geological Survey (USGS) 7.5 minute quadrangle maps (Mojave, Cache Peak, Mojave NE, Tehachapi NE, Sanborn, Bissell, Soledad Mountain, Willow Springs, Tylerhorse Canyon, Tehachapi South, Tehachapi North, Cinco, Cantil, California City North, California City South, Cross Mountain, Emerald Mountain, Loraine, Tehachapi NE and Monolith).

For the purpose of this evaluation, a species was considered to have special status if it met one or more of the following criteria:

- Currently listed as threatened or endangered under the federal ESA;
- Currently listed as rare, threatened, or endangered under the California ESA or the California Native Plant Protection Act;
- Proposed or candidate for listing as threatened or endangered under either the federal or California ESA;
- Included on the CNPS list of rare, threatened or endangered plants of California; or
- Included as a Kern County species of interest in the West Mojave Plan (BLM, 2005).

As stated previously, the Project was originally named and referred to as the Sun Creek Wind Project. Since the submittal of the Preliminary POD in May 2010, the boundary has undergone further refinement, the Project name has been changed to the Alta East Wind Project, and additional resources surveys have been conducted. It should be noted that surveys conducted between 2006 and September 2010 (see Appendices C1 to C10) were conducted within earlier versions of the Project boundary and refer to the original Project name. Site surveys for avian and bat use are currently underway within the current Project boundary. Figure 6-4 depicts the current Project boundary as well as the areas where biological surveys have been conducted. The following biological resource surveys have been conducted:

- **Summer 2010 Special-Status Species Surveys (CH2M HILL).** General surveys for special-status species, which were not already addressed by focused protocol surveys (i.e., Tehachapi slender salamander [*Batrachoseps stebbinsi*], loggerhead shrike [*Lanius ludovicianus*], American badger [*Taxidea taxus*], and coast horned lizard [*Phrynosoma coronata blainvillii*]). Results of this survey are included in Appendix C10.
- **Summer 2010 Waters of the State Delineation (CH2M HILL).** Delineated desert washes within the Project area. Results of this survey are included in Appendix C10.

- **Summer 2010 Burrowing Owl Surveys (Phoenix).** Surveys were conducted per the California Burrowing Owl Consortium's guidelines. Results of this survey are included in Appendices C3 and C4.
- **Summer 2010 Mohave Ground Squirrel Habitat Assessment (Bill Vanherweg).** An assessment of habitat suitability for Mohave ground squirrels (*Spermophilus mohavensis*) was conducted to identify areas that would require protocol surveys in 2011. Results of this survey are included in Appendix C10.
- **Spring and Summer 2010 Rare Plant Surveys (Sycamore and Garcia and Associates, respectively).** Protocol surveys conducted on foot within 50- to 100-foot-wide transects. Results of these surveys are included in Appendices C5 and C6.
- **2009 and 2010 Vegetation Mapping and General Wildlife Assessment (CH2M HILL).** Data review and pedestrian and vehicle surveys of Project area (CH2M HILL, 2010). Results of this survey are included in Appendix C9.
- **2009 and 2010 Desert Tortoise Survey (Sundance and Phoenix, respectively).** Presence/absence survey and delineation of desert tortoise (*Gopherus agassizii*) habitat as described in the USFWS 2009 and 2010 survey protocols. Results of these surveys are included in Appendices C2 and C3.
- **Summer 2009, Fall 2009, and Winter 2009-2010 Avian Use Surveys (WEST).** Fixed-point avian use surveys were implemented during the summer and fall of 2009 and winter of 2009-2010 to document species occurrence and relative abundance of birds in the Project area, as well as to characterize the type of use of the area by those species. A second year of avian use surveys is currently underway. Results of the completed survey are included in Appendix C7; results of the ongoing survey to be completed in 2011 will be provided to BLM, once available.
- **Summer 2009 to Summer 2010 Bat Acoustic Surveys (WEST).** Acoustic bat use surveys were conducted between July 7, 2009 and July 9, 2010. Results of this survey are included in Appendix C8.
- **2006 Mohave Ground Squirrel Survey (Bill Vanherweg).** Surveys were conducted within a small portion of the current Project area according to the California Department of Fish and Game Mohave Ground Squirrel Survey Guidelines. No Mohave ground squirrels were captured (MH Wolfe, 2006). Results of this survey are included in Appendix C1.

Surveys will be conducted in spring 2011 for the above species on Project lands that were not previously surveyed, as well as along the transmission route. Results of these surveys will be provided to BLM, once available.

5.1.1 Special-status wildlife

Site-specific information on avian, bat, and special-status species occurrence was collected beginning in 2006. These data will be used to minimize impacts of Project construction and operation to the extent practicable, by avoiding, minimizing, or mitigating impacts to sensitive environmental resources. The results of the surveys are provided in Appendices C7 to C10.

The CNDDDB search and literature review identified 17 additional special-status wildlife species known to occur within the Project vicinity but not recorded within the Project area. These species are listed in Table 5-1, together with other species that occur within the Project area including desert tortoise, loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*), and prairie falcon (*Falco mexicanus*). Bat acoustic studies and avian use surveys were conducted in the Project area in 2009.

TABLE 5-1
Special-status Wildlife Species with Potential to Occur in the Project Area

Scientific Name	Common Name	Federal Status	State Status*
Reptiles			
<i>Gopherus agassizii</i>	Desert tortoise	FT	ST
Amphibians			
<i>Batrachoseps stebbinsi</i>	Tehachapi slender salamander	None	ST
Birds			
<i>Athene cunicularia</i>	burrowing owl	BLM	SSC
<i>Aquila chrysaetos</i>	golden eagle	BGEPA/BLM	FP/WL
<i>Asio otus</i>	long-eared owl	BLM	SSC
<i>Buteo regalis</i>	ferruginous hawk	BLM	WL
<i>Gymnogyps californianus</i>	California condor	FE	SE/FP
<i>Falco mexicanus</i>	prairie falcon	BLM	WL
<i>Lanius ludovicianus</i>	loggerhead shrike	BLM	SSC
<i>Vireo belli pusillus</i>	least Bell's vireo	FE	SE
<i>Empidonax trailli</i>	willow flycatcher	None	ST
<i>Empidonax trailli extimus</i>	southwestern willow flycatcher	FT	ST
Mammals			
<i>Taxidea taxus</i>	American badger	None	SSC
<i>Myotis californicus</i>	California myotis	None	SSC
<i>Macrotus californicus</i>	California leaf-nosed bat	BLM	SSC
<i>Eptesicus fuscus</i>	big brown bat	BLM	None
<i>Antrozous pallidus</i>	pallid bat	BLM	SSC
<i>Pipistrellus hesperus</i>	Western pipistrelle	BLM	None
<i>Plecotus townsendii</i>	Townsend's big-eared bat	BLM	SSC
<i>Spermophilus mohavensis</i>	Mohave ground Squirrel	None	ST
<i>Perognathus inornatus inornatus</i>	San Joaquin pocket mouse	BLM	None
<i>Perognathus xanthonotus</i>	Yellow-eared pocket mouse	BLM	None
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	BLM	SSC

Notes:

Status Codes:

BGEPA = Bald and Golden Eagle Protection Act

BLM = BLM sensitive species

FE = Endangered under the Federal Endangered Species Act

FT = Threatened under the Federal Endangered Species Act

FP = Listed as a Fully Protected Species in the California Fish and Game Code

SE = Endangered under the California Endangered Species Act

ST = Threatened under the California Endangered Species Act

SSC = Listed as a Species of Special Concern by CDFG

WL = Watch list

5.1.2 Vegetation

Classification of the vegetation communities in the Project area are based on the Terrestrial Natural Community Types used by the CDFG’s Vegetation Classification and Mapping Program and CNDDDB (CDFG, 2003). Descriptions of these types included observations from the field reconnaissance surveys as well as information from the *Preliminary List of Terrestrial Natural Communities of California* (Holland, 1986) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995).

The Project site is located in a desert scrub ecoregion. Three general community types were identified in the Project area: creosote bush scrub; Mojave mixed woody scrub and California buckwheat scrub. Substantial overlap in species composition occurs among the community types and the boundaries are generally diffuse with gradual transitions between the mapped community types. Results of this survey are included in Appendix C9.

5.1.3 Special-status plants

The CNDDDB and CNPS searches, as well as the USFWS list of species for Kern County, identified special-status plant species known to occur in the general Project vicinity, but not recorded near the Project. BLM sensitive species with potential to occur within the Project vicinity were also identified. These species are listed in Table 5-2 and, based on the presence of potentially suitable habitat, have the potential to occur within the Project area. No special-status plant species were detected during the vegetation mapping.

TABLE 5-2
Special-status Plant Species with Potential to Occur in the Project Area

Scientific Name	Common Name	Federal Status*	CDFG/CNPS Status**
<i>Allium shevockii</i>	Spanish needle onion	BLM	--/1B
<i>Astragalus atratus</i>	Darwin Mesa milk-vetch	BLM	--/1B
<i>Astragalus geyeri</i>	Geyer’s milk-vetch	BLM	--/1B
<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	curved-pod milk-vetch	BLM-	--/1A
<i>Calochortus striatus</i>	alkali mariposa-lily	None	None/List 1B.2
<i>Canbya candida</i>	white pygmy –poppy	None	List 4.2
<i>Carlquistia muirii</i>	Muir’s raillardella [=tarplant]	BLM	--/1B.3
<i>Cymopterus deserticola</i>	desert cymopterus	BLM	--/1B.2
<i>Cymopterus ripleyei</i> var. <i>saniculoides</i>	Ripley’s cymopterus	BLM	--/1B.2
<i>Dedeckera eurekaensis</i>	July gold	BLM	R/1B.3
<i>Deinandra mohavensis</i>	Mojave tarplant	BLM	E/1B.3
<i>Enciliopsis covellei</i>	Panamint daisy	BLM	--/1B.2
<i>Erigeron aequifolius</i>	Hall’s daisy	BLM	--/1B.3
<i>Eriogonum kennedyi</i> var. <i>pinicola</i>	Kern buckwheat	BLM	--/1B.1
<i>Eriogonum contiguum</i>	Reveal’s buckwheat	BLM	--/2.3
<i>Eriophyllum mohavense</i>	Barstow wooly sunflower	None	None/List 1B.2
<i>Eschscholzia minutiflora</i> ssp. <i>Twisselmannii</i>	red rock poppy	None	None/List 1B.2
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia	None	None/List 2.2
<i>Lomatium shevockii</i>	Owens Peak lomatium	BLM	--/1B.3

TABLE 5-2
Special-status Plant Species with Potential to Occur in the Project Area

Scientific Name	Common Name	Federal Status*	CDFG/CNPS Status**
<i>Lupinus magnificus</i> ssp. <i>Magnificus</i>	Panamint Mountains lupine	BLM	--/1B.2
<i>Mimulus shevockii</i>	Kelso Creek monkeyflower	BLM	--/1B.2
<i>Monardella beneolens</i>	sweet-smelling monardella	BLM	--/1B.3
<i>Monardella linooides</i> ssp. <i>Oblonga</i>	flax-like (=Tehachapi) monardella	BLM	--/1B.3
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Endangered	Endangered/List 1B.1
<i>Petalonyx thurberi</i> ssp. <i>Gilmanii</i>	Death Valley sandpaper plant	BLM	--/1B.3
<i>Phacelia nashiana</i>	Charlotte's phacelia	None	List 1B.2
<i>Phacelia mustelina</i>	round-leaved phacelia	BLM	--/1B.3
<i>Phacelia novemillensis</i>	Nine Mile Canyon phacelia	BLM	--/1B.2
<i>Streptanthus cordatus</i> ssp. <i>Piutensis</i>	Piute Mountains jewel-flower	BLM	--/1B.2
<i>Viola aurea</i>	golden violet	--	--/2.2

Notes:

* BLM considers CNPS List 1 and 2 species as sensitive.

** CNPS List

- List 1 Plants rare, threatened, or endangered in California and elsewhere
- List 2 Plants rare, threatened, or endangered in California but more common elsewhere
- List 4 Plants of limited distribution – a watch list

Threat Code Extensions

- 1 Seriously endangered in California
- 2 Fairly endangered in California
- 3 Not very endangered in California

R – California rare species

5.1.4 Potential impacts

There is potential for the Project area to support the special-status wildlife and plant species listed in Tables 5-1 and 5-2. Impacts to special-status species within and surrounding the Project area could occur during construction and operation of the Project. Ground disturbance, vegetation removal, construction noise, human activity, and other construction-related activities have the potential to result in direct mortality and injury to special-status wildlife. Additional impacts of Project construction and operation that may occur include disturbance during breeding, loss of habitat, and disruption of migratory wildlife corridors. Loss of special-status plants also could occur. Degradation of sensitive habitats could result from introduction of invasive weeds during construction. It is anticipated that, with implementation of the mitigation measures discussed below, potential impacts to special-status plant and wildlife species will be minimized to less-than-significant levels.

5.1.5 Mitigation measures

Upon completion of all surveys and related analyses, appropriate site- and species-specific mitigation measures will be identified. If federally listed species are present in the Project vicinity, the BLM will consult with the USFWS as required by Section 7 of the ESA. A Biological Assessment could be required in addition to the assessment of impacts in the site-specific NEPA

document for the Project. Subsequently, formal consultation may be required that would result in a Biological Opinion issued by the USFWS. The Biological Opinion would specify reasonable and prudent measures and conservation recommendations to minimize impacts on the federal listed species at the site.

Additional mitigation measures will include, but may not be limited to, measures specified in the BLM Wind Energy PEIS, BMPs listed in BLM ROW grants received by the Applicant on nearby wind development projects, and applicable measures from the adjacent Alta-Oak Creek Mojave Project. All potentially applicable measures from the above references are listed in Appendix B. BLM mitigation measures pertain to the following phases of Project development: site monitoring and testing; construction; operation; and decommissioning. The BLM Wind Energy PEIS also includes best management practices and mitigation measures for Plan of Development and Project design; these activities are currently underway and are incorporate applicable BLM guidance. Upon completion of the biological resources assessment, applicable mitigation measures will be refined, and additional mitigation measures may be incorporated.

5.1.6 References

- Bureau of Land Management (BLM). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. January.
http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1-Chapter1_Bookmarks.pdf
- California Department of Fish and Game (CDFG). 2003. Vegetation Classification and Mapping Program and Natural Diversity Database.
<http://www.dfg.ca.gov/biogeodata/vegcamp/>
- California Natural Diversity Database (CNDDDB). 2010. Rarefind 3. Biogeographic Data Branch. California Department of Fish and Game.
- California Native Plant Society (CNPS). 2010. Inventory of Rare and Endangered Plants.
<http://northcoastcnps.org/cgi-bin/inv/inventory.cgi>
- CH2M HILL. 2010. Biological Resources Report for the Sun Creek Wind Project, Kern County, California. Prepared for Alta Windpower Development LLC. August.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game. Natural Heritage Program. Sacramento, California.
- M.H. Wolfe and Associates (MHWA). 2006. Mohave Ground Squirrel Trapping Results. Report. Submitted to MH Wolfe and Associates. August.
- Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society. Sacramento, California.
- U.S. Fish and Wildlife Service (USFWS). 2010. Federally Listed Threatened and Endangered Species which May Occur in Kern County, California.
<http://www.fws.gov/ventura/speciesinfo/>
- U.S. Fish and Wildlife Service (USFWS). 2010. Critical Habitat Mapper. <http://crithab.fws.gov/>

5.2 Special Land Use Designations

The Alta East Project site is located on approximately 3,200 acres of undeveloped state and federal land, approximately 2,083 acres of which are managed by BLM. See Figures 6-2a and 6-2b for distribution of private and federally managed lands within the Project site. The Project site is therefore subject to both federal and county land use policies and zoning restrictions.

Existing developments on the proposed site include rights-of-way for underground pipelines, underground portions of the Los Angeles Aqueduct, Southern California Edison power lines, Union Pacific Railroad (UPRR) railroad siding, and a Los Angeles Department of Water and Power transmission line easement.

BLM California Desert Conservation Area

The California Desert Conservation Area (CDCA), which was designated by Congress in 1976 through the Federal Land Policy and Management Act (FLPMA), covers 25 million acres of land. The BLM developed the CDCA Plan in 1980 and it serves as the land use guide for management of these public lands. The Alta East site is located within areas in the CDCA that are designated Multiple-Use Class L (Limited Use). This designation protects sensitive, natural, scenic, ecological, and cultural resource values. Public lands designated as Class L are managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished. Wind energy facilities may be allowed on land designated Multiple-Use Class L after NEPA requirements are met. As noted in the BLM guidance document for Wind Energy PODs, submittal of a POD to BLM is among the first steps in satisfying NEPA requirements for a wind energy development project.

The West Mojave Plan (WMP), approved in 2003, is a habitat conservation plan and federal land use plan that amends the CDCA Plan in two primary ways. First, it presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other sensitive plants and animals and the natural communities of which they are a part. Second, it provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. The Project area is not located within any Desert Wildlife Management Areas (DWMAs) or Areas of Critical Environmental Concern (ACECs) established by the WMP. However, it is located within the Middle Knob Motorized Access Zone (MAZ), identified in the WMP. Policies in the WMP also provide guidance in the addressing of special or sensitive status species and habitats (see Section 5.1 of this POD).

Applicable CDCA Plan and WMP goals and policies, and the Alta East Project's compatibility with applicable goals and policies, are listed in Table 5-3.

BLM land use designations for the Alta East Project area are depicted in Figure 6-5.

TABLE 5-3
Alta East Special Land Use Designations

Plan Element/Zoning District	Goal/Policy	Conformity
BLM-CDCA Plan		
Energy Production and Utility Corridors Element	<ol style="list-style-type: none"> 1. Fully implement the network of joint-use planning corridors 3. Identify potential sites for power plants 	The Project would be built in an area already developed for wind energy.
BLM-West Mojave Plan		
Middle Knob Motorized Access Zone (MAZ)	<ul style="list-style-type: none"> -Allow access to the Pacific Crest Trail; minimize conflicts with other uses. -Minimize real or potential impacts to sensitive species. -Avoid occupied habitat of Kern buckwheat -Provide adequate private property access and minimize land use conflicts. -Provide adequate access for maintenance of facilities (including fire protection). 	<p>The Project will not prevent access to the Pacific Crest Trail or conflict with any other designated recreational area/uses.</p> <p>Impacts to sensitive species will be minimized (see Section 5.1).</p> <p>The Project is not located within Kern buckwheat habitat.</p> <p>Land use conflicts will be minimized and private property access will be maintained.</p> <p>Propose plan includes access roads.</p>
Kern County General Plan		
Land Use, Open Space, and Conservation Element	<p>Goals:</p> <ol style="list-style-type: none"> 4. Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions as they affect energy development in Kern County. 6. Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment. 	The proposed Project will help the State of California and Kern County attain goals related to the development of alternative energy while minimizing to the fullest extent possible environmental effects.
Mojave Specific Plan		
Land Use Objectives and Policies	<p>Policy 3.1.3 - Development projects shall be consistent with the adopted Kern County Airport Land Use Compatibility Plan.</p> <p>Policy 3.2.4 - Continue to collaborate with the East Kern Airport District to ensure compatibility between airport operations and surrounding land uses through implementation of the adopted Airport Land Use Compatibility Plan (ALUCP).</p>	The Project will seek a determination of "No Hazard" from the FAA, and a navigation easement will be dedicated to East Kern Airport District, both per ALUCP (see Section 5.7).

Kern County General Plan

According to the Kern County General Plan (Kern County, 2007), the Project site is located in the Mojave Priority Area. The Alta East site has a land use designation of both Mineral and Petroleum and Resource Management. The Mineral and Petroleum land use classification is defined as an area which contains producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Uses for this classification include, but are not limited to: mineral and petroleum exploration and extraction, including aggregate extractions; extensive and intensive agriculture; mineral and petroleum processing (excluding petroleum refining); natural gas and geothermal resources; pipelines; power transmission facilities; communication facilities; equipment storage yards; and borrow pits. The Resource Management land use classification is defined as primarily open space lands containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. Uses for the classification include, but are not limited to: recreational activities; livestock grazing; dry land farming; ranching facilities; wildlife and botanical preserves; and timber harvesting; one single-family dwelling unit; irrigated croplands; water storage or groundwater recharge areas; mineral; aggregate; petroleum exploration and extraction; open space and recreational uses; one single-family dwelling on legal residentially zoned lots; land within development areas subject to significant physical constraints; State and federal lands which have been converted to private ownership. Kern County General Plan land use designations for the Alta East Project area are depicted in Figure 6-5.

Mojave Specific Plan

The easternmost portions of the Project site are within an area governed by the Mojave Specific Plan. Land use designations within the Mojave Specific Plan area are consistent with the Kern County General Plan. Policies relevant to the proposed Project require the County to review all development proposals within the Specific Plan area for consistency with the Kern County Airport Land Use Compatibility Plan and airport operations. The proposed Project's relationship to nearby airport operations is discussed in greater detail in Section 5.7.

Applicable General Plan policies the Alta East Project's compatibility with applicable policies are listed in Table 5-3.

5.2.2 Kern County Zoning Ordinance

The Alta East Project site is located within two Kern County zone districts and one combining district, each of which is described in the Kern County Zoning Ordinance (Kern County, 2009). The Limited Agriculture (A-1) district designates areas suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses. The Estate (E) district designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. Minimum lot size in this area is 20 acres.

The Wind Energy Combining District (WE) functions as a zoning overlay. Development in the WE district must be consistent with the requirements of the base zone district as well as any special standards and requirements outlined in the combining district. The Alta East site would require the WE combining district approval on the land where the wind turbines are located. The WE combining district implements the goal of the Kern County Board of Supervisors to

promote alternative energy. The district requires a conditional use permit for wind power facilities and establishes criteria for turbine siting. Approximately 300 acres of land will need to be rezoned to be consistent with the WE district.

Kern County zoning designations for the Alta East Project area are depicted in Figure 6-6.

5.2.3 Potential impacts

The following preliminary environmental analysis has been prepared to present an early determination of potential land use impacts associated with implementation of the Alta East Wind Energy Project. This analysis is based upon review of applicable BLM and Kern County plans and policies. In addition, this analysis relied on CH2M HILL staff's familiarity of application processing requirements for wind facilities on County-managed and BLM-managed land in Kern County. As stated previously, the Alta East site is located within areas in the CDCA that are designated Multiple-Use Class L (Limited Use). Because wind energy facilities may be allowed on land designated Multiple-Use Class L, potentially significant land use impacts are not expected. Based upon review of the Project against CEQA land use significance criteria, as applied by Kern County, the Alta East Project is not expected to result in any potentially significant land use impacts because of the following factors:

- The Project would not physically divide an established community.
- The Project would not, once all rezoning and permitting activities are complete, conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- The Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

5.2.4 Mitigation measures

Because no significant impacts or land use inconsistencies are anticipated, no site-specific mitigation measures are required. The Project would incorporate mitigation measures identified in the BLM Wind Energy PEIS as well as BMPs listed in ROW grants received by the Applicant on nearby wind development projects, the following of which refer specifically to land use:

- Wind energy projects should be planned to mitigate or minimize impacts to other land uses;
- Federal and state agencies, property owners, and other stakeholders should be contacted as early as possible in the planning process to identify potentially sensitive land uses and issues, rules that govern wind energy development locally, and land use concepts specific to the region;
- To plan for efficient land use, necessary infrastructure requirements should be consolidated whenever possible, and current transmission and market access should be evaluated; and
- Restoration plans should be developed to ensure that all temporary use areas are restored.

5.2.5 References

Bureau of Land Management (BLM). 1980. *California Desert Conservation Area Plan*. (Reprinted 1999).

Bureau of Land Management (BLM). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. January.
http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1-Chapter1_Bookmarks.pdf

Kern County. 2007. Kern County General Plan. <http://www.co.kern.ca.us/planning/gpe.asp>

Kern County. 2009. Kern County Zoning Ordinance.
<http://www.co.kern.ca.us/planning/kcord.asp>

5.3 Cultural and Historic Resource Sites and Values

CH2M HILL staff conducted an initial review of publicly available information regarding cultural and historic resources within the proposed Project site. A review was conducted of the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the National Register Information System (NRIS), which contains information regarding resources listed on the National Register of Historic Places (NRHP), and the California Historical Landmarks database, which is maintained by the California Office of Historical Preservation. The Cultural Resources Inventory Report (CRIR) for the Alta East Wind Energy Project is available in Appendix D.

There have been 18 previous cultural resources studies conducted within the Project site. An additional 22 studies have occurred within 1 mile of the Project site. As a result of these previous studies, 10 cultural resources have been previously documented within the Project site. An additional 17 resources are located within 1 mile of the Project site. A pedestrian survey of the area was conducted in Spring 2010. The cultural resources survey area is depicted in Figure 1 in Appendix D. A pedestrian survey of Project areas previously not accessible, as well as the transmission alternatives, will be conducted in spring 2011. Results of this survey will be provided to BLM, once available.

There are no known cultural resources within the Project site, or within 1 mile that are listed in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). The Alta East Project is not expected to impact historic properties or historical resources.

5.3.1 Potential impacts

Adverse effects on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of federal agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

Standards of significance for the proposed Project were determined from adopted standards from the following sources:

- *National Register Bulletin* (1995)
- CEQA Guidelines Appendix G (2002)
- *Kern County General Plan* (March 2007)
- *Kern County Environmental Checklist Form* (May 2005)

Adopted standards of significance that are applicable to cultural resources are provided in the CEQA Guidelines Appendix G (2002). Significance criteria considered for the cultural resources impact analysis are provided below.

The protection of cultural resources is governed by several federal laws and regulations, including the National Historic Preservation Act (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

For a complete discussion of applicable standards and regulations related to cultural resources, please see the CRIR, Appendix D.

California Register/National Register Status

A total of 15 sites were evaluated for inclusion in the California Register of Historic Resources (CRHR). These 15 resources recorded during the Alta East survey have been recommended not eligible for inclusion in the CRHR (by recommendation of CH2M HILL cultural resource specialist Clint Helton, RPA). Table 5-4 shows each site disposition and the CH2M HILL recommendations. A discussion of the eligibility of each site can be found in Appendix D.

TABLE 5-4
Sites Evaluated during the Alta East Archaeological Survey

Site Number	Site Description	NRHP/CRHR
15-321	Only two flakes were relocated in the site area; the area is within the old wind farm	Not eligible
15-1703	Mortars; one prehistoric flake tool	Not eligible
S-1	Multiple sections of wooden pipe	Not eligible
S-3	Cobble testing area and quarry	Not eligible
S-4	Can scatter	Not eligible
S-5	Can scatter	Not eligible
S-6	Can scatter	Not eligible
S-7	Can scatter	Not eligible
S-8	Can scatter	Not eligible
S-9	Can dump in 5 small ravines	Not eligible
S-10	Claim cairn	Not eligible
S-11	Prospect pit and fire ring	Not eligible
S-12	Small sparse scatter of flakes	Not eligible
S-13	Small obsidian scatter and one projectile point	Not eligible
S-15	Historic well, riveted pipe, cans	Not eligible

Potential for Buried Archaeological Resources

The current inventory has demonstrated that the survey area contains prehistoric and historical archaeological resources. Further, the geomorphological environment for the Project area is one of alluvial deposition. Therefore, it is theoretically possible, though considered fairly unlikely, that portions of the Alta East survey area may contain low-to-moderate potential for archaeological resources to have been buried through alluviation, colluviation, or Aeolian processes.

5.3.2 Mitigation measures

While the likelihood of presence of prehistoric and historical archaeological resources within the Project area has been determined to be low, cultural resources by nature tend to be buried resources and therefore inadvertent discovery during Project construction is a possibility. As with any ground-disturbing project, there remains a potential for the accidental discovery of buried cultural resources not detected through a surface inventory. If cultural resources or materials are discovered during ground-disturbing activities, the work in the vicinity of the discovery should cease and the area be protected until the find can be evaluated by a qualified archaeologist. Depending on the nature of the find, additional consultation with the State Historic Preservation Office (SHPO) or Tribal leaders may be necessary before work can resume in the area of the find. Specific mitigation measures are described in Appendix B.

5.4 Native American Tribal Concerns

AWD will work with BLM to solicit concerns and comments from Native American Tribes, groups or individuals having traditional ties to the Project area. The purpose of this work will be to assist the BLM in complying with their government-to-government consultation requirements of Section 106 of the National Historic Preservation Act and to assist with resource identification within the Project area.

On October 21, 2009, BLM distributed a letter to the following Native American Tribes and Tribal organizations, informing them of the activities related to the placement of meteorological towers on the Alta East Project site:

- Kern Valley Indian Council
- Tubatulabals of Kern Valley
- Nuui Cunni Interpretive Center
- Monache Intertribal Association
- Owens Valley Career Development Center

To date, BLM has received no formal response or indication of concern with regard to this notification. BLM will send a similar notification to the same organizations upon receipt of the POD, informing Tribes of the proposed wind energy Project. AWD will continue to work with BLM and the interested Native American community with an outreach program to ensure there is clear understanding of the proposed Project.

5.5 Recreation and OHV Conflicts

A portion of the Alta East Project site lies on public lands administered by the BLM, but does not intersect with any officially designated or identified BLM recreation areas (BLM, 2007). The

Cameron Ridge segment of the Pacific Crest National Scenic Trail passes within 2.0 miles of the northwestern portion of the Project area, north of SR 58. This national scenic trail is a continuous hiking and equestrian route extending along the crest of the west coast mountains from Canada to Mexico. The Pacific Crest National Scenic Trail is designated federally-owned open space for pedestrian and equestrian use only. Other nearby areas designated for hiking include Lone Tree Canyon, and Red Rock Canyon State Park, which are located approximately 12 and 17 miles northeast of the northeastern portion of the Project site, along SR 14.

Areas designated for off-highway vehicle (OHV) recreation are located in the same general area. Some trails extend to locations within approximately 5 miles of the northeast portion of the Project site; however the majority of officially designated OHV recreation areas are along the SR 14 and Randsburg-Mojave Road corridors. These locations are beyond 15 miles away from the Project site (Friends of Jawbone, 2008).

5.5.1 Potential impacts

The Project will result in the long-term conversion of public lands to an industrial use. As a result, recreational opportunities on these lands may be reduced through Project implementation. As stated above (and described in Appendix E), a segment of the Pacific Crest National Scenic Trail is located west of the Project site. No portion of this trail will be crossed by the Project or be required to be relocated. Because the site is not designated for recreational use, there are abundant public lands in the surrounding areas, and construction of a wind facility on the site is consistent with BLM policies, impacts will be less than significant.

5.5.2 Mitigation measures

Because no significant impacts are anticipated, no mitigation measures are required.

5.5.3 References

Bureau of Land Management (BLM). 2007. "Ridgecrest Field Office - Recreation." Online. <http://www.blm.gov/ca/st/en/fo/ridgecrest/recreation.html>.

Friends of Jawbone. 2008. Friends of Jawbone Off-Highway Vehicle Riding Areas and Trails Map.

5.6 Aesthetics

The Alta East Visual Resources Technical Memorandum is available in Appendix E. The BLM evaluates federally managed lands under its VRM system. An area's visual resources are assigned to the following management classes with established objectives:

- Class I: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- Class III: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

- Class IV: To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

A portion of the Alta East Project site is located on land managed by BLM. These lands have not been designated under the BLM's VRM system.

General Project area and Project site

The Project area is characterized visually by steep to moderate slopes that extend from the mountain foothills to the western edge of the desert floor, near the town of Mojave. Existing wind turbines are predominant in views toward the mountains, south of SR 58. Scrub brush is the predominant vegetation in the area.

The land on which turbines are proposed to be constructed is located along the eastern slopes of the Tehachapi mountain range. An unincorporated community of residences is located north of SR 58, east of and below the highest elevation within the Project site for which turbines are proposed. South of SR 58, turbines are proposed atop an escarpment that rises above the highway and the UPRR train tracks, which both run east/west in this location. The eastern portion of the Project site is closest to the town of Mojave, and turbines would extend southward, generally along the Los Angeles Aqueduct. With the exception of linear features (the aqueduct and transmission lines), lands managed by BLM north and south of SR 58 and along the Project site's western edge appear mostly undeveloped. The privately owned lands in the center and eastern edge of the Project site include residences, unoccupied buildings, and land used for storage of vehicles and other equipment.

The Project site is not located near any sensitive or protected viewsheds. It is also not located along a state-designated scenic route, although there are two nearby routes identified in the Kern County General Plan Circulation Element as eligible state scenic highways: SR 14 beginning north of Mojave and extending to US 395 and the Inyo County line; and SR 58 between Mojave and Boron (Kern County, 2007). Both of these routes are located east of the Project site, but turbines located within the eastern portion of the Project site could potentially be visible from the western extents of the eligible scenic routes. Wind turbines can be visible from as far away as 20 miles, depending on the height of the turbines, atmospheric conditions and lines of sight toward the Project from the surrounding landscape. Turbines associated with the Alta East Project could therefore be visible in views from within the town of Mojave, from residences and residential clusters nearby, and from hiking trails in the area, particularly the Cameron Ridge segment of the Pacific Crest National Scenic Trail, which passes within 0.5 miles of the northernmost portion of the Project site, north of SR 58. The group of viewers with the closest and most consistent view of the Project site will be motorists traveling along SR 58.

Key observation points are shown in Figure 1 in Appendix E and photos and simulations are shown in Figures 2 through 8 in Appendix E.

5.6.2 Potential impacts

The majority of the land on which Project turbines would be located is managed by the BLM. Because the Project would be located in an established wind resource area, and because no Visual Resource Management classification has been established by BLM in the Project area,

CH2M HILL was directed by BLM field office to base the analysis of impacts to visual resources on land use consistency.²

Federal lands within the Project area are categorized as Multiple-Use Class L (Limited Use). Public lands designated as Class L are managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished. The CDCA specifies that wind generation facilities may be allowed after NEPA requirements are met. It is expected that, as part of BLM's review of the proposed Project, an environmental analysis, in accordance with NEPA, will be prepared. Completion of the environmental review for the Project would result in NEPA requirements being met, which would allow development of wind energy facilities on Multiple-Use Class L lands as specified by the CDCA. Furthermore, the Project is located within the Tehachapi Wind Resource Area, an established wind development area, with existing wind development and several more wind projects proposed for development. Existing wind turbines are currently predominant in views toward the mountains west of Mojave; although development of the Alta East Project would alter the visual character of the Project site, the proposed development would be consistent with the industrial nature of surrounding wind projects, both existing and proposed. Because the Project is consistent with BLM's Multiple-Use Class L land use designation for the Project parcels and because there are existing turbines on adjacent lands, impacts to visual resources are not anticipated.

5.6.3 Mitigation measures

The BLM, in its Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (BLM, 2005), specified a number of BMPs that are intended to reduce visual impacts from wind energy projects on public aesthetic resources. These BMPs were incorporated into the proposed Project and are listed in detail in Appendix B.

5.6.4 References

Bureau of Land Management (BLM). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. January.

http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1-Chapter1_Bookmarks.pdf

Kern County. 2007. Kern County General Plan.

5.7 Aviation and/or Military Conflicts

The Alta East Project is located in the vicinity of a number of public, private, and military airport facilities. Aviation Systems, Inc. prepared an evaluation of the Alta East Project in relationship to potential aviation (including military) conflicts.

² As discussed in an April 26, 2010, meeting between Paul Rodriguez (BLM Realty Specialist, Ridgecrest Field Office), Robert Skaggs (Alta Windpower Development, LLC) and Josh Hohn (CH2M HILL). The Visual Resource Management system is the approach typically used by BLM to assess existing visual quality and assess changes to visual quality.

Airport land use compatibility

The Kern County Airport Land Use Compatibility Plan (ALUCP) requires the County to review all proposed development projects within the boundaries of the Mojave Specific Plan for consistency with airport activities (Kern County, 2008). The southeastern portion of the proposed Project is approximately 2.5 miles away from the Mojave Air and Space Port, and is subject to Airport Influence Area “C” according to the ALUCP. Height limits within this area are limited in accordance with Part 77 of FAA regulations and with the United States Standard for Terminal Instrument Procedures. Any project within this area that exceeds or may exceed Part 77 surfaces must notify the FAA. The ALUCP prohibits land uses within the Mojave Airport Influence Area that may produce hazards to aircraft in flight, including sources of electrical interference with aircraft communications or navigation. A Part 77 determination of “No Hazard” from the FAA may therefore be required by the Project. The proposed Alta East turbine layout is not within the ALUCP boundary; FAA permits will be solicited.

All development proposed within the Mojave Airport Influence Area must also dedicate a navigation easement to the East Kern Airport District, which operates the Mojave Air and Space Port. The terms of such easements generally authorize the right to fly in the airspace above FAA Part 77 surfaces for the property, restrict the height of structures, and permit access to the property for the removal of aeronautical marking of objects exceeding the established height limit.

The ALUCP also recommends that the military be notified for any discretionary application within the R-2508 Complex (described below), and that the military may opt to recommend conditions of approval to protect military operations within the complex.

Airports and flight paths in the vicinity of the Project site

The Mojave Air and Space Port, also known as the Civilian Aerospace Test Center, is located approximately 2.5 miles southeast of the Project site. Besides being a general-use public airport, Mojave has three main areas of activity: flight testing, space industry development, and aircraft heavy maintenance and storage. The Mojave Air and Space Port averages 48 flights per day (59% transient general aviation, 38% local general aviation, 1% commercial flights, 1% air taxi, and less than 1% military flights).³ The proposed Alta East turbine layout is not within the ALUCP boundary; FAA permits will be solicited.

The California City Municipal Airport is located approximately 10 miles east of the Project site. This airport is open to the public and has one runway. The California City Municipal Airport averages 102 flights per day (67% transient general aviation, 32% local general aviation, and less than 1% military flights).

The Mountain Valley Airport, a public airport used for glider operations and training, is located approximately 12.5 miles west of the Project site. This airport support the Skylark North Glider School, which performs glider flight training for civilians as well as for the US Air Force Test Pilot School, the National Test Pilot School, NASA, and others. The Mountain Valley Airport averages 137 flights per day (86% local general aviation, 12% transient general aviation, and 2% military flights).

³ Flight information for this airport and others reported in this section comes from AIRNAV (<http://www.airnav.com>), which reports current FAA numbers.

The Pontious Airport, located approximately 12.5 miles south of the Project site, is a privately owned facility with two runways. This airport has six single engine airplanes based in the field.

The Tehachapi Municipal Airport, a public general aviation airport, is located approximately 13 miles west of the Project site. This airport averages 30 flights per day (59% transient general aviation and 41% local general aviation).

The Rosamond Skypark is a privately owned and operated residential skypark located approximately 17 miles south of the Project site. This airport averages 41 flights per day (67% local general aviation and 33% transient general aviation).

5.7.2 Potential military conflicts

The Project site is within the boundaries of the Special Use Airspace of the Joint Service Restricted R-2508 Complex. This complex is considered an extension of the airspace for the military installations within the complex (i.e., Edwards Air Force Base, China Lake Naval Weapons Station, and Fort Irwin/National Training Center) and covers 20,000 square miles. The Project would also be located within the Isabella Military Operations Area. There are a total of four Military Training Routes (MTR) overlaying or proximate to Alta East: IR 200 and IR 425 are 4 by 4 nautical miles wide with a floor of 500 feet above ground level (AGL); IR 211 is 4 by 4 nautical miles wide with a floor of 200 feet AGL; and VR 1262 is 5 by 5 nautical miles wide with a floor of 200 feet AGL.

The Kern County ALUCP requires that notification of the Project be made because of its proximity to Edwards Air Force Base (within 25 miles) and China Lake Naval Air Weapons Station (within 75 miles).

The Project has the potential to impact Air Defense and Homeland Security radars associated with the Los Angeles Long Range Radar Site in Boron, California.

Preliminary analysis from Comsearch indicates the Project is unlikely to impact the NEXRAD (Next Generation Radar) WSR-88D (Weather Surveillance Radar 88 Doppler)⁴ radar operations.

As defined in the aviation evaluation, the following list of Alta East Sectors indicates the vertical AMSL limits of each listed procedure:

- Sector A -3141' AMSL-Mojave (MHV) CAT D Traffic Area ⁵
- Sector B -5079' to 5996' AMSL -MHV Departure Area

The Department of Defense (DOD) Office of Economic Adjustment prepared a Joint Land Use Study (JLUS) in September 2008, a collaborative planning effort between active military installations, surrounding counties and cities, and other affected agencies. The JLUS process is managed by the California Governor's Office of Planning and Research. The JLUS is not an adopted plan, but is rather a recommended set of compatibility guidelines that can be implemented by local jurisdictions, Native American tribal governments, agencies, and

⁴ There are 159 operational NEXRAD radar systems deployed throughout the United States and at selected overseas locations (NOAA, 2009). The maximum range of the NEXRAD radar is 250 nautical miles. The NEXRAD network provides information about severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal.

⁵ Category D is an aircraft approach criteria established by the Federal Aviation Administration pertaining to aircraft that travel at "a speed 141 knots or greater but less than 166 knots" on approach (FAA, 2009).

organizations to guide their future compatibility efforts. While the strategies in the JLUS are not mandatory obligations, they were developed with representatives of the stakeholders involved, thereby providing a set of strategies designed to meet local needs.

Upon receipt of a complete ROW application, BLM may initiate consultation with DOD on potential military airspace conflicts. The DOD would serve an advisory role in any consultation; BLM is ultimately responsible for the allocation of land uses on public lands. AWD has conducted consultation with Edwards Air Force Base and received a finding of No Impact.

5.7.3 Mitigation measures

Because a wind energy development project would have to meet appropriate FAA criteria, no adverse impacts to aviation would be expected. However, as stated in the BLM Wind Energy PEIS, developers should conduct pre-application consultations with the BLM and appropriate military representatives.

5.7.4 References

Kern County. 2008. Airport Land Use Compatibility Plan.

5.8 Air Quality

The Air Quality Technical Memorandum (Appendix F) is currently under development and will be provided to the BLM, upon completion in October 2010. The Project site is located in the northwestern portion of the Mojave Desert Air Basin (MDAB). This air basin covers most of California's high desert. The San Gabriel and San Bernardino Mountains lie to the south, separating it from the South Coast Air Basin. The Tehachapi Mountains to the northwest separate it from the San Joaquin Air Basin.

The Project site is under the local jurisdiction of the Kern County Air Pollution Control District (KCAPCD). The Clean Air Act established National Ambient Air Quality Standards for six pollutants: particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead. In addition, California established ambient air quality standards which may be more stringent than the federal standards. The KCAPCD attainment status for the ambient air quality standards are shown below in Table 5-5.

The primary pollutants of concern for KCAPCD are particulate matter and ozone because the area is not attaining the air quality standards for these pollutants. Therefore, the focus of the significance thresholds and impact assessment are on these pollutants. Emissions of oxides of nitrogen (NO_x) and reactive organic gases (ROG) are evaluated because these compounds are precursors to ozone formation.

The KCAPCD considers any project to be significant if operation of the project:

- Generates total emissions (direct and indirect) in excess of the thresholds of significance presented in Table 5-6;
- Causes or contributes to a violation of a California or National ambient air quality standard;
- Does not conform with applicable air quality plan(s); and/or

- Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) for acute and chronic exposure greater than or equal to 1.

TABLE 5-5
KCAPCD Attainment Status

Pollutant ¹	Averaging Time	California Standards		Federal Standards	
		Concentration ²	Attainment Status	Concentration	Attainment Status
O ₃	1-hour	0.09 ppm	Nonattainment	--	--
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment
CO	1-hour	20 ppm	Unclassified	35 ppm	Unclassified/ Attainment
	8-hour	9 ppm		9 ppm	
NO ₂	1-hour	0.18 ppm	Attainment	0.100 ppm	Unclassified
	Annual	0.030 ppm		0.053 ppm	
SO ₂	1-hour	0.25 ppm	Attainment	--	Unclassified
	24-hour	0.04 ppm		0.14 ppm	
	Annual	--		0.03 ppm	
PM ₁₀	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Unclassified/ Attainment
	Annual	20 µg/m ³		--	
PM _{2.5}	24-hour	12 µg/m ³	Unclassified	35 µg/m ³	Unclassified/ Attainment
	Annual	--		15 µg/m ³	

Notes:

¹ Ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀), fine particulate matter (PM_{2.5}).

² Concentrations are provided in parts per million (ppm) or micrograms per cubic meter (µg/m³).

Source: KCAPCD, 2009a and ARB, 2010

TABLE 5-6
KCAPCD Thresholds of Significance

Criteria Pollutant	Annual Threshold (tons/year)	Daily Threshold (pounds/day)
Oxides of nitrogen (NO _x) ^a	25	137 ^b
Reactive organic gases (ROG) ^a	25	137 ^b
Particulate matter (PM ₁₀)	15	NA

Notes:

^a NO_x and ROG are evaluated because these compounds are ozone precursors.

^b Threshold only applies to motor vehicle trips during operation (indirect source).

NA = Not applicable because a threshold has not been established.

Source: KCAPCD, 1999 and Kern County, 2006

Currently, no facility in the KCAPCD exceeds the cancer risk of 10 in 1 million or a hazard index of 1.0 (KCAPCD, 2009b). Also, no sensitive receptors (schools, daycare centers, playgrounds or medical facilities) are located within 1,000 feet of the Project site.

In addition, the following two greenhouse gas emissions questions will also be addressed within the air quality impact assessment.

Would the Project:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Kern County General Plan will be included in the assessment of the Project impacts on applicable air quality plans. The air quality section of the Land Use Element in the Kern County General Plan includes goals, policies and implementation measures addressing air quality issues. Policy 18 specifically applies to air quality in the desert region: "The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals."

5.8.1 Potential impacts

The potential air quality impacts from construction and operation of the Alta East Project are currently being evaluated. The methodology for assessing the impacts will be based on the Kern County *Guidelines for Preparing an Air Quality Assessment for Use in Environment Impact Report* (Kern County, 2006). Construction of the Project is expected to have the greatest potential for air quality impacts. Operation of the Project is expected to result in a net benefit to air quality by displacing fossil-fuel generated energy sources.

A more detailed analysis is currently underway in order identify/confirm potential impacts with regard to air quality. This additional analysis will be completed in October 2010, and will be provided to the BLM upon completion.

5.8.2 Mitigation measures

Mitigation measures will include, but may not be limited to, the measures identified in the BLM Wind Energy PEIS and in BLM ROW grants received by the Applicant on adjacent wind development projects in addressing air quality impacts on BLM-administered lands; these are described in Appendix B. Upon completion of the air quality impact assessment, additional mitigation measures may be incorporated.

5.8.3 References

California Air Resources Board (ARB). 2010. Ambient Air Quality Standards Chart. February 16. Available at: <http://www.arb.ca.gov/research/aaqs/aaqs.htm>.

Kern County Air Pollution Control District (KCAPCD). 2009a. Kern County APCD Attainment Status Chart. December 14. Available at: http://www.kernair.org/general_information.htm.

Kern County Air Pollution Control District (KCAPCD). 2009b. 2008 Annual AB2588 Air Toxics Report. March 12. Available at: http://www.kernair.org/general_information.htm.

Kern County Air Pollution Control District (KCAPCD). 1999. Guidelines for Implementation of the California Environmental Quality Act. July.

Kern County. 2006. Guidelines for Preparing an Air Quality Assessment for Use in Environment Impact Report. December.

5.9 Geologic Hazards and Soils

The Geological Resources Technical Memorandum is available in Appendix G. The Project site is located in the western part of the Mojave structural block within the Mojave Desert geomorphic province. The Mojave Desert is bordered on the southwest by the San Andreas Fault and the Transverse Ranges. It is bordered on the north and northeast by the Garlock Fault, the Tehachapi Mountains, and the Basin and Range. The Nevada state line and Colorado River form the eastern boundary. The San Bernardino-Riverside County line forms the southern boundary. The Mojave Desert is a Cenozoic feature, formed by movement along the San Andreas and Garlock faults. It is dominated by broad alluviated basins that are mostly aggraded surfaces receiving nonmarine continental deposits from adjacent uplands. The Project site is underlain by several thousand feet of Quaternary alluvium. Cretaceous quartz monzonite forms the basement of stratigraphic sequences around the Project site (LandAmerica Assessment Corporation [LAC], 2009). The quartz monzonite is overlain by Miocene-age volcanic rocks. A major volcanic center, Soledad Mountain, is located just east of the Project site. The estimated depth to bedrock at the Project site is approximately 1,000 to 3,000 feet below the ground surface (LAC, 2009). Surficial geology is shown in Figure 1 in Appendix G.

The Project site is located in an area rated Seismic Zone 4 by the Uniform Building Code (UBC). Of the rating system, Zone 4 has the highest seismic potential and projects constructed in this zone must meet relatively stringent seismic safety standards, as outlined in the California Building Code (CBC; 2001 edition) and UBC Zone 4 requirements. The northwestern boundary of the Project site is near the Garlock Fault. No earthquake has produced surface rupture along the Garlock Fault in historic times (although cracks opened along a short segment of the fault in 1952 due to the Kern County earthquake). However, there have been a few sizable quakes recorded along the Garlock fault zone. The most recent was a magnitude 5.7 on July 11, 1992 with an epicenter near the town of Mojave which was thought to have been triggered by the Landers earthquake two weeks earlier. At least one section of the fault has shown movement by creep in recent years. According to the Southern California Earthquake Data Center (2009), these facts, along with the freshness of scarps from previous ruptures, and on-going seismicity associated with the fault zone, leave little doubt that the Garlock fault zone will rupture again in the future. Major Faults in the vicinity of the Alta East Project area are depicted in Figure 1 in Appendix G.

According to the U.S. Department of Agriculture Soils Conservation Service, soils that generally underlie the Project site include the Arizo, Cajon, and Cinco sands and gravels. (LAC, 2009). Soils of this type have rapid permeability and minimize flood hazards.

5.9.1 Potential impacts

Ground rupture

The northwest extent of the Project site crosses the Garlock Fault and lies within the Alquist-Priolo Special Study Zone.

Ground rupture and ground failure could occur within 500 feet on an active trace of the Garlock Fault. The potential for ground rupture to occur at the site is high. Damage to wind turbines and Project facilities could occur from an earthquake event that causes ground rupture.

Seismic shaking

The Project area has experienced seismic activity with strong ground motion during past earthquakes, and it is likely that strong earthquakes causing seismic shaking will occur in the future. The significant geologic hazard at the Alta East site is strong ground-shaking due to an earthquake. Ground shaking from a magnitude 8.0 earthquake could occur within an approximately 50-mile radius of the site (SEI, 2008).

The controlling fault affecting the Alta East site is the Garlock Fault that is present through the northwest portion of the site. The Garlock Fault is a near vertical shear zone with a slip rate of approximately 6 millimeters per year with a maximum credible earthquake (MCE) event of 7.3. A geotechnical evaluation was performed at the Terra-Gen Alta-Infill project site, located approximately 7 miles to the southwest. The evaluation determined that the Garlock Fault was capable of generating a peak bedrock acceleration (PBA) of 0.55g based on the MCE event of 7.3 (SEI, 2008). It is expected that the PBA would be similar at the Alta East Project site, but should be assessed from site-specific geotechnical evaluation for the Project site. Other faults that are located within a 50-mile radius of the site are capable of generating a PBA range of 0.10g to 0.22g (SEI, 2008).

However, given the proximity of the Project to the Garlock Fault, and the potential regional seismic activity, structural damage could occur. As a result, seismic hazards are considered potentially significant and mitigation would be required.

Liquefaction

The lithology at the Alta East site predominantly consists of dense decomposed granitic material and rock. In addition, the depth to water at the site is approximately 40 feet bgs. The Project area has not been identified by Kern County as an area that is subject to liquefaction hazards (Kern County, 2007). The potential for liquefaction to be a hazard at the site is considered to be negligible.

Subsidence/settlement

Based on a review of the geologic setting in the Project site area, the lithology present in the subsurface appears to have a low potential for settlement or subsidence. This assessment should be confirmed by a review of the lithology from site-specific borings drilled in support of the geotechnical evaluation for the site.

Expansive soils

The soil present at the site are primarily sands, gravels and rock that typically would not exhibit shrink and swell characteristics. Clays and other fine grained soils are not expected to be common at the Project site area. As a result, the potential for expansive soils to be present that

the site is low. This assessment should be confirmed by a review of the lithology from site-specific borings drilled in support of the geotechnical evaluation for the site.

Geological resources of recreational, commercial, or scientific value

According to the maps of the State of California Division of Oil, Gas and Geothermal Resources (DOGGR, 2010), there are no oil or gas well fields or reserves that are in the Project vicinity.

At the Project site, information obtained from the Kern County Engineering and Survey Services Department and the California Division of Mines and Geology indicated no active or abandoned mines on the Alta East property (LAC, 2009). An inactive quarry was identified adjacent north of Property Section 28. The former quarry was used to surface mine aggregate materials for roads, etc. Based on the lack of identified concerns related to mining on the Property, it is considered likely that the area of "disturbed land" is associated with earth works operations for the former aqueduct channel which runs through the southeast corner of Section 26. No evidence of mine tailings or waste was observed on the Property during LAC's reconnaissance (LAC, 2009).

In summary, compliance with the 2007 CBC requirements will reduce the exposure of people to the risks associated with large seismic events and ground rupture to less than significant levels. In addition, major structures will be designed to withstand the strong ground motion of a Design Basis Earthquake (DBE), as defined by the 2007 CBC. By complying with CBC standards, impacts associated with geologic hazards will be less than significant.

5.9.2 Mitigation measures

To address potential impacts related to geologic hazards, several recommended mitigation measures are proposed and are described in Appendix B.

5.9.3 References

California Building Standards Commission. 2007 California Building Code, California Code of Regulations. Based on 2006 International Building Code.

California Division of Oil, Gas, and Geothermal Resources (DOGGR). 2010. Oil and Gas Field Maps. Available online: <http://www.consrv.ca.gov/dog>. Website accessed May 2010.

Kern County. 2007. *Kern County General Plan, Safety Element*. March. Available online: <http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp4Safety.pdf>.

LandAmerica Assessment Corporation (LAC). 2009. *Environmental Site Assessment Report, BLM Sun Creek, Parcels 224-241-28; 224-242-10; 224-281-03, Kern County, California, 93501*. February 9. Unpublished. Prepared under contract to Alta Windpower Development, LLC.

Soils Engineering Inc. (SEI). 2008. *Limited Feasibility Level Geological and Geotechnical Evaluation for the Proposed Alta-Oak Creek Mojave Project, Near Mojave, California*. October.

5.10 Noise

The Noise Analysis Technical Memorandum (Appendix H) is currently under development and will be provided to the BLM upon completion in October 2010.

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness (or amplitude) of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale⁶ is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all pitches (sound frequencies) within the entire spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The dBA or A-weighted decibel refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. Most people sleep at night and are very sensitive to noise intrusion at that time. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the "daytime" of 7:00 a.m. to 10:00 p.m. and the "nighttime" of 10:00 p.m. to 7:00 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average that includes both an evening and nighttime weighting.

Noise standards and guidelines

The most significant sources of noise-producing activities within Kern County are the circulation and transportation systems, such as roadways, airports, and railroads. Additional noise sources include industrial operations, mining, and recreational activities. The site is near Highway 58 (to the north) and Highway 14 (to the east). Mojave Air and Space Port is located approximately 2.5 miles southeast of the Project site. All of these tend to increase ambient background noise in the area.

Kern County General Plan

The Kern County General Plan Noise Element establishes goals and policies for development near noise sensitive areas. The following land uses have been identified by the County as possible noise sensitive receptors:

⁶ Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable notation.

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas
- Churches

The General Plan's noise policies seek to ensure that the residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained. This goal is achieved through the implementation of several policies discussed below. First, the Noise Element encourages vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise. Second, the Noise Element prohibits new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the Project design. Such mitigation should be designed to reduce noise to 65 dB Ldn or less in outdoor activity areas and 45 dB Ldn or less within interior living spaces or other noise sensitive interior spaces. Finally, the Noise Element ensures that new development in the vicinity of an airport will be compatible with existing and projected airport noise levels as set forth in the ALUCP.

Kern County Municipal Code

The Kern County Municipal Code establishes noise development standards and guidelines for wind energy developments (Kern County Municipal Code 19.64.140). The Municipal Code requires preparation of an acoustical analysis when a residence, school, church, public library or other sensitive land uses are located within one mile downwind, or within a half mile in any other direction, from a project.

The Municipal Code highlights specific thresholds for wind turbine operations. A wind turbine development that causes the audible exterior noise level to exceed 45 dBA for more than five minutes out of a one-hour time period or to exceed 50 dBA for any period of time when measured within 50 feet from any existing residence, school, hospital, church, or public library will not be permitted. In the event that audible noise resulting from wind turbine operation contains a steady pure tone, the standards for audible noise should be reduced by 5 dBA. In the event that the audible noise resulting from wind turbine operation contains repetitive impulsive sounds, the standards for audible noise should be reduced by 5 dBA. In the event that the audible noise resulting from wind turbine operations contains both a pure tone and repetitive impulsive sounds, the standard for audible noise should be reduced by a total of 5 dBA.

The Kern County Municipal Code prohibits construction at night (9:00 pm to 6:00 am) on weekdays or at night (9:00 pm to 8:00 am) on weekends if noise would be audible 150 feet from the construction site and the construction site is within 1,000 feet of an occupied residence (Kern County Municipal Code 8.36.020).

5.10.2 Sensitive receptors

The nearest sensitive receptors (residences) to the Project site are less than one mile away, and are located to the north and south of the Project.

5.10.3 Potential impacts

During construction, various types of common heavy construction equipment will be used that will result in a temporary increase in noise levels. A technical noise analysis assessing the

potential Project impacts in accordance to federal and local standards is currently underway. The technical noise analysis will be submitted to BLM in fall 2010, prior to Project approval.

5.10.4 Mitigation measures

Mitigation measures will include, but may not be limited to, the measures listed in Appendix B and identified in the BLM Wind Energy PEIS and in existing BLM ROW grants received by the Applicant on adjacent wind projects in addressing noise impacts on BLM-administered lands.

5.10.5 References

Kern County. 2005. *Kern County Municipal Code*.

Kern County. 2007. *Kern County General Plan*.

5.11 Paleontological Resources

The Paleontological Resources Technical Memorandum is available in Appendix I. The local geology of a project area determines its paleontological potential. This site is dominated by alluvial material derived from erosion of the adjacent highlands, and granitic bedrock of the Tehachapi Mountains (LAC, 2009). Generally, the site is composed of sand, gravel, and cobbles with very little to no fine-grained soils. Cretaceous quartz monzonite forms the basement of stratigraphic sequences in the Mojave Block in the vicinity of the Project area. The quartz monzonite is overlain by Miocene-age volcanic rocks (LAC, 2009) in a few areas, and by late Miocene and Quaternary sediments elsewhere.

While good information on the bedrock geology of the Project area is available (Dibblee, 1967; LAC, 2009; and Smith, 1964), Quaternary and surface sediments are not mapped in detail. A review of remote imagery failed to identify any lineaments or other features such as spring mounds that might indicate the presence of paleospring deposits in the area (see Quade et al., 1995). Fresh exposures of relative old Quaternary alluvium, some with volcanic ash or other fine-grained high-albedo sediment, were in evidence along the Garlock Fault, however.

Absence of marble pendants indicates that caves and rock shelters are generally absent, and therefore the potential of locating Pleistocene packrat middens (e.g. Cole, 1983) is very low.

Paleontological records searches have been performed over the last year for a number of projects in the vicinity. Those consulted for this Project include a records review by the San Bernardino County Museum (SBCM) for a geologically similar area immediately to the south and west. No fossil records were identified in the Project area. This is consistent with a June 2010 records search using the SBCM's on-line paleontological database tool (SBCM, n.d.). However, the SBCM database has no paleontological localities at all recorded in Kern County which indicates that it may not be updated for this county. Querying the University of California Museum of Paleontology online database (UCMP, n.d.), however, yields 1,620 fossil locality records for Kern County. Many of these are far from the current Project area, including such famous locales as Shark Tooth Hill near Bakersfield and the McKittrick Tar Pits on the other side of the Central Valley. However, there are a number of fossil localities recorded for the Horned Toad Formation in the Horned Toad Hills within and adjacent to Section 34 (Figure 1 in Appendix I). These localities appear to lie within the Project area to the extent that development is planned.

Other than those from the Horned Toad Formation, there are no paleontological records from any geologic unit occurring within or close to the Project area.

5.11.1 Potential impacts

Appendix I contains a full description of the paleontological sensitivity of the geologic units in the Project area, based on a previous literature and records review. Overall, the geologic units in the Project area contain a BLM Potential Fossil Yield Classification (PFYC) Class 1, 2, and 5a.

The potential for construction activities to impact significant paleontological resources is dependent on the type of activity and the paleontological sensitivity of each unit. Excavations in geologic units of high sensitivity, such as the Horned Toad Formation, have a relatively high chance of encountering significant fossils, while excavations in geologic units of low sensitivity, such as intrusive igneous or igneous basement rocks, have little to no chance of encountering significant fossils. The impacts of excavation on paleontological resources can be mitigated by relocating the excavation, or by extracting the fossil(s). Because proper excavation and removal of paleontological resources does not lessen the scientific value of the resources, excavation is the recommended method of mitigation of paleontological resources in the Project area.

Activities that do not involve excavations or other subsurface disturbance do not affect fossils buried in the sediment. Fossils not impacted by excavation are considered to be preserved; therefore paleontological resources are generally not impacted during the operation or maintenance of wind turbines. The mitigation measures below are applicable only to the construction phase of the Project when adverse impacts are most probable.

The geology in the Project area is shown in Figure 1 in Appendix I. The Project is underlain by the high-sensitivity Horned Toad Formation, Quaternary alluvium of unknown sensitivity, and low-sensitivity Holocene alluvium, Tertiary rhyolitic felsite, and older basement rock. Excavations in the central portion of the site, and in other areas underlain by the Horned Toad Formation (shown in Figure 1 in Appendix I), are very likely to disturb significant paleontological resources.

Transmission line alternatives

Three possible transmission line alternatives (shown in Figure 1 in Appendix I) are also proposed for this Project. They predominantly cross units similar to those which underlie the Project.

Alternative A generally crosses the high sensitivity Horned Toad Formation, then terrace gravel, and then the low sensitivity Younger and Older Alluvium.

Alternative B runs generally north to south, and crosses the Horned Toad Formation in the north. The remainder of the line is underlain by Younger and Older Alluvium. Paleontological sensitivity generally decreases from north (the Horned Toad Formation) to south (Holocene alluvium).

Alternative C is underlain entirely by low-sensitivity Younger Alluvium. Older Alluvium may be encountered below the younger sediment near the Project.

5.11.2 Mitigation measures

To address potential impacts related to paleontological resources, the mitigation measures have been identified and are listed in Appendix B. Coordination with BLM to conduct a field inventory is currently underway. The results of the field inventory will be provided to BLM, once available in early 2011.

5.11.3 References

Cole, K.L. 1983. "Late Pleistocene vegetation of Kings Canyon, Sierra Nevada, California." *Quaternary Research* 19: 117-129.

Dibblee, T. W., Jr. 1967. *Areal geology of the western Mojave Desert*. U. S. Geological Survey Professional Paper 522. Denver, CO.

LandAmerica Assessment Corporation (LAC). 2009. Environmental Site Assessment Report, BLM Suncreek, Parcels 224-241-28; 224-242-10; 224-281-03, Kern County, California, 93501. February 9. Unpublished. Prepared under contract to Alta Windpower Development, LLC.

Quade, Jay, M. D. Mifflin, W. L. Pratt, W. McCoy, and L. Burckle. 1995. "Fossil spring deposits in the southern Great Basin and their implications for changes in water-table levels near Yucca Mountain, Nevada, during Quaternary time." *Geological Society of America Bulletin* 107:213-230.

San Bernardino County Museum (SBCM) n. d. Search Museum Collections; Geology - Paleontology. Online: <http://sbcounty.gov/museum/search/default.asp>

Smith, A. R. 1964. *Geologic map of California, Bakersfield Sheet*. Scale 1:250,000. California Division of Mines and Geology, Regional Geologic Map Series. Sacramento.

University of California at Berkeley Museum of Paleontology (UCMP) n. d. UCMP Locality Search. Online: <http://ucmpdb.berkeley.edu/loc.html>

5.12 Socioeconomics and Environmental Justice

Kern County had an estimated population of 800,458 people in 2008. Of the estimated population, Hispanic ethnicities make up 48 percent, Caucasian ethnicities 36 percent, African-Americans 6 percent, and Asian ethnicities 4 percent (US Census Bureau, 2010). As of the 2000 census, Kern County had a labor force of 267,603 and an unemployment rate of 6.7 percent. The median household income was \$35,446. The three main employment sectors for the county include education, health, and social services (20 percent); agriculture, forestry, fishing, hunting, and mining (12 percent); and retail (11 percent). Additional industries that account for County employment include: construction, manufacturing, wholesale trade, transportation, information, finance, and public administration (US Census Bureau, 2000).

The Alta East Project would require approximately 12 months of construction with a peak construction workforce of approximately 150 to 250 workers. The majority of construction workers are expected to come from an acceptable commute distance from places within Kern County and from neighboring counties such as the cities of Lancaster and Palmdale. Operation of the Project would require a small number of employees.

5.12.1 Potential impacts

The Project is not likely to cause adverse socioeconomic impacts. Because the construction period would be relatively short and there is sufficient workforce within an acceptable commuting distance, no significant relocation of construction workforce is expected. Since operation of the Project would require a small number of employees any additional increase in population related to permanent employment would be negligible. In addition, the increase in income and property taxes from implementation of this Project would provide financial benefits to Kern County. The Project is also not likely to cause environmental justice impacts since no impacts are likely to fall disproportionately on minority and/or low-income members of the community.

5.12.2 Mitigation measures

Because no significant impacts are anticipated, no mitigation measures are required.

5.12.3 References

U.S. Census Bureau. State and County Quickfacts. Last revised Tuesday, February 23, 2010. Online. <http://quickfacts.census.gov/qfd/states/06/06029.html>

U.S. Census Bureau. Census 2000 Summary File 3. Online. http://factfinder.census.gov/servlet/QTable?_bm=y&-qr_name=DEC_2000_SF3_U_DP3&-ds_name=DEC_2000_SF3_U&-lang=en&-sse=on&-geo_id=05000US06029

5.13 Water Resources

The Alta East site is located in the Antelope Valley Groundwater Basin, within the South Lahontan Hydrologic Region. The Antelope Valley Basin underlies an elongated east-west valley that is bound on the northwest by the Garlock Fault Zone, on the west by the San Andreas Fault Zone, on the east by ridges, buttes, and hills that form a surface and groundwater drainage divide, and on the north by the Fremont Valley Groundwater Basin. The primary waterbearing units are Pleistocene and Holocene unconsolidated alluvium and lacustrine deposits that consist of compacted sand, gravel, silts, and clay. Coarse alluvium deposits form the two main aquifer units in the Basin. The upper aquifer is the primary source of drinking water for the valley area. Groundwater in the Basin historically has flowed northward from the San Gabriel Mountains and east and south from the Tehachapi Mountains. Depth to water in the upper aquifer ranges from 100 to 200 feet. There is no permanent surface water in the vicinity of the Project site; and the site is not situated over a sole source aquifer.

The Los Angeles Aqueduct, which carries water from the Owens Valley to the Los Angeles basin, crosses the Project site on a north-south axis. It is maintained by the Los Angeles Department of Water and Power.

The Kern County General Plan "Overlay Constraints: Flooding and Shallow Ground Water Map" does not reflect any flood hazards or shallow groundwater on the Project site.

5.13.1 Potential impacts

Water use during the operational phase of the Alta East Project would be minimal and impacts to water resources would be less than significant. During the construction phase, more water

would be required potentially impacting local water supplies. Any water that is needed for construction (such as water for dust suppression) would likely be trucked in from nearby municipalities, such as Mojave or Tehachapi, or from a new well. Construction could also result in potential impacts to water resources through soil disturbing activities that cause erosion, the alteration of surface runoff patterns, and chemical releases. There is also potential for hazardous material contamination caused by stormwater runoff or discharges of wastewater.

To minimize potential impacts, best management practices and Stormwater Pollution Prevention Plans (SWPPPs) will be implemented for construction activities. As the result of Project design features, conformance with regulatory requirements, and the implementation of mitigation measures noted below, impacts to water resources would be less than significant.

5.13.2 Mitigation measures

Mitigation measures will include, but may not be limited to, measures from the BLM Wind Energy PEIS and in existing BLM ROW grants received by the Applicant on adjacent wind projects in addressing potential impacts to water resources on BLM-administered lands; applicable measures are listed in Appendix B.

5.13.3 References

Kern County. 2007. Kern County General Plan. March 13.

6. Maps and Drawings

Insert Figures 6-1 through 6-6

Engineering Drawings

Appendix A:
Assessor Parcel Numbers in Alta East Project Area

TABLE A-1

List of Property Owners

APN	Township	Range	Section	OWNER	CARE OF	STREET	STREET 2	CITY	STATE	ZIP CODE
Project Site										
22435213	32 S	35 E	33	Barnes, Lonnie		7377 LINDSEY AVE		PICO RIVERA	CA	90660
22436404	32 S	35 E	33	BARONE ANTHONY JR & MARY C TR		2118 ELLEN AVE		SAN JOSE	CA	95125
22436312	32 S	35 E	33	BIANCHINI FAMILY TRUST	JOYCE L	185 BROOKWOOD RD		WOODSIDE	CA	94062
22541102	12 N	12 W	31	Bobbit, Janet		30015 Hawkset Street		Castaic	CA	91384
22541109	12 N	12 W	31	Bobbit, Janet		30015 Hawkset Street		Castaic	CA	91384
22435103	32 S	35 E	33	BREWER BRENT A		3121 W. COAST HWY,	8-C	NEWPORT BEACH	CA	92663
22435102	32S	35 E	33	California Leisure Time DELLA-ROCCO, Carol & MARSHALL		100 Arlington N U	340C	Reno	NV	89501
22436109	32 S	35 E	33	MARSHALL	HAWK TRUST	546 NW BONNIE CT		SALEM	OR	97304
22435115	32 S	35 E	33	CURCURU PHILIP TR		15956 S WOODSON DR		RAMONA	CA	92065
23725113	11 N	13 W	3	DODSON MARK D		4145 W. 163RD ST		LAWNDALE	CA	90260
22436107	32 S	35 E	33	DUBLIN IRENE & HERAMB LORA		5940 GLENLEA LN		SAN DIEGO	CA	92120
22436302	32 S	35 E	33	Espe	MATTHEW & STEPHEN	5054 TRENARY WAY		SAN JOSE	CA	95118
22436308	32 S	35 E	33	EZEOBIEJESI JUDE & DORIS		28565 TUPELO RD		MENIFEE	CA	92584
22436309	32 S	35 E	33	Feickert, Shirley		5753 Stone Mountain Ln		Westlake Village	CA	91362
22436406	32 S	35 E	33	FIELD SIDNEY TRUST		2440 S. BARRINGTON AVE	# 101	LOS ANGELES	CA	90068
22436112	32 S	35 E	33	FOULK PROTECTOR TRUST 2008	STEVENSON LINDA & FOULK RICHARD TRS	1013 HERITAGE DR		BULLHEAD	CA	86429
22436110	32 S	35 E	33	GALLARDO RAFAEL GLEDHILL KENNETH W & MARYON W		45684 GRACE ST # 2		INDIO	CA	92201
22435225	32 S	35 E	33	MARYON W		206 QUARRY LN		SANTA CRUZ	CA	95060
22436120	32 S	35 E	33	Hanzmann		28312 KLEVINS CT		SANTA CLARITA	CA	91387
22435105	32 S	35 E	33	Hart, John P Jr		5964 Oak River Dr		Tampa	FL	33615
22435204	32 S	35 E	33	HOGAN MALCOLM & CONSTANCE TRS	HOGAN CONSTANCE TRS	P.O BOX 8 4943 GULF GLEN RD		BONITA	CA	91908

TABLE A-1

List of Property Owners

APN	Township	Range	Section	OWNER	CARE OF	STREET	STREET 2	CITY	STATE	ZIP CODE
22436101	32 S	35 E	33	KING ARTHUR L & DEBORAH		1203 COLLEGE ST		CLEVELAND	MS	38732
22436301	32 S	35 E	33	LEE JOO SONG		263 STARLIGHT CREST DR		LA CANADA	CA	91011
22435101	32 S	35 E	33	Levin Family Trust	Crandall LINENBERGER	16691 Gothard St	Ste E	Huntington Beach	CA	92647
22435106	32 S	35 E	33	LINENBERGER DONALD & HELENE FAM TR	DONALD E & HELENE C TRS	5728 BURCK DR		CONCORD	NC	28027
22436402	32 S	35 E	33	Maruyama		32399 Sheffield Ln		Union City	CA	94587
22435212	32 S	35 E	33	Mc Pherson, Bruce		2000 Oak View Dr		Oakland	CA	94602
22424229	32 S	35 E	35	MOORE FAMILY TRUST	STEPHENSON ANNE M SUCC TRS / OAK CREEK ENERGY	213 4TH STREET SOUTH # 1		KIRKLAND	WA	98033
22435206	32 S	35 E	33	MORRIS FAMILY 1996 TRUST	MORRIS ROBERT & KATHLEEN TRS	P.O BOX 2137		CARMEL	CA	93921
22435203	32 S	35 E	33	NEWMAN PHYLLIS		78249 MELODY LN		PALM DESERT	CA	92211
22541101	12 N	12 W	31	OAK CREEK T M APC LAND CO LLC	RAYMOND STELLA	11512 El Camino Real	100	SAN DIEGO	CA	92130
22436114	32 S	35 E	33	OKURA STEVENS K. OLSEN MELVIN N & KRISTINE TR	OKURA TR	23982 OSWEGO ST		EL TORO	CA	92630
22435224	32 S	35 E	33	ORR FRANK R AND MARY L		20785 KREISLER CT		SARATOGA	CA	95070
22436108	32 S	35 E	33			6679 NAVEL CT		RIVERSIDE	CA	92506
22424205	32 S	35 E	27	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22424206	32 S	35 E	27	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22424207	32 S	35 E	27	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22424208	32 S	35 E	27	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435109	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435208	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435209	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435214	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168

TABLE A-1

List of Property Owners

APN	Township	Range	Section	OWNER	CARE OF	STREET	STREET 2	CITY	STATE	ZIP CODE
22435219	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435220	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22435223	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22436311	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22436313	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22436403	32 S	35 E	33	PACIFIC STATES LAND CO		P.O BOX 880088		SAN DIEGO	CA	92168
22436113	32 S	35 E	33	PETERS CRAIG A		10963 SAN MATEO PL		RANCH CUCAMONGA	CA	91701
22436315	32 S	35 E	33	PHAN HOANG X		7641 NANCY LANE		STANTON	CA	90680
22436102	32 S	35 E	33	QUAM FAMILY TR	QUAM WILLIAM R & CHRISTAL J TRS	338 DEVON WAY		STAR	CA	83669
22436316	32 S	35 E	33	Quam, Christal		338 DEVON WAY		STAR	CA	83669
22435222	32 S	35 E	33	REITER JOHN R		3557 FERNWOOD ST		ROSAMOND	CA	93560
22436303	32 S	35 E	33	ROMERO FAMILY TR	ROMERO MARIO C & CARMEN P TRS	5157 BARNETT LOOP RD		SHINGLE SPGS	CA	95682
22436103	32 S	35 E	33	SERMABEIKIAN GREGORY J		65 PALATINE	APT 236	IRVINE	CA	92612
22436115	32 S	35 E	33	SHATTUCK JUAN P		P.O. BOX 366		ISLETA	NM	87022
22435221	32 S	35 E	33	SKILLMAN E EDWARD J		4150 PERKINS RD		BATON ROUGE	LA	70808
22436314	32 S	35 E	33	Spiller		412 Rutherford Ave		Redwood City	CA	94061
22436116	32 S	35 E	33	SUSTAITA BERTHA MAE		15252 SENECA RD	SP# 319	VICTORVILLE	CA	92392
22435117	32 S	35 E	33	Thompson, Earl & Velma		6970 LOS TILOS RD		LOS ANGELES	CA	90068
22436104	32 S	35 E	33	Thompson, Earl & Velma		6970 LOS TILOS RD		LOS ANGELES	CA	90068
22436305	32 S	35 E	33	Thompson, Earl & Velma		6970 LOS TILOS RD		LOS ANGELES	CA	90068
22435205	32 S	35 E	33	TOLEDO TONY & CARIDAD G		11372 WOODBURY RD		GARDEN GROVE	CA	92843
22435218	32 S	35 E	33	TOLLE ELAINE M		9360 PAGODA WY		RENO	NV	99506

TABLE A-1

List of Property Owners

APN	Township	Range	Section	OWNER	CARE OF	STREET	STREET 2	CITY	STATE	ZIP CODE
22436401	32 S	35 E	33	TOUVE TIMOTHY B		21 CALLE COTURNO		RANCHO SANTA MARGARITA	CA	92688
22462001	32 S	35 E	35	TRIGGS WILLIAM	MOORE ANSON JR	2837 BAKERS ST		SAN FRANCISCO	CA	94123
22424128	32 S	35 E	26	U S A						
22424210	32 S	35 E	34	U S A						
22428103	32 S	35 E	28	U S A						
22428105	32 S	35 E	32	U S A						
22429101	12 N	13 W	34	U S A						
22435226	32 S	35 E	33	University of Judaism		15600 Mulholland Dr		LOS ANGELES	CA	90077
22436117	32 S	35 E	33	Wong Family Trust		315 S. Kingsford St		Monterey Park	CA	91754
Transmission Line										
22541109	12 N	12 W	31	Bobbit, Janet		30015 Hawkset Street		Castaic	CA	91384
22541202	12 N	12 W	31	ETSR Prop LLC		1450 Forest Knoll Dr		Los Angeles	CA	90069
42704104	11 N	12 W	6	Vallas, Charles		6848 Industrial Ave		Port Ritche	FL	34668
42704102	11 N	12 W	6	Gold, Larry		17935 Canyon Cove		Granada Hills	CA	91344
42704107	11 N	12 W	6	Simmerman, Larry		1449 Shimabukuro	Kitanakag usuku- son	Okinawa 904-2301	Japan	
42704105	11 N	12 W	6	Pellicci, Carmine		714 Pier Ave	Apt 1	Santa Monica	CA	90405
42704108	11 N	12 W	6	Esser, Gary		12206 Willow Springs Drive		Moorpark	CA	93021
42704113	11 N	12 W	6	Alaman, Domingo		17865 Vine Street		Fontana	CA	92335
42704115	11 N	12 W	6	Halekakis, Michael & Gina		25487 Cariz Drive		Valencia	CA	91355
42704116	11 N	12 W	6	Biton, Uzi		Maharitz 53/1			Israel	
42704117	11 N	12 W	6	Alta Windpower Dev		11512 El Camino Real Suite 100		San Diego	CA	92130
42705101	11 N	12 W	6	Egbert, Clifford		838 2nd street		Santa Monica	CA	90403
42705117	11 N	12 W	6	Alforque, Andrea		4450 Wilson Ave # 7		San Diego	CA	92116
42705119	11 N	12 W	6	Egbert, Clifford		838 2nd street		Santa Monica	CA	90403
23726207	11 N	13 W	1	Ly, Jana Family Trust		25125 Via Las Lomas		Murrieta	CA	92562

TABLE A-1

List of Property Owners

APN	Township	Range	Section	OWNER	CARE OF	STREET	STREET 2	CITY	STATE	ZIP CODE
23727107	11 N	13 W	12	Butler, Rosemary (access only through north and south ends of easement)		2825 E. Cortez		West Covina	CA	91791
23727405	11 N	13 W	12	Singh, Satinder		4728 Mendoza Ave		San Jose	CA	95111
23727409	11 N	13 W	12	Dow, Richard		11227 E. Las Posas Rd		Camarillo	CA	93012
23727418	11 N	13 W	12	Pfiffner, Virginia		850 10th St.		Hermosa Beach	CA	90254
23727417	11 N	13 W	12	Discountland Inc		2261 Monaco Dr		Oxnard	CA	93035

