3.2 Aesthetics/Visual Impacts

3.2.1 Introduction

3.2.1.1 Purpose and Scope

Visual or aesthetic resources are defined as the natural and built features of the visible landscape. The combination of landform, water, and vegetation patterns represent the natural landscape features that define the visual character of an area, while constructed features (such as buildings, roads, and other structures) reflect human or cultural modifications to the landscape. These natural and built landscape features or visual resources contribute to public experience and appreciation of the environment. Visual resource or aesthetic impacts are defined in terms of the physical characteristics of a project, its potential visibility, and the extent to which the project could affect the quality of the existing scene or environment.

This section identifies potential visual impacts, including nighttime light and glare impacts, for the proposed Lompoc Wind Energy Facility (LWEF) and new 115-kV power line.

3.2.1.2 Aesthetic Issues Relating to Wind Turbines

Wind energy has a long history of utilization for pumping water and grinding grain. In many parts of America, especially the West, the windmill is a long-established and well-accepted part of the rural landscape. The wind turbine generator (WTG) was introduced to California in the 1980s to harness wind to produce electric energy at locations such as Altamont, Tehachapi, and San Gorgonio passes. Instead of individual machines, these installations included hundreds and even thousands of small WTGs, usually closely spaced. These wind farms frequently were located close to major highways or freeway corridors and generated considerable discussion regarding their visual impacts.

Opinions regarding these visual impacts were divided. To some, the WTGs were visually dominant technological structures that adversely affected the natural or rural character of the landscape. To others, the WTGs were visually interesting and reflected changing lifestyles away from conventional power plants and toward a more environmentally friendly and technologically advanced means of energy generation. The strings of WTGs also could be seen as delineating and emphasizing the natural topography and ridgelines. The unusual kinesthetic dimension created a unique visual experience.

While appreciated by many, the wind farms created a number of specific aesthetic issues. These issues included concerns about the creation of dense, disorderly, apparently cluttered arrays of WTGs on hillsides; the use and juxtaposition of diverse designs and heights in a single installation; the sense of a visual disconnect with the natural and historic character of the area; the presence of nonoperating WTGs; and impacts related to poorly engineered roads with visible erosion related to improper drainage design. This experience in California provided valuable lessons that have been used in planning and designing subsequent wind energy installations to minimize the aesthetic issues associated with these earlier projects.

The emerging situation was important enough to generate research on public perception of WTG farms. The research validates that although early California wind farms created

specific visual problems, the public perception of them was favorable for the most part. For example, research on public perceptions of the Altamont Wind Energy Area by Thayer and Freeman found that those surveyed perceived the wind farms to be highly visible constructed environments, but more respondents tended to like wind energy developments than dislike them (Thayer and Freeman, 1987). However, when asked to rate photographs of the wind energy installations on a scale from beautiful to ugly, respondents rated the views as neutral to slightly ugly. Thayer and Freeman discovered that reactions to the Altamont wind energy installations were complex, and factors other than appearance played a major role in determining personal responses. The symbolic or connotative aspects of the wind energy facilities were found to be particularly important in influencing reactions. Those who indicated strongly positive attitudes toward the wind energy facilities were likely to find them to be appropriate, efficient, safe, natural (in the production of energy), progressive, and a sign of the future. Those who indicated strongly negative attitudes tended to cite the visual conspicuousness, clutter, and unattractiveness of the facilities. This finding led Thayer and Freemen to conclude that the two groups focused on different aspects of the facilities "…with the 'like' group responding strongly to the symbolic, referential attributes not automatically associated with the visual stimuli. This group was willing to forgive the visual intrusion of the WTGs on the existing landscape for the presumably higher goals of the project where dislikers were not" (Thayer and Freeman, 1987).

Based on their research in 1987, Thayer and Freeman reached a number of conclusions related to design measures that could improve the public perception of wind farm attractiveness. Design measures supported by their research include:

- Use of neutral colors for WTGs
- Evenly spaced arrays
- Consistency in WTG type and size within arrays
- Use of fewer, larger WTGs versus use of numerous smaller ones
- Minimization of conspicuously malfunctioning WTGs

The proposed wind farm portion of the Project was designed to conform to these lessons. In addition, the Project would make use of the latest generation of WTGs, which are larger, more widely spaced, and rotate at lower revolutions per minute (RPM) than those used in the earlier projects. As can be seen in the figures provided in this section, the equipment proposed for the Project strives to make the WTG towers, nacelles, and rotors sleek and attractive.

3.2.1.3 Overview of Methodology

This analysis is based upon field observations and review of the following information.

- Previous research concerning the visual effects of wind energy facilities
- Local planning documents, project maps, drawings, and technical data
- Computer-generated maps of the zones of visual influence
- Ground and aerial photography and computer generated visual simulations

Site reconnaissance was conducted during the months of September and October 2006, and the baseline photographs were taken at this time. Figures 3.2-1 through 3.2-4 show context photographs from the vicinity of the Project.

The selection of Key Observation Points (KOPs) for the analysis is described in the impacts section. The methodology for assessing Project impacts follows the basic procedures and principles of the visual impact assessment methods developed by federal agencies and summarized in *Foundations for Visual Project Analysis* (Smardon, 1986). Additionally, in the late 1980s, the United States Army Corps of Engineers (USACE) developed a visual resources assessment procedure (VRAP) to provide a systematic approach to (1) evaluate and classify existing aesthetic or visual quality; (2) assess and measure visual impacts; (3) evaluate the adverse or beneficial nature of the visual impact; and 4) make recommendations for design and operation changes to projects to minimize visual impacts. The approach has been applied to wind energy projects throughout the United States.

The methodology for accessing Project impacts has been amended to respond to the special characteristics of WTG farms identified. This analysis incorporates and responds to California Environmental Quality Act (CEQA) issues, as well as special concerns of the County of Santa Barbara and adjacent communities. For the detailed application of these methodologies, please see Section 3.2.4 Impact Assessment Methodology.

3.2.2 Existing Conditions

3.2.2.1 Regional and Local Landscape Setting

The WTGs are proposed to be located 3 to 5 miles south of the City of Lompoc (Figure 2-1). Figure 3.2-5 shows the LWEF site with the potential WTG locations shown and identifies the distance from the Project site to various major regional features, such as the City of Lompoc and nearby beaches, through a series of mile-wide radius lines. The overall character of the terrain also can be visualized by reviewing the images on Figures 3.2-6 and 3.2-7. The route for the power line is shown on Figure 3.2-8.

The Project would be located on a series of ridges south of the City of Lompoc, which are variously designated the Santa Ynez Mountains, the Lompoc Hills, and the White Hills. The Project would be located generally between Tranquillon Mountain and trend east along several spurs of the Santa Ynez range toward Prospect Peak, Sudden Peak, and La Tinta Hill. The main drainages include Honda Creek, flowing west, and San Miguelito Creek, flowing east and then north. In addition, the northern face of this range is incised by several north-facing canyons, including Lompoc, La Salle, and Sloans canyons. Much of the area south and west of the Project is part of Vandenberg Air Force Base (VAFB), which includes radar and tracking facilities visible on top of Tranquillon Mountain, the most pronounced peak in the area.

Topographic elevations in the general area range from 100 feet at the City of Lompoc to 2,159 feet at Tranquillon Mountain and 2,122 feet at Sudden Peak. Typically, the WTGs would be located on ridges that vary between 1,200 and 1,500 feet in elevation. None of the structures would be sited above 1,800 feet per agreement with VAFB. While the ranches in the higher portions of the San Miguelito Creek valley are used for grazing, much of the 2,950-acre LWEF site is composed of steep hillside areas partially covered with chaparral and oak woodland. The valley floors tend to be annual grasslands with limited riparian vegetation. Occasional ranch structures are also characteristic. Almost all the land area has range management fences, with more secure fencing and gates at the VAFB entry points.

Within the vicinity of the Project are four subregions, each with its own unique visual character/quality.

Rural Areas (South and East of Lompoc)

This subregion encompasses the eastern portion of the regional landscape surrounding the Project. The area is largely undeveloped and is characterized by steep wooded hillsides from the United States (U.S.) Highway 101 corridor west toward the Lompoc urban area. The main routes through this area include State Route (SR)-1 (also known as Cabrillo Highway) and Jalama Road (Figure 3.2-1, Photos 1 and 2).

Jalama Coast and Vandenberg Air Force Base

The Jalama coast includes the area from Jalama County Beach to Surf Beach and Ocean Beach County Park adjacent to VAFB from the Pacific Ocean, east toward the Project. Undeveloped agricultural lands and natural vegetation largely surround the Jalama County Beach area. The terrain varies from coastal plains adjacent to the beach to steep rolling hills adjacent to the Project. The views from this area, although mostly natural, include existing facilities associated with VAFB including tracking stations on top of several ridges, most noticeably Tranquillon Mountain (Figure 3.2-2, Photos 3 and 4).

Lompoc Urban Area

The Lompoc urban area includes the City of Lompoc and the immediately adjacent unincorporated lands. The urban core is a mixture of residential and commercial development surrounded by single-family residential neighborhoods. Beyond the city limits are agricultural lands used for row crops and flowers, including some residential areas and agricultural processing facilities. The views toward the Project area are often obstructed by existing urban development ranging from trees, existing structures, power lines, or other man-made obstructions. In addition, the hills immediately south of the City of Lompoc limit or completely shield views of the Project (Figure 3.2-3, Photos 5 and 6).

Northern Lompoc Valley

The northern Lompoc Valley area includes the agricultural fields north of the City of Lompoc and the Santa Ynez River, the rolling hills following SR-1 north of Lompoc and the communities of Vandenberg Village and the Mission Hills area, as well as the campus of Hancock College. Views toward the Project include the City of Lompoc and the rolling hills south of the City. Mission La Purisima is a state park located in this area (Figure 3.2-4, Photos 7 and 8).

3.2.2.2 Nighttime Conditions

Similar to daytime conditions, the nighttime views could be divided into four subregions, each with its own distinctive characteristics. The variations between subregions primarily reflect the diversity of development, which in turn generates other lighting sources that could alter the context in which Project lighting is viewed. The variations also reflect ambient lighting, which is defined as the general amount of overall lighting visible from any viewing area. Reviewing the four identified subareas, factors affecting site visibility are identified in more detail.

Rural Areas (South and East of Lompoc)

This area is largely undeveloped with only an occasional ranch structure providing stationary light sources. Vehicles on SR-1 and Jalama Road are the only other sources of

light, and are transient and seen within the context of the road being used. Minimal ambient light exists until the traveler approaches the outskirts of the City of Lompoc. Lighting at the LWEF site would be remote from any of these sources because the site is located along currently unlit ridgelines.

Jalama Coast and VAFB

The Jalama coast is also generally undeveloped and has few sources of stationary light. The exceptions would be the campground lighting from recreational vehicles, restrooms, and campfires at the beach parks, and the very distant security lighting at various VAFB facilities. Lighting at the Project site would be remote from any of these sources because the site is located along currently unlit ridgelines. The amount of ambient light is minimal.

Lompoc Urban Area

The Lompoc urban area includes the City of Lompoc and the immediate unincorporated lands; the area is generally well lit when considering lighting for various buildings for extended business hours (such as shopping areas and convenience markets), residential lighting, street lighting, and traffic signals. Adjacent rural areas also have a fair amount of stationary lighting, given the number of agricultural buildings and rural business structures. Based upon several evenings of field observation, the urban and adjacent rural arterial streets have a relatively high amount of vehicular traffic that would be adjacent to potential viewers. Light from these sources, especially when a marine layer or summer evening haze would be reflected into the sky, creates a dome of "skyglow." Lighting for the LWEF is more remote and would be seen in the context of these numerous light sources. The amount of ambient lighting is relatively high.

Northern Lompoc Valley

The northern Lompoc Valley would have nighttime views across the relatively dark fields and land areas between the communities of Mission Hills, Vandenberg Village, and the City of Lompoc. The Lompoc urban area lies between viewers from these areas and the Project and sets the context for views of the Project of those living and traveling along La Purisima Road and SR-1, especially for the areas east of Vandenberg Village. From this point west, fewer urban lights and a more rural character exist with scattered lighting prevailing. Lighting for the Project is relatively remote and would always be seen in the context of these better lit areas. The amount of ambient light is moderate to high.

3.2.3 Regulatory Framework

3.2.3.1 Federal and State

Given the relatively remote location from any federal or state lands (other than VAFB which, as a military installation, has no documents with identified visual standards for surrounding areas), no applicable standards exist. The Project would be located outside the jurisdiction of the California Coastal Commission.

3.2.3.2 Local Agencies

Two County documents regulate Aesthetics and Visual Resources: the Santa Barbara County Comprehensive Plan, including the Scenic Highway Element, and the Santa Barbara County Land Use & Development Code (LUDC). Section 3.10, Land Use, also addresses LUDC issues.

Scenic Highway Element

The Scenic Highway Element of the Santa Barbara County Comprehensive Plan is intended to assist in preserving and enhancing the most scenic areas along state highways within the County. From its intersection with U.S. Highway 101 at Las Cruces, north to the southerly city limits of Lompoc, SR-1 has been designated a Scenic Highway under this element. A specific goal of the Scenic Highway Element is to "Enhance and preserve the valuable scenic resources located along roadways within the County."

Santa Barbara County Land Use & Development Code

The LUDC regulates development in the County based on the zoning designation and the proposed use of the Project. Within the LUDC, the following chapters and subsections are applicable to the Project.

Chapter 35.62. Ridgeline and Hillside Development

The intent of this Chapter 35.62 is to regulate development that could detrimentally affect the native hillsides of Santa Barbara County. The majority of this chapter is applicable to residential structures and development. This chapter allows specific exemptions to the development guidelines. Exemption 1 includes "poles, towers, antennas, and related facilities of public utilities used to provide electrical, communications, or similar services." The County has interpreted that the power line would be exempt from ridgeline and hillside development policies because the power line consists of poles and electrical lines that are a part of a public utility. The LWEF, including aboveground poles and towers, is *not* exempt; it is not a public facility because it would be owned and operated by the Applicant. To comply with these policies, the LWEF would also have to be reviewed by the Central Board of Architectural Review, which could make additional findings pursuant to Section 35.62.040B.2b.

Chapter 35.20. Height Measurements, Exceptions, and Limitations

An amendment to the 50-foot height limitation specified in Chapter 35.20 was adopted in September 2006 to allow exceedance of this limit for projects similar to this Project.

Chapter 35.57. Wind Energy Systems

Chapter 35.57 applies specifically to wind energy systems. This chapter discusses in detail the regulations regarding the electronic design, siting requirements, safety requirements, and includes specific regulations applicable to the design and visual effect that wind energy systems can have on the environment.

35.57.050.J. Color and Reflective Surfaces

The tower and blades of the system shall be painted a nonreflective, unobtrusive color that blends into the surrounding landscape to the greatest extent possible and incorporates nonreflective surfaces to minimize any visual disruption.

35.57.050.K. Visual Impact

The system shall be designed and located in such a manner as to minimize adverse visual impacts from public viewing areas (such as public parks, roads, and trails). To the greatest extent feasible, the wind energy system:

- Shall not project above the top of ridgelines
- Shall use natural landforms and existing vegetation for screening if visible from public viewing areas
- Shall not cause a significantly adverse visual impact to a scenic vista from a County- or state-designated scenic corridor
- Shall be screened to the maximum extent feasible by natural vegetation or other means to minimize potentially significant adverse visual impacts on neighboring residential areas

35.57.050.L. Exterior Lighting

Exterior lighting on any structure associated with the system shall not be allowed except that which is specifically required by the Federal Aviation Administration (FAA).

3.2.4 Impact Assessment Methodology

3.2.4.1 Introduction: Visual Impact Assessments

The methodology for analyzing an 80-unit WTG Project covering nearly 3,000 acres requires a somewhat different initial analysis than the typical project such as a shopping center or housing project that might occupy a 30-acre site and be located for convenient access near a valley floor. In this case, the WTGs are located on ridge tops with a potential visibility of up to 25 miles depending on atmospheric conditions, lighting, and the time of day. The potential area for visual impacts in this case approaches 600 square miles, approximately an 18.5-mile radius from the nearest Project component. Within this area, nearly 270 square miles have the potential to be "clearly visible with moderate impact: becoming less distinct" and rising through intensity levels to a point where the Project could create a "dominant impact due to large scale, movement, proximity and number" of WTGs.

A Zone of Visual Impact (ZVI) map was prepared to determine the overall Project site visibility. Based on the visibility of the Project, KOPs were selected, and the traditional visual analysis based upon comparing photographs of the existing condition to simulated project conditions was performed. This method evaluates the existing scenic qualities and compares the sensitivity and reactions of the viewers to the before and after project conditions (Smardon et al, 1986). Finally, a third method developed in England and Wales specifically for WTG projects is included in the evaluation process to verify conclusions drawn by the Smardon methods (Sinclair-Thomas Model, 1999).

3.2.4.2 Project Site Visibility – Zone of Visual Impact Map

To determine the visibility of the Project given the highly varied terrain and the up to 80 WTGs that might be visible to varying degrees depending on the location of the viewer, a computer generated model was prepared. This ZVI map uses United States Geological Survey (USGS) topography, with the WTGs positioned to represent a worst-case layout for visual resources. Locations from which the WTGs might be visible were determined based upon the height of the WTGs and the intervening topography,. This mathematical visibility potential is shown on the ZVI map of Figure 3.2-5. As can be seen, the topography affects views; for example, only the northern portions of the City of Lompoc would have the

potential to see the WTGs, but almost all of the northern portions of the Santa Ynez Valley would be able to view the LWEF site. The Project area is potentially visible from points in a 360-degree radius with significant topographical limitations. Potential views could be possible from the ocean, which is 2 miles distant at the closest point. The nearest public beach (land view) is 4 miles distant at Jalama Beach. According to the ZVI map, the Project has the potential to be seen as far away as portions of the City of Santa Maria. Figure 3.2-5 also identifies rings of distance from the Project area. These rings, measured in miles from the Project, are used in the analysis because, although the map might show the Project site as visible, the nature of the WTGs is such that visibility would diminish significantly with distance.

Distance also is a factor with atmospheric haze conditions that are prevalent in the area for large portions of the year. This condition significantly reduces Project visibility for proportionately slender items such as the towers and blades of the WTGs.

3.2.4.3 Comparison of Pre- and Post-project Conditions

Assessment of Scenic Qualities

The scenic quality of landscapes potentially affected by the Project, as seen from viewing areas, is rated based upon the various factors identified in detail below. These ratings were developed in a series of field observations made in fall 2006. The final assessment of scenic quality was made based on professional judgment that incorporated consideration of a broad spectrum of factors including:

- Natural features such as topography, water courses, vegetation and rock outcrops.
- The effects (positive or negative) of man-made alterations, including structures, on the visual quality of the scene. Criteria in this category include assessment of vividness, intactness, and unity of patterns in the landscape, as follows:
  - ***Vividness*** is defined as the memorability of the visual impression received from contrasting landscape elements as they combine to form striking or distinctive visual patterns.
  - ***Intactness*** is defined as the integrity of visual order in the natural and built form landscape and the extent to which the landscape is free from encroaching and distracting visual elements.
  - ***Unity*** is defined as the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Put another way, unity refers to the compositional harmony or intercompatibility between landscape elements. (United States Department of Transportation Federal Highway Administration [FHWA], 1988).

The scenic quality was then assigned a value of high, moderate, or low where:

- ***High*** defines a landscape with great scenic value – for example, a "picture postcard" scene such as SR-1 along a coastal area. People typically go out of the way to visit areas of high scenic quality that have high levels of vividness, unity, and intactness. (Buhyoff et al., 1994; FHWA, 1998).

- ***Moderate*** defines landscapes that are common or typical and have average scenic value. They usually lack significant man-made or natural features. Levels of vividness, unity, and intactness are average.
- ***Low*** defines landscapes that are below average in scenic value. They often contain visually discordant man-made alterations and provide little of interest in terms of landscape attributes. Views are typically classified as indistinct, unharmonious, and disjunctive.

Assessment of Visual Sensitivity

The analysis of viewers, viewing conditions, and viewer sensitivity in each viewing area takes into consideration viewers from public roads, recreation areas, and residential areas, where applicable. Viewers in public places would have varying sensitivities depending on their reasons and expectations for traveling or using the parks or other public areas. Overall levels of visual sensitivity in each of the viewing areas are identified as being High, Moderate, or Low, as follows:

- High levels of sensitivity were assigned in situations where WTGs would be visible within 0.5 mile or less from public viewing areas, heavily traveled roadways, or important recreational facilities.
- Moderate levels of sensitivity were assigned to areas where the WTGs were more distant, between 0.5 to 5 miles, within the primary cone of vision for travelers.
- Low level of sensitivity was assigned to areas beyond the 5-mile perimeter.

These assignments were modified depending on expectations (for example, of persons visiting the La Purisima Mission, where any modern activity could change the historic context of the 18th century setting of the mission).

Assessment of Visual Impact Severity

Based upon a simulation of the Project set into the baseline photograph, an assessment of the Visual Impact Severity was made based upon the following criteria:

- Visual Contrast (*Is the project "in or out" of character with the existing landscape?*
- Project Dominance (*Does the project dominate the existing setting?)*
- View Impairment (*Does the project obscure or impair significant views or alter the character of a visually important scene?)*

As with Visual Quality and Sensitivity, the Impact Severity is rated as high, medium and low. This model concludes with a matrix comparing the Visual Quality, the Visual Sensitivity and the Impact Severity into a concluding statement of the level of visual impact.

3.2.4.4 Sinclair-Thomas Model

To help interpret the ZVI map and verify the conclusions drawn regarding the significance of the potentially affected views, a matrix (Table 3.2-1) including the Sinclair-Thomas number (visual sensitivity model shown in Table 3.2-1), location, and height of the WTGs, is provided to better define the degree of impact. These zones and definitions were developed in the United Kingdom through systematic observations of wind energy installations in

England and Wales undertaken to define the potential for WTG visibility as a relationship of height to distance. The assessments represented in this matrix represent the worst-case situations (Sinclair-Thomas, 1999).

Information contained in Table 3.2-1 is used in conjunction with other standard visual analysis techniques to arrive at the final impact assessments identified in Section 3.2.5. As one would expect, the areas most adjacent to the Project have the highest potential to generate significant visual impacts.

TABLE 3.2-1
Sinclair-Thomas Model (Based on Turbines 95 meters or 312 feet in Height)

Descriptors	Band	Distance (miles)
Dominant impact due to large scale, movement, proximity, and number	A	0-2.49
Major impact due to proximity capable of dominating landscape	B	2.49-4.66
Clearly visible with moderate impact: potentially intrusive	C	4.66-7.46
Clearly visible with moderate impact: becoming less distinct	D	7.46-10.5
Less distinct: size much reduced but movement still discernable	E	10.5-13.67
Low impact, movement noticeable in good light: becoming components in overall landscape	F	13.67-16.77
Becoming indistinct with negligible impact on the wider landscape	G	16.77-21.75
Noticeable in good light but negligible impact	H	21.75-24.85
Negligible or no impact	I	24.85
Suggested radius for ZVI analysis		18.64

3.2.4.5 Application of Methodology

Using the ZVI map and the standard CEQA criteria related to visibility from roads, parks, and public spaces, a series of KOPs representative of views from defined public areas was selected for further detailed analysis. The KOPs were reviewed with both County staff and the Applicant. Once the KOPs were identified and baseline photographs taken, simulations were prepared that take into account on-the-ground elements such as adjacent urban development, landscaping, and other factors that could affect views of the Project.

The simulations were developed by using several additional computer programs to compensate for the lack of precise WTG locations and the generalized nature of the topography for this area, which was taken from maps supplied by the USGS. Regarding the WTG location, since actual locations were not supplied by the Applicant, the consultant team (CH2M HILL) developed a reasonable maximum wind farm concept using Applicant-identified development corridors and generally accepted WTG location criteria as defined in the project description. The result is an 80 unit worst-case LWEF layout that is used as the basis for this analysis.

The location of each WTG was set using the same base map as that developed for the ZVI map. To develop this information into a three-dimensional model, the USGS map with WTG

locations was then overlaid onto Google Earth (a 3-dimensional mapping program that is available on the Internet for large portions of the world via satellite photography).

Using "SketchUp," a 3-dimensional computer program, the WTGs were modeled, then placed on the Google Earth/USGS base, with the base of the tower on the appropriate contour (Figures 3.2-6 and 3.2-7). The Google Earth model was then rotated into the same view as the baseline photographs and the horizontal location of the WTG was transferred to a working copy of the baseline photograph for the KOP under review. The WTGs were also rendered in a Photoshop program to add shadows and other characteristics to make them appear close to the real world situation.

The accuracy of this process is limited by the general nature of the information of the worst-case WTG layout and the computer interpolation of the USGS topographical information. An additional ±5 feet of variation could exist on WTG height, given the small scale of the documentation for the Google Earth exercise.

An analysis on a KOP-by-KOP basis was then undertaken using the simulations as a base and evaluating the impacts using CEQA and County Significance Criteria as integrated into the Smardon process.

These factors were combined to determine the class of impact. Possible mitigation measures were also examined that could reduce significant impacts to a less than significant level. A concluding effort was done to compare the CEQA class of impact results with the Sinclair-Thomas Model to provide an alternative evaluation method.

3.2.5 Project Impacts, Mitigation, and Residual Impacts

3.2.5.1 Description of Visual Components of the Project

The major Project components include 60 to 80 WTGs, new access roads and road improvements, a communication system, meteorological towers, an operations and maintenance (O&M) facility, onsite electrical collection and distribution lines, an onsite electrical Substation (Project Substation), and a new 115-kV power line (Figures 2-2 and 3.2-5).

Lompoc Wind Energy Power Line

The power line route is approximately 8 miles long, extending from the Project Substation along San Miguelito Road and over a series of ridges to a connection with the PG&E system in Lompoc. A portion of this line would be adjacent to SR-1, as it approaches Lompoc, from the south and east (Figure 3.2-8). Since no specific pole locations were included in the project description, the following assumptions were made as a "reasonable worst case" for this analysis. The Applicant stated that the typical configuration would be similar to that shown in Figure 3.2-9C with an underhanging insulator configuration on wooden poles 60 feet in height. The typical pole spacing was assumed to be 250 feet and this was considered to be a reasonable worst case. However, actual pole spacing could be up to 1,000-foot spans depending on terrain and design factors. The poles adjacent to San Miguelito would be in the same location as the existing poles but be extended in height to allow for the additional conductors to be placed above the existing power lines.

Wind Turbine Generators

The WTGs would be 315 to 492 feet in total height, from foundation to blade tip, with the greater height typical. Refer to Section 2.3.1.1 for a detailed description of WTG spacing and configuration. The WTG towers would be 200 to 330 feet in height, constructed of heavy-duty, epoxy-coated, welded steel, and would form a conical shell. They would taper from approximately 18 feet in diameter at the base to 7 feet at the nacelle (portion of the WTG where mechanical components are housed), as shown on Figure 2-5. The WTGs would be of the three-bladed, horizontal axis design, the type installed in most modern, commercial wind farms (Figures 2-4 and 3.2-9). The blades would be approximately 115 to 165 feet long. The FAA could require lights on at least some of the WTGs. This analysis assumes that a synchronized flashing red light would be mounted on the top of the nacelle of the WTG located at the end of each WTG string; additional WTGs within the string also would have such a light, so that the maximum distance between lit WTGs would be no greater than 2,640 feet. These lights would be placed in compliance with FAA guidelines. However, because the Project area is located within VAFB restricted airspace, the FAA might determine an alternate WTG identification system based upon activities and needs of VAFB.

Other Operational Facilities

Each array of WTGs would be interconnected via cables. The cables would run underground from the base of each WTG and connect to a riser linking the underground system to overhead 34.5-kV distribution lines within the Project area. Where deemed necessary to avoid ground disturbance and environmental impacts, cables would be mounted on aboveground poles.

The O&M facility would be located near the corner of San Miguelito Road and Sudden Road (Figures 2-2 and 2-7), would occupy approximately 2 acres, and include a main building with offices, spare parts storage, restroom, a shop area, outdoor parking facilities, a turn around area for larger vehicles, outdoor lighting, and a gated access with partial or full perimeter fencing. The O&M building itself would be a pre-engineered metal building with a foundation footprint of approximately 50 by 100 feet.

Power from the overhead and underground distribution system would be delivered to the Project Substation located adjacent to the O&M facility (Figure 2-2). The Project Substation would be approximately 2 acres in size, within a fenced enclosure, and would consist of four components: a low voltage switchgear rack, step-up transformer, 115-kV switchrack, and a control building (Figure 2-6, Inset D).

During Project construction, staging areas would be created and used for temporary storage of construction material and equipment (Figure 2-2). Each staging area would be scrubbed of vegetation and covered with a gravel base material and secured by an 8-foot-tall chain link fence surrounding the area, and accessed with a drive-through gate.

When construction of the Project was complete, each staging area would be dismantled, and the fence and base material would be removed; the base material would be redistributed on the existing gravel roads. The sites would be re-vegetated with material salvaged from the original scrubbing of the site vegetation.

Light and Glare

Turbine Lighting

To respond to the aircraft safety lighting requirements of the FAA, the Project would be marked according to guidelines established by the FAA. FAA guidelines for lighting of WTGs call for lights that flash red (at 2,000 candela) at night. These lights are designed to concentrate the beam in the horizontal plane, thus minimizing light diffusion down toward the ground and up toward the sky. Aside from any required aircraft warning lights, the WTGs would not be illuminated at night.

Related Facility Lighting

It is assumed that basic safety lighting would be provided at entries and parking spaces of facilities such as the O&M facility and Project Substation. Given the remote location of these facilities, this lighting is not considered to generate potential impact given the relatively similar lighting of the nearest residences or agricultural structures.

Shadow Flicker

Shadow flicker, or strobe effects, could occur only if a WTG is located in close proximity to a receptor, and is in a position where the blades interfere with very low-angle sunlight. The Project is not expected to result in any shadow flicker effect to any sensitive receptors, such as residences, due to the distance of more than 500 feet to the nearest residence, which is beyond the distance where shadow flickers can create impacts.

Atmospheric Haze and Fog

This section of the California coast is well known for the amount of haze and fog generated by the atmospheric and coastal conditions. The closest recorded representative data for the Lompoc Valley is Santa Maria which records an annual average of 87 days of haze and fog (WRCC, 2007). It is also noted that the primary wind direction is from the northwest. Therefore, since the WTGs would rotate to face the wind, the visual effects of the WTG blades would be reduced from areas to the northeast (perpendicular to the wind direction).

3.2.5.2 Selection of Key Observation Points

Each of the described landscape areas (Landscape Areas 1 through 4 below) was reviewed in the field to select representative KOPs that would demonstrate the "reasonable worst case" views. In several cases, while a particular location would be occupied by highly sensitive viewers, the possibility was that actual visibility would be minimal. However, these KOPs have been retained to graphically demonstrate the actual level of impact.

Landscape Area 1

The primary public views of this relatively undisturbed area are provided by SR-1 (Cabrillo Highway) and Jalama Road (Figure 3.2-1, Photos 1 and 2). Review of the maps and the Sinclair-Thomas tables determined that the greatest potential to view the WTG aspect of the Project would be from SR-1 just before its intersection with Jalama Road. KOP 1 (Figure 3.2-11) views directly toward the most easterly array of WTGs, and is approximately 5 miles distant from them. Several other views are included in the context photos (Figures 3.2-1 through 3.2-4). In addition, the power line would cross SR-1 at the southern city limits of Lompoc. This area is represented by KOP 2 (Figure 3.2-12), which shows the area of the potential highway crossing by the power line and its transition toward the west

over an intervening ridge toward San Miguelito Canyon. KOP 3 (Figure 3.2-13) is selected to show potential impacts of the replacement power line along San Miguelito Road, as one returns from Miguelito County Park located about 3 miles south of the City of Lompoc business district.

Landscape Area 2

This area represents views from the coastal areas, and more specifically, publicly accessed beaches. KOP 4 (Jalama County Beach, Figure 3.2-14) lies 4.5 miles south of the most westerly array of WTGs. KOP 5 (Figure 3.2-15) is representative of views from Ocean County Park and Surf State Beach. This view is taken from 7.5 miles away and views the most northwestern WTG array. Tranquillon Mountain is just visible at the center of the photo.

Landscape Area 3

In this area, the City of Lompoc area is represented by KOPs 6 and 7. The older and more southern portions of the city are shielded from the Project area by an intervening series of hills. However, Project components would be visible from streets in the community north of Lemon Street. KOP 6 (Figure 3.2-16), at Tangerine and 7th Streets, represents the eastern portion of Lompoc with a generally oblique view south and west toward the eastern portions of the WTG arrays. KOP 7 (Figure 3.2-17), at Lemon Avenue, represents views from the more westerly residential streets that view south toward the Project area.

Landscape Area 4

The northern valley and the Purisma Hills area are represented by three KOPs. While somewhat more distant than some of the other areas, the local topography is such that views from this landscape area would be broader ranging. In other words, more of the WTGs have the potential to be viewed at the same time. KOP 8 (Figure 3.2-18) is taken from the open field within the confines of the State Historic Park at Mission La Purisima approximately 7 miles from the northern edge of the Project. Of concern would be whether the construction of the Project would alter the historical context of the Mission grounds. KOP 9 (approximately 7.5 miles north of the Project, Figure 3.2-19) was selected as representative of views from the public areas of Mission Hills and to a lesser extent Vandenberg Village. Harris Grade Road (similar to Rucker Road) is one of the major access points from the Lompoc Valley and the SR-1/Purisima Road corridor into the residential communities on the bluffs of Purisima Hills. Finally, KOP 10 (Figure 3.2-20) represents views from the northwestern end of the Lompoc Valley near the VAFB Gate area (SR-1 at Timber Lane). KOP 10 is approximately 10 miles distant from the Project, and offers the most panoramic view.

Figure 3.2-10 shows the location of the selected KOPs and they are summarized as follows:

- KOP 1: SR-1 near El Jaro Creek (5 Miles East of the Project)
- KOP 2: SR-1 View of Power Line Crossing (1.25 Miles Southeast of Lompoc)
- KOP 3: San Miguelito Canyon View toward Power Line Crossing (0.9 Mile South of Lompoc)
- KOP 4: Jalama Beach County Park (4.5 Miles South of Project)

- KOP 5: Surf Beach Parking Lot (7.5 Miles Northwest of Project)
- KOP 6: Lompoc East: 7th Street at Tangerine (5.5 Miles North of Project)
- KOP 7: Lompoc West: Lemon Avenue at "X" Street (4.75 Miles North of Project)
- KOP 8: Mission La Purisima (7 Miles North of Project)
- KOP 9: Harris Grade (7 Miles North of Project)
- KOP 10: SR-1: Vandenberg AFB Entry Near Timber Lane (10.5 Miles North of Project)

3.2.5.3 Thresholds of Significance

Based on the thresholds that are identified in CEQA Appendix G, and expanded upon in the County of Santa Barbara Environmental Thresholds and Guidelines Manual, impacts would be significant if the Project would:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area

3.2.5.4 Construction Impacts

The visual aspects of construction involve two generally separate types of activity. First there would be general grading and site preparation, in which there would be moving equipment and clearing of temporary laydown areas and access roads, and setup of various small construction offices and storage units. The second would be the erection of the WTGs and associated power lines. While construction could occur in two to three phases, each phase is projected to occur in a 6-month period (Table 2-3). The first part of each construction phase would involve mostly onsite activities; the second would also include delivery of the Project components, including the very large WTG parts, and would affect those living and utilizing the travel corridors during the period of construction.

Visual Effect of Construction Activities

The onsite aspects of grading and site preparation, given the nature of the topography and the distance from critical viewing areas, would not be visible from any of the KOPs, and might be visible only from the ranches within the Applicant-leased areas (considered participating residences) or from adjacent ranches (considered nonparticipating residences). The second part of construction would be more visible, as the components being moved during the erection process are relatively large and would be high (up to 492 feet). They would be visible as they are transported to the Project area and would also be noticeable from various KOPs as they are moved into final position. The visual impacts of the trip to the site are considered short-term (less than a year in total duration) and less than significant, since they involve no permanent changes. The erection process would also be

short-term and ultimately the impacts would vary by KOP. These impacts would be short-term and adverse, but less than significant *(Class II)* due to their temporary nature.

Construction of the power line would be visible along both SR-1 and San Miguelito Road. Construction activities would include moving equipment, clearing and delivery of materials to the laydown areas and erection of the poles and power lines. The construction process would take less than 6 months and is, therefore, the impact is considered, adverse, but less than significant (*Class III*).

3.2.5.5 Operation Impacts

Operational components of the Project could be visible from various areas represented by the KOPs defined in Section 3.2.5.2. Potential impacts are assessed and presented for each of the KOPs (including an assessment of nighttime light and glare) and summarized in Table 3.2-2. Impacts are then synthesized and summarized for the Project as a whole.

Impact Evaluation by KOP

The level of visual impact is measured by assessing the visual change created by the Project as compared to the existing levels of visual quality and viewer sensitivity. Daytime impacts are identified for each KOP and summarized in Table 3.2-2. The evaluation of impacts includes County requirements specific to WTGs, as well as the more general CEQA requirements.

KOP 1: SR-1 Near El Jaro Creek (5 Miles East of the Project). This location is representative of the first major view of the WTG array from the east along SR-1 (Figure 3.2-11). Any visible WTGs would be seen at a distance and would be partially hidden by the intervening ridge.

View Quality and Viewer Sensitivity: The scenic qualities and viewer sensitivities are both rated as moderately high, because this is a scenic highway in a relatively pristine natural area with harmonious rural, and man-made elements. The duration of views is moderate, and the number of viewers is also moderate; 9,500 average daily traffic (ADT) trips occur along this section of SR-1 (Caltrans, 2006).

Impact Severity: The impact of the addition of the Project area (seen when comparing Figure 3.2-11, Photo A, baseline, with Photo B, simulation) is that the WTGs are both distant and relatively small when compared with the whole scene. While there is the potential to silhouette, as the simulation shows, this is not clearly discernable at this distance under most viewing conditions. However, the WTGs might be visible at some time of the day and are, therefore, considered an introduction of a relatively incompatible element into this otherwise somewhat intact scene. This evaluation is consistent with the Sinclair-Thomas Model that identifies the Project area as visible with moderate impact, depending on the circumstances. Therefore, the impact severity is classified as moderate. Use of low impact colors and the ruggedness of the topography would be mitigating factors from this KOP.

Impact Level: The level of impact from KOP 1 is classified as moderate—that is, adverse but less than significant *(Class III).*

KOP 2: SR-1 View of Power Line Crossing (1.25 Miles Southeast of Lompoc). This location represents the end of the rural portion of SR-1, south of the City of Lompoc, at the White Hills gateway to the Lompoc Valley (Figure 3.2-12). The views are of open hills with few trees or major features and little evidence of urban development. The potential change to

this view would be the addition of a new power line, which would enter the view at the small valley at left, ascend the ridge at mid-photo and proceed over the top toward the substation in Lompoc. This location is representative of the "worst-case" scenario for travelers along the SR-1 corridor. (Pole spacing is shown as 250 feet, the minimum distance proposed, which maximizes the number of poles.)

TABLE 3.2-2
Summary of Visual Impacts

KOP No.	Quality	Sensitivity	Impact Severity	Impact Level	
				Daytime	Nighttime
1 (Figure 3.2-11) Hwy 1 Rural	Moderate-High	Moderate-High	Moderate	Class III	Class III
2 (Figure 3.2-12) Hwy 1 Lompoc	Moderate-High	Moderate-High	High	Class I *	NA
3 (Figure 3.2-13) San Miguelito Rd.	Moderate	Moderate-High	Moderate-High	Class III	NA
4 (Figure 3.2-14) Jalama Beach	High	High	High	Class I	Class I
5 (Figure 3.2-15) Surf Beach	Moderate-High	High	Low	Class III	Class III
6 (Figure 3.2-16) East Lompoc	Moderate	Moderate	Low	Class III	NA
7 (Figure 3.2-17) West Lompoc	Moderate	Moderate	Moderate	Class III	Class III
8 (Figure 3.2-18) Mission Purisima	High	High	Moderate-Low	Class III	Class III
9 (Figure 3.2-19) Harris Grade Rd.	Moderate-High	Moderate-High	Moderate-Low	Class III	Class III
10 (Figure 3.2-20) VAFB: main gate	High	Moderate	Moderate-Low	Class III	NA

Notes:

* Can be reduced to Class II impacts with the Applicant-proposed alternative power line route.

`NA Not Applicable

View Quality and Viewer Sensitivity: As with KOP 1, the scenic qualities and viewer sensitivity are both rated as moderately high, because this is a scenic highway in a relatively pristine natural area with harmonious rural and man-made elements. The duration of views is extended (over a minute), and the number of viewers is moderate at 9500 ADT.

Impact Severity: While the addition of the power line (Photo B of Figure 3.2-12) is not massive in the way a structure might be, it does silhouette the skyline in an area where there has been no previous silhouetting. Based upon the reasonable worst-case scenario, wherein 60-foot-high wood poles spaced 250 feet apart were simulated, at least five poles would silhouette from this location directly in front of northbound travelers. The poles at the right end of the visible line directly in front of the traveler would be the visually most intrusive. These poles would be most visible in the early morning when they would appear dark with the sun backlighting them from the east, and in the late afternoon when they would appear light gray with highlights when the sun angle is low and from the west. The relative height and projection of the ridgeline poles would increase as the traveler progresses northward and gets closer to the curve in the center of the photo, just above the trees. This condition exceeds the standards established by the County of Santa Barbara wherein "structures shall be subordinate in appearance to natural landforms…. and shall be sited so as not to intrude into the skyline as seen from public viewing places." The impact severity is therefore classified as high.

Impact Level: Given that the existing setting and viewer expectations are classified as moderately high, and because this portion of SR-1 is designated as a scenic highway under the Comprehensive Plan of the County and the City of Lompoc Urban Design policies, the impact from KOP 2 would be significant and unavoidable (*Class I*).

KOP 3: San Miguelito Canyon View toward Power Line Crossing (0.9 Miles South of Lompoc). This location represents views along the relatively scenic San Miguelito Road heading north from Miguelito County Park and the large ranches beyond toward Lompoc (Figure 3.2-13).

View Quality and Viewer Sensitivity: The view quality is rated moderately low in the area immediately south of the City of Lompoc, because the area has small houses and scattered farms on the west and the railroad spur to the Celite operation in the White Hills on the east of the road. After approximately 2 miles, the view quality becomes increasingly natural (approximately at the area where the photographs of KOP 3 are taken) and would be classified as moderate. Viewer sensitivity would be rated as moderately high, since many of the travelers would use the road for recreational or scenic purposes. However, while the duration of views of the new power line would be moderate, the number of viewers is classified as low (based upon personal observation during field analysis and extrapolated ADTs as discussed in Sections 3.13 and 3.14). In conclusion, the view quality and viewer sensitivity are considered moderate.

Impact Severity: The replacement of the existing power lines with higher pole structures would result in slightly greater silhouetting of the sky, as shown on the left (west) side of San Miguelito Road (Figure 3.2-13, Photo B). Further, there would be the addition of new structures on the right (east) side of San Miguelito Road. In this case, while the new structures do silhouette, they are seen within the context of existing power poles that also silhouette. Therefore, the impact severity is classified as moderately high.

Impact Level: Combining the view quality and viewer sensitivity criteria with the impact severity results, the impact from KOP 3 would be adverse, but less than significant *(Class III)*.

KOP 4: Jalama Beach County Park (4.5 Miles South of Project). The location is from Jalama Beach County Park. This park faces the Channel Islands and provides overnight camping, trailer spaces, and amenities (Figure 3.2-14). This view is representative of the majority of the visitors in the Park Campground area. While the view of the WTGs on the western most ridge would increase somewhat as a beach user walks north along the beach, some of the more easterly WTGs would be reduced somewhat in height because of the adjacent topography. Some portion of the LWEF would be visible from almost the entire park except where local structures could provide temporary interruption or from the southernmost portions that are cut off by the existing dunes and bluffs.

View Quality and Viewer Sensitivity: While the primary views are toward the ocean, the whole scene is one of almost undisturbed natural beauty. The mixture of dramatic bluffs and varied vegetation contrasted with the Pacific Ocean are the major contributing factors. These contrasts include vertical and horizontal form, texture, and color. While components of the railroad and some distant VAFB facilities are visible, there is minimal intrusion on the existing views. Any visual evaluation must recognize that these views would be obscured by the marine layer that is frequently present at this location especially during summer mornings. During visible times, however, the overall view quality is rated high and is considered one of the primary attractions of this beach. Viewer sensitivity is also high, since almost all visitors come to the park for recreational purposes that include appreciation of the natural setting. The level of viewer sensitivity, the duration of the views (which is classified as long because many visitors remain at the park and do not simply pass through) raises this rating to high sensitivity.

Impact Severity: The addition of WTGs to the view (13 are visible), while not obscuring a large expanse of the view, would certainly visibly silhouette as shown on Figure 3.2-14 and would attract viewer attention with the movement (flicker factor) at this location. These elements together are also considered to generate a significant contrast to the existing natural setting. The WTG color would also be out of character with the rest of the landscape. The Sinclair-Thomas methodology assigns a potential of a "major impact" (Table 3.2-1). The impact severity is rated as high.

Impact Level: Given that the scenic quality is high, viewer sensitivity is high, and the impact severity is high, the impact from KOP 4 would be significant (*Class I)*. Screening is not a viable option. While removal or relocation of 13 of the western most WTGs would reduce the level of visual impacts, this option is not considered a viable mitigation measure because the affected WTGs are in one of the prime wind resource areas of the Project. However, this level of change is considered as an alternative and is discussed in the Alternatives Analysis section (Section 5.3.1).

The Applicant has stated that they will not site WTGs in the westernmost portion of the West Corridor, as shown on Figure 2-2, in the immediate vicinity of the two westernmost WTGs depicted on Figure 3.2-10. Although the removal of these WTGs would reduce visual impacts, the change would not be sufficient to change the level of impact.

KOP 5: Surf Beach Parking Lot (7.5 Miles Northwest of Project). This location is representative of the more northerly beach areas of Surf Beach and the Ocean Beach County Park and is included to assess any potential impacts from these public resources (Figure 3.2-15).

View Quality and Viewer Sensitivity: The view quality of these two beaches is somewhat less than that described for the Jalama County Beach, since the various landform elements are less dramatic. Specifically, there are fewer bluff forms adjacent to the ocean, less vegetation, and less color contrast. Therefore, the view quality is rated as moderately high given the natural character of the area with the only distraction being the more visible proximity of the railroad embankments, the bridge over the Santa Ynez River, and some distant communication poles and VAFB tracking facilities. Viewer sensitivity is rated as high. Most visitors primarily come for the natural views and the beach experience. The duration of the views is also relatively long, though the primary views would be toward the shoreline and not the interior hills toward the Project.

Impact Severity: The Project would not be seen from the northern portion of the Surf Beach area (Figure 3.2-5). From the southern portion of the beach area, the relatively distant view of the Project WTGs (over 7 miles away) would be seen within the context of the existing pole structures. The severity is classified as low.

Impact Level: The impact from KOP 5 would be adverse, but less than significant *(Class III).*

KOP 6: Lompoc East: 7th Street at Tangerine (5.5 Miles North of Project). This location was selected as representative of the eastern sector of the City of Lompoc where the potential for viewing the Project first could be realized as the viewer moves to the north through the urbanized area (Figure 3.2-16). Note that the southern half of the City is protected from viewing the Project by the intervening hills near the mouth of San Miguelito Canyon (ZVI Map, Figure 3.2-5).

View Quality and Viewer Sensitivity: Views from this sector toward the Project area are filtered through an urban mix of adjacent structures and street trees. There is never an expanse of view, such as those possible from the previous KOPs. The scene is relatively fragmented, and the views are dominated by foreground objects such as streets, traffic, and structures. The view quality is rated as moderate. Viewer sensitivity is also rated as moderate, since very few people would be in this area or on the public streets for recreational purposes or to take advantage of the views. This is not to say that the residents in the area are insensitive to the views, but rather that they would have lower expectations or sensitivity than those visiting the beach areas. Duration of views would also be relatively short.

Impact Severity: As demonstrated by the simulation and confirmed in the Sinclair-Thomas table (Table 3.2-1), WTGs at the distance of 5.5 miles would be visible. They would be proportionately so small that they would not impair views, significantly silhouette the skyline, or provide contrast to the surrounding landscape. Only on a clear day, in the early morning when the sun could strike the WTG, providing a white contrast—or just before sunset, when some of the WTGs could silhouette—is the Project likely to be visible. The impact severity is classified as low.

Impact Level: Given that the view quality and viewer sensitivities are moderate and the impact severity is low, the visual impact from KOP 6 would be adverse, but less than significant *(Class III)*.

KOP 7: Lompoc West: Lemon Avenue at "X" Street (4.75 Miles North of Project). This location was selected as representative of the western residential areas of Lompoc, as well as the

more centralized commercial core along O Street (SR-1, Figure 3.2-17). Views of the Project area are fragmented and distant, usually glimpses down streets that face south. This KOP represents the most open vista found in this portion of the city. The views are obscured by closer vehicles, street trees, and adjacent structures. The view quality is rated moderate. As with KOP 6, the view sensitivity is rated as moderate for the same reasons.

Impact Severity: From this general area on the western portion of the City of Lompoc, the Project site tends to be more visible given the north/south direction of the streets that face the Project area (Figure 3.2-17, Photo B). The Sinclair-Thomas Model rates the Project as visible with the potential impact as moderate. However, the WTGs would be distant and, except as noted in the analysis of KOP 6 above, not very visible for most of the day. The impact severity is rated as moderate.

Impact Level: The impact from KOP 7 would be adverse, but less than significant *(Class III).*

KOP 8: Mission La Purisima (7 Miles North of Project). This location is unique in that it represents one of the best-preserved California mission compounds in the state and is an important state park (Figure 3.2-18). Part of the attraction of Mission La Purisima is that the visitor, once in the Mission grounds, is mentally carried back almost 200 years to a California at the time of the coming of the Spanish.

View Quality and Viewer Sensitivity: Given the natural setting at the base of a small canyon with centuries-old structures framing the views of the Lompoc Valley and the hills beyond, the view quality and setting is highly coherent, harmonious, and evocative of a different time. Urban areas are screened by a row of trees facing SR-246. The view quality is high; view sensitivity is also rated high, since the primary reason for coming to this state park is to experience a re-enactment of past times. The number of visitors might not be high, but the duration of the views is classified as long because pedestrians move in the open area adjacent to the Mission in the primary cone of vision facing the Project (Figure 3.2-18, Photo A).

Impact Severity: Simulation of the Project demonstrated that during the highest use portions of the day, the Project would not be visible, given the Project distance from the Mission grounds. In terms of impact severity, occasionally in the very early morning or late evenings on very clear days the Project might be visible. These occasions, however, would be for relatively few visitors, and days of this clarity are less than a majority for the area. The impact severity rating is moderately low.

Impact Level: In this instance, with high view quality and viewer sensitivity, but relatively low impact severity, the visual impact from KOP 8 would be adverse, but less than significant *(Class III)*.

KOP 9: Harris Grade (7 miles North of Project). This KOP was selected as representative of the northern slopes of the hills facing the Lompoc Valley including such communities as Mission Hills, Vandenberg Village, and adjacent rural areas (Figure 3.2-19).

View Quality and Viewer Sensitivity: The view is a broad expanse of valley with a backdrop of the White Hills and related mountains. The City of Lompoc is nestled at their base. Agricultural fields typically occupy the middle ground with interspersed residential and agricultural structures, while the foreground is frequently of the more recent residential

development that characterizes this area. While the scene has a few discordant components, it is for the most part relatively coherent and creates a landscape that many consider highly desirable for new residences. View quality is rated as moderately high. Factors affecting viewer sensitivity are similar to those evaluated for the City of Lompoc with the slight difference that there is a higher visitor component for those using SR-246 and SR-1 for recreational uses. The number of viewers at 28,000 ADT (Caltrans, 2006) is relatively high and the duration is extended. The viewer sensitivity is rated as moderately high.

Impact Severity: Construction of the Project would result in changes to the distant hills as seen in the simulation (Figure 3.2-19, Photo B). However, given the higher elevation of the views from the northern portion of the Lompoc Valley, many of the WTGs would be seen against a backdrop of the more distant hills. Only the most distant WTG arrays would have the potential to silhouette during the early morning or late afternoon hours. The distance is 7 or more miles, and the visibility would neither be intrusive nor distracting to the viewer. The impact severity is rated moderately low.

Impact Level: With moderately high view quality and viewer sensitivity, and a relatively low impact severity, the impacts from KOP 9 would be adverse, but less than significant *(Class III)*.

KOP 10: SR-1: Vandenberg Air Force Base Entry Near Timber Lane (10.5 Miles North of Project).
This KOP represents the first views of the Project area when approaching Lompoc and the Project area from the northwest (Figure 3.2-20). This view, and the even more distant but similar view when coming down Harris Grade, present the Project context for those commuting to and from the main gate at VAFB, as well as travelers using this portion of SR-1.

View Quality and Viewer Sensitivity: The views from this portion of SR-1 are of an open natural scene (a portion of VAFB) and a backdrop of the more dramatic portion of the hills bounding the southern portion of the Lompoc Valley, including Tranquillon Mountain and Sudden Peak. The view quality is rated high. Viewer sensitivity would be split between those commuting to work at VAFB and tourists. The commuters' viewer sensitivity is rated as moderate, since their primary purpose for utilizing the road is not recreation related. However, the tourist component would be rated as moderately high. The total number of people traveling this portion of the route is moderate (ADT of 16,100), and the duration of views is short (a matter of seconds given the undulating topography). The resultant rating is moderate.

Impact Severity: Given the even greater distance from the Project at 10.5 miles, the impact severity is less than rated for KOPs 8 and 9, since the visual proportion of the Project to the total landscape is reduced. The impact of the Project is less than the adjacent telephone poles and power lines. The impact severity is low.

Impact Level: Given that the view quality is moderately high, the viewer sensitivity is moderate and the severity is low, the impact from KOP 10 would be adverse, but less than significant *(Class III)*.

Nighttime Light and Glare Impacts

CEQA requires that potential new sources of light and glare be considered in project evaluations. In this case, construction impacts are not considered significant, given that

most of the work would be done during the day, and the Applicant has no plans for major nighttime construction at heights visible from the surrounding community as identified by the KOPs.

Figures 3.2-21 through 3.2-26 were prepared to represent nighttime conditions when the landscape would be most visible, using as a reference basis a time after sunset, and when Project lighting would have the highest probability of being seen by potential viewers. In summary, the only potential light would be from FAA-required beacons at the end of each array of WTGs, as discussed in Section 3.2.3. Simulations were prepared and the results are illustrated in Figures 3.2-21 through 3.2-26.

KOP 1: SR-1 Near El Jaro Creek (Figure 3.2-21). At this location, when comparing Photo A (baseline conditions) to B (simulated conditions), there is the potential for three to four beacons to be visible. However at the distance of 4.5 miles, it is doubtful that they would be more than barely visible. They would be very small in comparison to lights from adjacent structures or headlights from oncoming cars. The nighttime light and glare impact from KOP 1 would be adverse, but less than significant (*Class III*).

KOP 4: Jalama Beach County Park (Figure 3.2-22). At this location, there is the potential for four to five beacons to be visible. Again at the distance of 4.5 miles, while proportionately small in comparison to the lights from adjacent structures such as the restroom visible in the simulation, they would change the character of the nighttime views. Given the high viewer sensitivity, the impact severity exceeds the threshold of significance. The nighttime light and glare impact from KOP 4 would be significant (*Class I*).

KOP 5: Surf Beach Parking Lot (Figure 3.2-23). At this location, there is potential for the tops of several beacons to be visible (although this could not be accurately determined without precise locations of the beacon towers, which were not provided). However, even if visible, the distance of 7.5 miles and the potential for nearer lighting from the VAFB tracking station lighting would result in an adverse, but less than significant (*Class III*) nighttime light and glare impact from KOP 5.

KOP 7: Lompoc West: Lemon Avenue at "X" Street (Figure 3.2-24). At this location, there is the potential for two to four beacons to be visible. However at the distance of 4.5 to 6 miles, it is doubtful that they would be more than barely visible. They would be very small in comparison to adjacent lights from streetlights, structures, or headlights from oncoming cars. The nighttime light and glare impact from KOP 7 would be adverse, but less than significant (*Class III*).

KOP 8: Figure 3.2-25. At this location, there is the potential for five to six beacons to be visible. However at the distance of 7.5 miles, it is doubtful that they would be more than barely visible, and most would not be seen against the sky. They would be seen in the context of the ambient light from Lompoc, which would be visible over much of the vista. While daytime viewer sensitivity from this location was rated high, there are almost no night visitors, a fact that reduces the sensitivity factor to low. The nighttime light and glare impact from KOP 8 would be adverse, but less than significant (*Class III*).

KOP 9: Figure 3.2-26. At this location, there is the potential for 10 to 12 beacons to be visible. However at the distance of 10.5 miles, it is doubtful that they would be visible except under the most clear nighttime conditions. While the daytime sensitivity was rated as moderate, it

would be low at night given that the number of tourists would be minimal. The beacons would be seen in the context of the VAFB tracking station lighting and would essentially be imperceptible. The nighttime light and glare impact from KOP 9 would be adverse but less than significant (*Class III*).

Possible Visual Impacts on Private Adjacent Ranches

While CEQA limits its visual analysis requirements to views from public places, such as roads or recreation areas, it is important to discuss the visual impacts to the nonparticipating ranches adjacent to the Project.

A WTG that is nearly 500 feet tall from the ground to the tip of the highest blade rotation, and with a truck-sized generator located 200 to 330 feet above the ground, when fully visible, would have the potential to create significant impacts if visible within a 3-mile radius. This fact is confirmed with the Sinclair-Thomas ratings in Table 3.2-1. Further, such structures would be highly visible within a radius of less than 5 miles when silhouetting within a direct line of sight. This condition would apply to those ranches within the general area of the San Miguelito Creek watershed, as well as ranches who lease land for the LWEF.

Even though the precise locations of the WTGs have not been established, the residents of nonparticipating ranches would be subjected to what could be considered significant and unavoidable (*Class I*) visual impacts if they were a public place. More precise detail regarding the location of the WTGs in relationship to potentially affected private residences would be required to analyze visual impacts on them. Visual impacts to private properties are outside the scope of this EIR.

Possible Visual Impacts on San Miguelito Road South of Miguelito County Park

While KOP #3 reviewed the impacts for the power line north of Miguelito County Park as a traveler heads toward the City of Lompoc, there is also the potential for visual impacts along upper San Miguelito Road south of the park. At this point the road becomes steeper and less traveled since it serves only the ranches in the Project vicinity. This area would be affected by the construction process, which would result in adverse, but less than significant (*Class III*) construction impacts from the development of WTG sites, laydown areas, the transport of the WTG components, and the potential removal or trimming of some trees to accommodate the large trucks that would be used. The operational impacts would change the visual character of upper San Miguelito Road. However, the viewer sensitivity is rated as low since there would be very few travelers, and the majority of the users of the road would be related to the ranches that have agreed to have the Project. The operational impacts are also rated as adverse, but less than significant (*Class III*).

3.2.5.6 Synthesis of Project Impacts

Based upon the analysis presented, the following Project-level impacts would be generated.

Impact No.	Impact Description	Phase	Impact Classification
VIS-1	WTGs and related structures have the potential to be visible in the vicinity of the Project.	Construction and Operations	Class III

Impact VIS-1. Construction and operation of the Project will be visible from San Miguelito Road, near its terminus. Visual impacts will be caused by the WTGs, O&M facility, and other Project structures, signage, and onsite electrical lines, access roads, lighting, landscaping, and facility upkeep practices, including materials and equipment storage. The Project would be subject to the development standards of Section 35.57.050 of the County LUDC, which includes requirements for WTG appearance, facility appearance and lighting, and visual screening. Although San Miguelito Road is considered a public viewing area, it is in a remote location and dead-ends at the Project site. It is lightly traveled by the public and, therefore, is considered of low visual sensitivity. Consequently, visual impacts would be adverse, but less than significant *(Class III)*.

Impact No.	Impact Description	Phase	Impact Classification
VIS-2	Westernmost WTGs would be visible to users of Jalama Beach County Park.	Construction and Operations	Class I

Impact VIS-2. Construction and operation of WTGs in the westernmost arrays of the Project area would be visible to users of Jalama Beach County Park (KOP 4) approximately 4.5 miles distant (both during daytime and nighttime periods). The tips of the blades in this particular case are considered to be the rough equivalent of other VAFB tracking facilities, also visible from KOP 4. Based upon the generalized reasonable worst-case analysis (80 WTGs), three WTGs would be visible near the base of Tranquillon Mountain, and an estimated ten would be visible in the southern-most WTG array along the ridgeline. This impact would be significant and unavoidable *(Class I)*. As discussed in Section 5.3.1, both LWEF Alternatives 1 and 2 would result in less than significant visual impacts.

Impact No.	Impact Description	Phase	Impact Classification
VIS-3	WTGs would be visible throughout the SR-1 corridor and the Lompoc Valley.	Operations	Class III

Impact VIS-3. WTGs visible throughout the SR-1 corridor and the Lompoc Valley (KOPs 1, 3, and 5 through 10) would result in adverse, but less than significant impacts during both daytime and nighttime periods (*Class III*).

Impact No.	Impact Description	Phase	Impact Classification
VIS-4	Placement of the power line in the area of SR-1 introduces a significant new series of power poles that would silhouette against the skyline.	Operations	Class I

Impact VIS-4. Placement of the power line in the area of SR-1, as seen in KOP 2, introduces a significant new series of power poles that would silhouette against the skyline. This impact would be significant and unavoidable *(Class I)*.

To reduce impacts, the applicant proposes to replace the most visible portions of the power line by connecting the new power line starting at angle point 19 to the existing Celite power line just beyond the visible ridgeline. This partial line replacement to co-locate with the Celite line is discussed in the section on project alternatives (Section 5.3.2).

Impact No.	Impact Description	Phase	Impact Classification
VIS-5	Construction and operation of the power line would be visible from public roadways.	Construction and Operations	Class III

Impact VIS-5. Construction and operation of the power line visible from public roadways such as San Miguelito Road would result in adverse, but less than significant impacts (*Class III*).

3.2.5.7 Synthesis of Project's Contribution to Cumulative Impacts

Based upon the analysis presented in Section 4.5.1 under impact C-VIS-3 Cumulative Impacts, the Project would contribute to cumulatively significant and unavoidable (*Class I*) impacts related to the degradation of scenic resources in the coastal zone areas of the Lompoc Valley and northern Santa Barbara County.

3.2.5.8 Applicant-proposed Mitigation Measures

The following Applicant-proposed mitigation measures are considered part of the Project description. They have been refined to reflect County of Santa Barbara Standard Conditions of Approval and Mitigation Measures (Santa Barbara County, 2005), including renaming them as visual resource mitigation measures and adding plan requirements, timing, and monitoring actions that would be required.

Mitigation Measure A-VIS-1: Materials Storage. All construction materials and excavated materials shall be stored away from San Miguelito Road, whenever possible, to reduce impacts on mountain views. Materials storage shall be confined to within the WTG right-of-way, staging areas, and the Project Substation and O&M facility areas.

Plan Requirement: County staff will confirm that a notation regarding materials storage is denoted on building plans.

Timing: County staff will review and approve the plan notation prior to zoning clearance for the first phase of project construction and prior to zoning clearance for subsequent project phases.

MONITORING: County staff will conduct inspections during construction activities along San Miguelito Road to confirm and enforce compliance *(Addresses Impact VIS-1*).

Mitigation Measure A-VIS-2: Location of Construction Activities. Construction activities shall be confined to within the WTG right-of-way, staging areas, and the Project Substation and O&M facility areas.

Plan Requirement: County staff will confirm that a notation regarding construction activities and materials storage is denoted on building plans.

Timing: County staff will review and approve the plan notation prior to zoning clearance for the first phase of project construction and prior to zoning clearance for construction of subsequent project phases.

MONITORING: County staff will conduct inspections during construction activities to confirm and enforce compliance *(Addresses Impact VIS-1*).

Mitigation Measure A-VIS-3: Power Line. Where possible, particularly on nonparticipating ranches, the power line shall follow the existing distribution lines. Where possible, existing distribution and power lines shall be built below the proposed power line to consolidate facilities.

Plan Requirement: County staff will confirm that all feasible consolidation efforts have occurred.

Timing: County staff will review and approve the final plans prior to zoning clearance for the first phase of project construction and prior to zoning clearance for subsequent project phases.

MONITORING: County staff will conduct inspections during construction activities to confirm and enforce compliance *(Addresses Impact VIS-5*).

Mitigation Measure A-VIS-4: Power Line Relocation/Pole Height. At the southeast corner of the City of Lompoc, where the power line route would be visible from SR-1, the following measures shall be used, where technically feasible, to minimize visual impacts: longer spans between the poles; shorter poles; straddle ridgeline with two poles instead of a single pole on the ridge line.

Plan Requirement: Power line location and pole sizing shall be submitted to the County for review and approval.

Timing: County shall approve plan prior to issuance of the zoning clearance for the first phase of construction.

MONITORING: County staff will inspect prior to occupancy clearance (*Addresses Impact VIS-4*).

3.2.5.9 Additional Mitigation Measure

In addition to the Applicant-proposed mitigation measures, the following additional mitigation measure will be implemented to provide the maximum feasible mitigation under CEQA for the Project's contribution to cumulatively significant and unavoidable (*Class I*) impacts related to the degradation of scenic resources in the coastal areas of the Lompoc Valley and northern Santa Barbara County. This mitigation measure would not be required if LWEF Alternatives 1 or 2 (Section 5.3.1) were selected.

Mitigation Measure VIS-1: Contribution to County Parks Fund. The Applicant shall make a one time $100,000 payment to the County. This money shall be used by the County Parks Department exclusively to preserve and enhance the natural beauty of County Parks located within the coastal zone in the region.

Plan Requirement and Timing: The Applicant shall provide the payment prior to the zoning clearance for the first phase of construction.

MONITORING: County staff will confirm receipt of payment prior to the zoning clearance for the first phase of construction (*Addresses Impact C-VIS-3*).

3.2.5.10 Residual Impacts

With the implementation of the mitigation measures, residual impacts will be less than significant for Impacts VIS-1, VIS-3, and VIS-5. The residual impacts for Impact VIS-2, VIS-4, and C-VIS-3, would remain significant.