

5.13 Visual Resources

Visual resources are the natural and cultural features of the environment that can be seen and that contribute to the public's enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent that the project's presence changes the visual character and quality of the environment in which it is located.

This section was prepared following California Energy Commission (CEC) guidelines for preparing visual impact assessments for Applications for Certification (AFC). Section 5.13.1 documents the visual conditions that exist in the Mariposa Energy Project (MEP) area. Section 5.13.2 discusses the potential environmental effects as they relate to visual resources. Section 5.13.3 discusses the potential cumulative effects of this and other projects in the area. Section 5.13.4 summarizes the mitigation measures proposed to reduce project impacts on visual resources. Section 5.13.5 describes the laws, ordinances, regulations, and standards (LORS). Section 5.13.6 presents agencies involved and agency contacts. Section 5.13.7 lists permits required. Section 5.13.8 provides the references used in preparation of this section.

5.13.1 Affected Environment

5.13.1.1 Regional Setting

MEP is located on a 158-acre parcel in the unincorporated northeastern corner of Alameda County (see Figure 1.1-2 in Section 1.0). The project site is approximately 1 mile south of the Contra Costa County border and approximately 2.5 miles west of the San Joaquin County border. The unincorporated community of Mountain House is located in San Joaquin County and is the closest urbanized area. Livermore, located approximately 7 miles to the southwest in Alameda County, is the nearest incorporated city to the project site.

The land surrounding the project site is mostly grassy and hilly, and the area is characterized by agricultural, power generation, and water management facilities. The landscape includes several prominently visible infrastructure facilities. Rural residential and recreational uses are also located in the area. The project site is located within land that is designated for large parcel agricultural uses, and grazing occurs on most of the land within a mile radius of the project site. The Byron Power Cogen Plant is northeast of the project site on the same parcel. The Pacific Gas and Electric Company (PG&E) Kelso Substation and Bethany Compressor Station are located approximately 0.3 miles to the north of the project site, along Kelso Road. Farther east on Kelso Road is the Western Area Power Administration (WAPA) Tracy Substation, approximately 1 mile away. Wind energy installations, highly visible in the hills to the west, are active in the general area; the closest of these, the Altamont Pass Wind farm, lies approximately 1 mile to the southwest of the project area.

The California Department of Water Resources Delta Pumping Plant is located approximately 1 mile to the northwest of the project site, near the end of Kelso Road and midway along the California Aqueduct between Clifton Court Forebay and Bethany Reservoir. The Delta-Mendota Canal is approximately 0.7 miles to the east of the project site, and the Tracy Pumping Plant, managed by the U. S. Bureau of Reclamation, is located approximately 1 mile northeast of the project site, along Kelso Road. The Bethany Reservoir

State Recreation Area is approximately 0.7 miles southwest of the proposed project site. Mountain House School, an elementary school, is located approximately 1.3 miles east of the project site, along Mountain House Road.

Population density in the vicinity of the project site is low, with fewer than a dozen residences located within 1 mile of the proposed MEP location. Most of these residences are scattered along Kelso Road northeast of the project site. Among the closest residences is a small cluster of homes approximately 0.6 miles away from the project site. Residences associated with agricultural uses are also located to the west of the project site.

There are no officially designated State Scenic Highways in the vicinity of the project site. Mountain House Road, a road that runs north/south approximately 1.3 miles east of the project site, is identified as a Major Rural Road in the Scenic Route Element of the General Plan of Alameda County (Alameda County, 1994). Policies related to the scenic highways in Alameda County are described in Section 5.13.5.

5.13.1.2 Project Site and Linear Routes

The MEP site occupies 10 acres of the 158-acre parcel within which it is located. The majority of the 10 acres are located in a northeast-southwest oriented hollow, between hills to the east and west. The site is accessed via an approximately 1,100-foot-long road that extends from a main entrance along Bruns Road. This easement also provides access to the 6.5-megawatt (MW) Byron Power Cogen Plant, a small cluster of structures that occupies 2 acres to the immediate north of the project site. The portion of the parcel that includes the project site contains remnants of prior wind turbine development that has been removed except for minor debris. Figure 1.1-3 in Section 1.0 shows the location of the project site within the surrounding area.

Several transmission lines are present in the vicinity of the project site. A 230-kilovolt (kV) line and a 60-kV line run along Bruns Road west of the project site. At its closest point, the 230-kV line is less than 600 feet away from the project site, though the two are separated by a hill. To the east, two 500-kV lines run parallel to each other, in generally north-south orientation. These lines are approximately 1,200 feet away at their closest location to the project site. The new plant will require a natural gas tie-in to a nearby gas pipeline, and a transmission line to the Kelso Substation, approximately 0.5 miles north of the project site. A water supply pipeline will connect to the site from the Bethany Byron Irrigation District (BBID) Canal 45, located in Contra Costa County, approximately 1.3 miles away from the project site.

5.13.1.3 Construction Laydown Area

Temporary construction facilities will include a 5-acre worker parking and laydown area immediately east of the project site, a 1-acre water supply pipeline parking and laydown area located at the BBID headquarters facility on Bruns Road, and a 0.6-acre laydown area along the transmission line route adjacent to the PG&E Kelso Substation and Bethany Compressor Station.

5.13.1.4 Potential Project Visibility

The project site is visible in unobstructed views from points near the intersection of Kelso Road and Bruns Road. Views of the project site from locations throughout the surrounding

area are more intermittent because of the topography of the site itself and the nearby land, which form a bowl-like setting within which the project will be located. The project site is screened to some degree from many parts of the nearby area by this land form, as well as by the presence of mature vegetation and existing structures, which limit the areas from which there is a potential for sustained, unobstructed views of the project site.

5.13.1.5 Sensitive Viewing Areas and Key Observation Points

To structure the analysis of MEP's effects on visual resources, the view areas that would be the most sensitive to the project's potential visual impacts and the sensitive receptors in those areas were identified.¹ Representative viewpoints from these sensitive receptor locations are referred to as Key Observation Points (KOPs). The five KOPs chosen for this analysis represent the best viewing conditions from the five major areas of viewer sensitivity: the closest public road (Bruns Road); the closest residential area from which the project would likely be visible; the nearby State Recreation Area; the school house located approximately 1.3 miles to the east of the project site; and the Mountain House community, which is the nearest urbanized area, approximately 2.5 miles from the site. Two additional views, one from within the Mountain House community and one from the top of Brushy peak are included in this section as existing character views. These views, from within the Mountain House community and from the top of Brushy Peak, further demonstrate the visibility of the project site within the surrounding area, but are not KOPs to be used in the visual impact analysis. The view from the Mountain House community was added per direction from CEC. The view from Brushy Peak was added by request from the California State Department of Conservation.

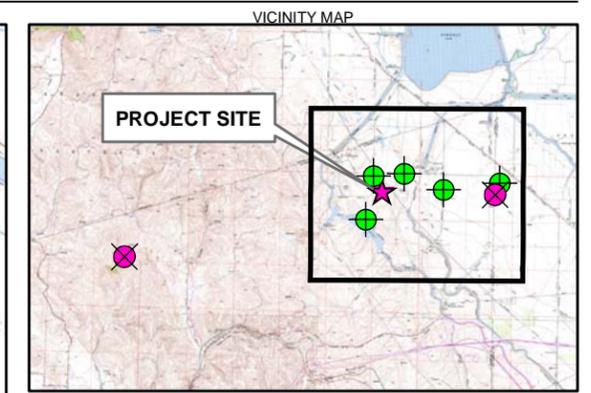
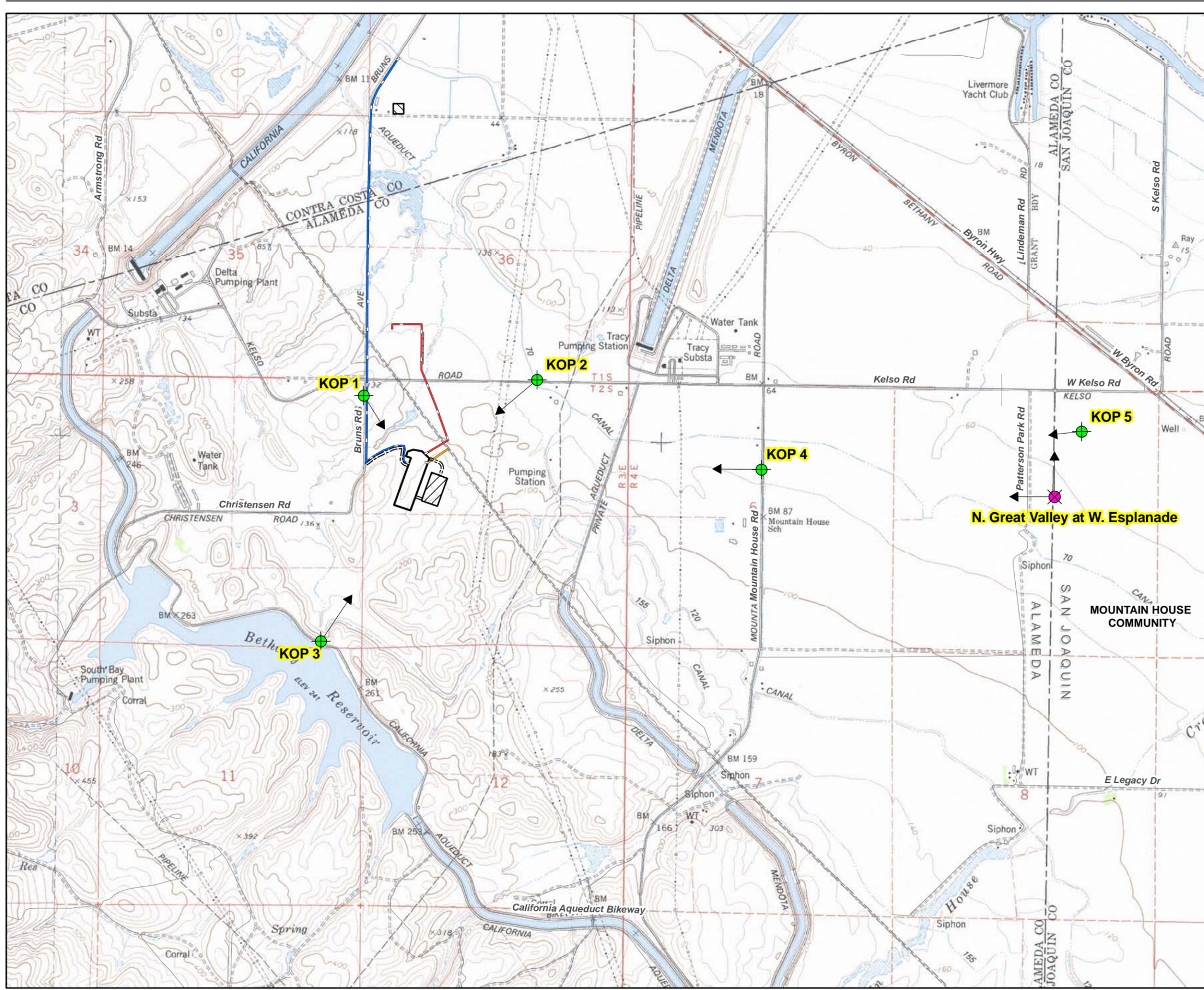
Based on fieldwork conducted in March 2009 by CH2M HILL staff, the existing visual conditions of the views from each of the five KOPs were documented and evaluated. Assessments of existing visual conditions were made based on professional judgment that took into consideration the following conditions: visual quality, viewer concern, visibility, number of viewers, and duration of view. These conditions were then factored into an overall rating of viewer exposure and viewer sensitivity. This is the approach used by the CEC in making a determination of impact in the visual resource analysis for the Staff Report of the Avenal Energy project (CEC, 2009). CEC applies the following definitions to this approach:

- **Visual Quality** – An expression of the visual impression or appeal of a given landscape and the associated public value attributed to the resource. Visual quality is rated from high to low. A high rating is generally reserved for landscapes viewers might describe as picture-perfect. Landscapes rated high generally are memorable because of the way the components combine in a visual pattern. Additionally, those landscapes are free from encroaching elements, thus retaining their visual integrity. Finally, landscapes with high visual quality are visually coherent and harmonious when each element is considered as part of the whole. On the contrary, landscapes rated low are often dominated by visually discordant human alterations.

¹ Typically, residents and recreationists are considered to be sensitive receptors to changes in the landscape. This is because of the potential for effects to their long-term views or their enjoyment of a particular landscape or activity.

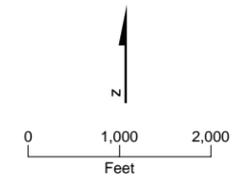
- **Viewer Concern** – Viewer concern represents the reaction of a viewer to visible changes in the viewshed – an area of land visible from a fixed vantage point. For example, viewers have a high expectation for views formally designated as a scenic area or travel corridor as well as for recreational and residential areas. Viewers generally expect that those views will be preserved. Travelers on highways and roads, including those in agricultural areas, are generally considered to have moderate viewer concerns and expectations. However, viewers tend to have low-to-moderate viewer concern when viewing commercial buildings. Industrial uses typically have the lowest viewer concern. Regardless, the level of concern could be lower if the existing landscape contains discordant elements. Additionally, some areas of lower visual quality and degraded visual character may contain particular views of substantially higher visual quality or interest to the public.
- **Visibility** – Visibility is a measure of how well an object can be seen. Visibility depends on the angle or direction of views; extent of visual screening; and topographical relationships between the object and existing homes, streets, or parks. In that sense, visibility is determined by considering any and all obstructions that may be in the sightline, including trees and other vegetation, buildings, transmission poles or towers, general air quality conditions such as haze, and general weather conditions such as fog.
- **Number of Viewers** – Number of viewers is a measure of the number of viewers per day who would have a view of the proposed project. Number of viewers is organized into the following categories: residential according to the number of residences, motorist according to the number of vehicles, and recreationists.
- **Duration of View** – Duration of view is the amount of time to view the site. For example, a high or extended view of a project site is one reached across a distance in 2 minutes or longer. In contrast, a low or brief duration of view is reached in a short amount of time – generally less than 10 seconds.
- **Viewer Exposure** – Viewer exposure is a function of three elements previously listed: visibility, number of viewers, and duration of view. Viewer exposure can range from low to high value. A partially obscured and brief background view for a few motorists represents a low value; an unobstructed foreground view from a large number of residences represents a high value.
- **Visual Sensitivity** – Visual sensitivity is comprised of three elements previously listed: visual quality, viewer concern, and viewer exposure. Viewer sensitivity tends to be higher for homeowners or people driving for pleasure or engaged in recreational activities and lower for people driving to and from work or as part of their work.

Existing conditions in views from each of the five KOPs are described below. Figure 5.13-1 shows the location of each KOP relative to the project site. Figures 5.13-2 through 5.13-6 show the views from each KOP. Figures 5.13-7a, 5.13-7b, and 5.13-8 show views from two additional areas added to further demonstrate the existing visual character in the area. The locations of these additional views are also shown in Figure 5.13-1.



- LEGEND**
- KEY OBSERVATION POINT (KOP) LOCATIONS
 - ★ VISUAL CHARACTER VIEW
 - ➔ VIEW DIRECTION
 - ROADS
 - ACCESS ROAD
 - NATURAL GAS PIPELINE ROUTE
 - TRANSMISSION LINE ROUTE
 - WATER SUPPLY PIPELINE ROUTE
 - ▨ CONSTRUCTION LAYDOWN/PARKING AREA
 - ▨ TRANSMISSION LINE LAYDOWN AREA
 - ▨ WATER SUPPLY PIPELINE LAYDOWN AREA
 - ▭ PROJECT SITE

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.



**FIGURE 5.13-1
KEY OBSERVATION POINT
LOCATIONS**
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



Figure 5.13-2a: View to the southeast toward the project site from the southbound lane of Bruns Road, south of the intersection of Bruns Road and Kelso Road. The Byron Power Company cogeneration plant is visible in the left portion of the view, north of the proposed project site.



Figure 5.13-2b: View from KOP 1 with project.

FIGURE 5.13-2
KEY OBSERVATION POINT 1
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



Figure 5.13-3a: View to the southwest toward the project site from the westbound lane of Kelso Road. The cluster of residences closest to the project site is located approximately one-tenth of a mile to the southeast of this viewpoint.



Figure 5.13-3b: View from KOP 2 with project.

FIGURE 5.13-3
KEY OBSERVATION POINT 2
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



Figure 5.13-4a: View to the northeast toward the project site from the California Aqueduct Bikeway, which runs along the northern edge of the Bethany Reservoir. The Byron Power Company cogeneration plant is visible in the center of this view, and the Clifton Court Forebay is visible beyond the project site, to the north.



Figure 5.13-4b: View from KOP 3 with project.

FIGURE 5.13-4
KEY OBSERVATION POINT 3
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



Figure 5.13-5a: View to the west from Mountain House Road, approximately one-fifth of a mile north of Mountain House School. The roof of the Byron Power Company cogeneration plant is visible near the center of the view.



Figure 5.13-5b: View from KOP 4 with project.

FIGURE 5.13-5
KEY OBSERVATION POINT 4
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



Figure 5.13-6a: View to the west from intersection of North Great Valley Parkway and West Rialta Ranch Drive, within Mountain House. The project site is in the center-left portion of this view.



Figure 5.13-6b: View from intersection of North Great Valley Parkway and West Rialta Ranch Drive with the project, which is visible at the base of the foothills in the distance.

FIGURE 5.13-6
KEY OBSERVATION POINT 5
 MARIPOSA ENERGY PROJECT
 ALAMEDA COUNTY, CALIFORNIA



View to the west from intersection of North Great Valley Parkway and West Esplanade Drive, along the western edge of Mountain House community. The project site is in the left portion of the view but is mostly obstructed by the fence and the tree on the left.

**FIGURE 5.13-7A
VIEW FROM
MOUNTAIN HOUSE
COMMUNITY**

*MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA*



View to the north from intersection of North Great Valley Parkway and West Esplanade Drive, along the western edge of Mountain House community. The wall visible in the right side of the view, to the right of the sidewalk, is typical of walls that have been constructed along the entire western edge of Mountain House. These walls separate residences from Great Valley Parkway, and would also obstruct views toward the project site from ground-level residences and other locations within the residential area.

**FIGURE 5.13-7B
VIEW FROM
MOUNTAIN HOUSE
COMMUNITY**

*MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA*



View to the east toward the project site from the top of Brushy Peak. The project site appears in this view approximately between Clifton Court Forebay to the north (in the left portion of the view, beyond the hills and wind turbines) and Bethany Reservoir, to the south (in the right portion of the view, also beyond the hills and wind turbines).

**FIGURE 5.13-8
VIEW FROM TOP OF
BRUSHY PEAK**

*MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA*

5.13.1.5.1 KOP 1 – View from Bruns Road

Figure 5.13-2a depicts the view from KOP 1, located just under 0.3 miles northwest of the closest portion of the project site. This viewpoint was selected because it has the most unobstructed view of the project from the closest public roadway. KOP 1 is located just south of the intersection of Bruns Road and Kelso Road. This view is seen mostly by motorists who are traveling to Bethany Reservoir, but also by local residents and workers who may be en route to one of the few homes or workplaces in the local area. Because this viewpoint shows the closest and least obstructed view of the project site, it provides the basis for developing a worst-case assessment of MEP's visual effects on this area.

The visual quality of this view is moderately low. While the hilly terrain provides vividness to the area, human alterations encroach on the view, as evidenced by the presence of the Byron Power Cogen Plant and the numerous transmission towers and lines, visible both in the distance and in the immediate foreground. The transmission lines also encroach on the distant skyline and the variety in their size, type, and orientation contribute to an overall discordance and lack of coherence.

Viewer concern is assumed to be moderate in this area. The project site and surrounding area includes a number of discordant elements, and industrial uses typically have the lowest viewer concern. However, the landscape immediately surrounding the project site is characterized by agricultural uses, and viewer concerns in such areas are considered to be moderate. Additionally, some viewers of the project from this vantage point will be recreationists, traveling to Bethany Reservoir.

Visibility of the project site from KOP 1 is high; as described previously, this is the closest, least obstructed view of the area from a nearby public road. The number of viewers from KOP 1 is relatively low, as is one residence and two places of work in the immediate area. As described in Section 5.12, Traffic and Transportation, the current annual average daily traffic volume on Bruns Road is 286 vehicles (see Table 5.12-3). The duration of view is brief. The project site is within motorists' field of vision once they are south of the intersection of Kelso Road and Bruns Road. The unobstructed view of the entire project site as shown in Figure 5.13-2a is fleeting; as vehicles travel south, the project site is increasingly obscured by a hill along the east side of the road while moving out of the viewer's field of vision at the same time.

Because of the high visibility of the project site from the KOP, nearness of the view, the relatively low number of viewers, and brief duration of view, viewer exposure from KOP 1 is moderate. The KOP provides an unobstructed view of the project site, but the view is relatively short in duration and will not be seen from a large number of residences. Visual sensitivity is moderately low because of the moderately low visual quality of the area and the moderate level of viewer concern, which is due to the number of viewers likely to be driving to Bethany Reservoir for recreational purposes. Views of the project site from KOP 1 will be brief.

5.13.1.5.2 KOP 2 – View from Kelso Road

Figure 5.13-3a depicts the view from KOP 2, located approximately 0.5 miles northeast of the closest portion of the project site. This viewpoint was selected because it provides the first direct view of the project site from the westbound lane of Kelso Road. It is also intended to approximate the view from the scattering of residences located nearby, though

the homes in the area appear to be set among clusters of mature trees that would likely obstruct most views to the west. This view is therefore seen by a variety of motorists and a limited number of residents. Motorists include people traveling to their workplace, which could include any of the agricultural, energy production, and water management facilities in the area. Motorists also include recreationists who are traveling to Bethany Reservoir and local residents who may be using Kelso Road to access Byron Highway to the north (via Bruns Road).

The visual quality of this view is moderately low. As with the view from KOP 1, the hilly terrain provides a natural feature of interest, and Brushy Peak is visible in the background (in the center-right of the view). However, human-made structures define the environment as much as the natural topography, with multiple transmission lines and a water conveyance canal visible, along with numerous wind turbines that appear with only the sky as background. These features combine to form a visual environment that is lacking in coherence.

Viewer concern is assumed to be high in this area because the view is intended to represent the view from nearby residences. In addition to local residents, viewers include motorists traveling for purposes of work and recreation, as described above.

Visibility of the project site itself from KOP 2 is moderately low. The Byron Power Cogen Plant is not visible from this location, nor is the ground area south of the cogen plant. The power plant itself will be visible from this viewpoint, though it will appear among a series of low-lying hills. The number of viewers at this viewpoint is assumed to be moderate, as residents, workers, travelers, and recreationists all travel along westbound Kelso Road. The annual average daily traffic volume for Kelso Road is 663 vehicles (see Section 5.12). The duration of view by motorists is moderate in length, since the project site becomes increasingly visible as one travels westbound on Kelso Road before it passes out of the motorists' field of vision. Views from any residence in this area would be fixed and of extended duration.

Viewer exposure for KOP 2 is moderate. Visibility of the project site is moderately low (but would increase for viewers traveling westward on Kelso Road), and the number of viewers is assumed to be moderately high relative to the surrounding area. The overall duration of view is moderate in length, but would be extended for nearby residences with direct views of the area. Visual sensitivity is moderately high. Although the visual quality of the view is moderately low, viewer concern is high on account of the presence of residences in the area and the likelihood that at least some of the motorists are traveling to Bethany Reservoir for purposes of recreation.

5.13.1.5.3 KOP 3 – View from Bethany Reservoir

Figure 5.13-4a depicts the view from KOP 3, located approximately two-thirds of a mile southwest of the closest portion of the project site. This viewpoint was selected because it provides a view from the area's closest recreation area, Bethany Reservoir State Recreation Area. The view shown in KOP 3 is from the California Aqueduct Bikeway, which is approximately 0.5 miles from the recreation area's parking lot. This vantage point provides a direct, unobstructed view toward the project site. From the parking lot, where there would be more potential vividness than on the bikeway, the project site would only be partially visible. There is no vehicular access along the bikeway, which means that viewers from the

KOP are people who are biking or walking along the levee that forms the northern edge of the reservoir. Views toward the site from boats on the reservoir would be obstructed by the levee; at the time of the site visit in early spring, the water level was approximately 10 feet below the bikeway. The selection of this view for KOP 3 was intended to demonstrate the maximum potential visibility of the project area from the Bethany Reservoir area.

The visual quality of this view is moderately low. The Byron Power Cogen Plant and adjacent project site are visible in the center of the view, beyond the grazing land in the foreground. Other nearby structures and facilities along Kelso Road are also visible, including the PG&E Kelso Substation, agricultural structures, and the 500-kV transmission towers associated with the Tracy Substation. Several other transmission lines are visible from this vantage point. Clifton Court Forebay is visible in the background of the view, but transmission towers across the horizon encroach upon direct views of the water. Overall, the view from KOP 3 generally lacks the harmony that would contribute to a more moderate level of visual quality.

Viewer concern is moderate in this area. Viewers in this area are predominantly recreationists, who are assumed to have high levels of viewer concern and expectation. However, views of the reservoir and the wind turbines near the reservoir are in a direction opposite the project site. Viewers in the vicinity of KOP 3 are likely to take in the expansive view toward the project site (which contains discordant visual elements as described above), but are more likely to take interest in the more proximate views to the south and west, within the State Recreation Area. Similarly, although the project site is partially visible from the reservoir's parking lot, most activity in the parking lot is focused on boating, and the put-in location for the reservoir is on the southeastern edge of the parking lot, from which there is no view of the project site.

Visibility of the project site from KOP 3 is moderately high. The vantage point is aligned so as to provide a view directly up the hollow in which the power plant will be constructed, approximately 0.5 miles away. The number of viewers is relatively low along the bikeway, since most of the activity along the reservoir is concentrated on the water and at the portion of the parking lot where boats put in to the water. Duration of view is high, since viewers looking toward the project site from this area will be either pedestrians or bike riders. Duration of views for pedestrians would exceed 2 minutes, which is considered by CEC staff as a high or extended view. Duration of views for bicyclists would likely be shorter than 2 minutes, but would exceed 10 seconds; the CEC staff considers a low or brief duration of view as being generally less than 10 seconds. From other points along the bikeway, the project site is less visible.

Viewer exposure for KOP 3 is moderately high, since the project site would be readily visible for a relatively long duration to a relatively low number of people. Visual sensitivity is moderate, since the visual quality of the view is moderately low, but viewer concern for the relatively few viewers expected to take in the view toward the project site is moderate. Viewer exposure would be assumed to be moderate for bicyclists and higher for pedestrians.

5.13.1.5.4 KOP 4 – View from Mountain House Road

Figure 5.13-5a depicts the view from KOP 4, located approximately 1.3 miles to the east of the project site's eastern boundary. This viewpoint was selected to approximate the view

toward the project site from Mountain House School and to include a view from the nearest locally designated scenic route. Views to the west from the school itself are completely obstructed by structures and mature trees adjacent to the school. KOP 4 is located approximately 0.2 miles north of the school, and provides a direct, unobstructed view across agricultural land toward the project site.

The visual quality of this view is moderate. Both Mount Diablo to the north (in the right edge of the view) and Brushy Peak to the south (in the left portion of the view) are visible from this location. Wind turbines throughout the hills are visible but are mostly subordinate to the topography of the hills. However, several wind turbines still visibly encroach on the distant skyline and the foreground is characterized by the presence of a relatively large transmission tower. These human alterations contribute to a moderate level of visual discord in the view.

Viewer concern is moderately high in this area. Mountain House Road is designated as a Major Rural Road in the Scenic Route Element of the Alameda County General Plan. Viewers in this area include people traveling to and from Mountain House School; those traveling to residences, workplaces, or Bethany Reservoir; and those using Mountain House Road as a connecting route between points north, south, or east.

Visibility of the project site itself from KOP 4 is moderately low. The roof of the Byron Power Cogen Plant is visible in the center of the view, and the proposed power plant would be visible to the south, appearing within the low hills. The number of viewers traveling on Mountain House Road is moderate and is higher than the number of viewers traveling along other local roads (annual average daily volume of 3,366 vehicles; see Section 5.12). Views of the project site are at a nearly 90-degree angle from the KOP, however, which means that while the project site is clearly visible to more potential viewers, it is outside the assumed field of vision for drivers. Duration of view from this KOP is moderate, since passengers looking toward the project site from a vehicle traveling along Mountain House Road would see it for more than 10 seconds but for fewer than 2 minutes if traveling at a speed typical for the rural road.

Viewer exposure for KOP 4 is moderate. The project site is visible from an area where a moderate number of motorists travel along a rural roadway and would have views of moderate duration. However, the view would also be a distant one, and one that would not fall within the field of vision typical of motorists presumed to be focused on the roadway. Visual sensitivity is moderately high, given the view's moderate visual quality and viewer exposure and a moderately high viewer concern associated with Mountain House Road's designation as a locally scenic route. The presence of a school nearby also contributes to the assessment of visual sensitivity, though the project site is not visible from the school.

5.13.1.5.5 KOP 5 – View from Mountain House Community

Figure 5.13-6a depicts the view from KOP 5, located approximately 2.5 miles to the east of the project site's eastern boundary. This viewpoint was selected to approximate the view toward the project site from the Mountain House community. KOP 5 is located just east of a portion of Mountain House that is planned for future neighborhood commercial development. At present, it provides a direct, unobstructed view across mostly agricultural land toward the project site.

The visual quality of this view is moderate. Mount Diablo is partially visible to the north (in the right edge of the view) and Brushy Peak is visible to the south (in the left portion of the view). Transmission towers are visible across the horizon, in front of the more distant hills, and in some locations encroach on the distant skyline. Wind turbines are somewhat discernable within the hills in the northern portion of the view. Structures related to agriculture and natural gas and electric infrastructure are also clearly visible in the northern portion of this view. Though they are removed somewhat from the viewpoint, these human alterations contribute to a moderate level of visual discord in the view.

Viewer concern is moderately high in this area. North Great Valley Parkway is the main thoroughfare along the western edge of Mountain House, which is primarily a residential area. At present, this view is seen mainly by people traveling southbound on North Great Valley Parkway, toward the western entrance to Mountain House or to the intersection of North Great Valley Parkway and West Grant Line Road, further south. North Great Valley Parkway intersects with West Kelso Road approximately 0.15 miles northeast of this KOP, and it terminates at the intersection with Byron Highway approximately 0.30 miles to the northeast. Future viewers from this or nearby locations will include people traveling to, or already within, the planned neighborhood commercial area. However, at present, the majority of viewers in this location are assumed to be residents traveling to Mountain House.

Visibility of the project site itself from KOP 5 is low. The project site is in the center-left portion of the view, to the right and in front of Brushy Peak. The Byron Power Cogen Plant is not visible in this view, and from this location it is difficult to determine the distance between the viewer and other existing visible structures. Duration of view from this KOP is low, since vehicles traveling southbound on North Great Valley Parkway only face west toward the project site for approximately 0.3 miles before turning south. Views toward the site from points northwest of KOP 5 are intermittent due to roadside signage, lighting and other intervening objects. Views toward the site from points south of KOP 5 are eventually at a nearly 90-degree angle from the KOP and are also obstructed, partially to completely, by roadside landscaping (see discussion in Section 5.13.1.5.6, below).

Viewer exposure for KOP 5 is moderately low. The project site is, at present, directly visible from only a limited segment of the roadway near KOP 5, and the duration of such distant views is moderately short. Because of the road's distance from the project site, annual average daily traffic volumes for North Great Valley Parkway are not included in the traffic and transportation analysis of this AFC. The road is the Mountain House community's western arterial, and it can be assumed that traffic along the road will increase as Mountain House approaches total buildout. Moreover, it can also be assumed that, with construction of planned commercial uses, views from KOP 5 will be partially to fully obstructed in the future. While current and future residents of Mountain House would be expected to be concerned about views from near or within their homes and neighborhoods, visual sensitivity for this view is moderate, due to the view's moderate visual quality, moderately high visual concern, and moderately low viewer exposure.

5.13.1.5.6 Additional Character Views

Figures 5.16-7a and 5.16-7b depict views from within the Mountain House community, where the western edge of which is approximately 2.5 miles from the project site. These views were added to the set of viewpoints at the request of CEC staff to demonstrate

existing visual conditions in views toward the project site from within the Mountain House community. Figure 5.13-7a depicts the view from the intersection of North Great Valley Parkway and West Esplanade Drive. The project site is in the left half of this view, in front and to the right of Brushy Peak. However, the site is almost entirely obscured in this view by the landscaped features along the eastern side of North Great Valley Parkway; these features – the fence, berm, shrubbery and trees – extend along North Great Valley Parkway to the north and south corresponding with where Mountain House residences have been built. Figure 5.13-7b shows the view from the same intersection to the north, in which the noise wall along the western edge of North Great Valley Parkway is visible. This wall would further obstruct views toward the project site from the ground level of residences and other locations within Mountain House.

Figure 5.13-8 depicts the view from the top of Brushy Peak, approximately 6 miles southwest of the project site. The inclusion of this view was requested by the California Department of Conservation to demonstrate existing visual conditions in long-distance views from a relatively high elevation. The Department of Conservation also is interested in the recreational uses associated with the area. Brushy Peak is the second highest mountain in the region (Mount Diablo is the tallest), with an elevation of approximately 1,700 feet. Brushy Peak is managed by Livermore Area Recreation and Park District, and public access to Brushy Peak is very limited, available only through district-guided trips. In the view to the east shown in Figure 5.13-8, the project site appears approximately between Clifton Court Forebay to the north (in the left portion of the view, beyond the hills and wind turbines) and Bethany Reservoir to the south (in the right portion of the view, also beyond the hills and wind turbines).

5.13.2 Environmental Analysis

5.13.2.1 Analysis Procedure

This assessment of the proposed project's potential effects on visual resources was conducted through the review of applicable planning documents, site reconnaissance and photography, production of visual simulations, and the application of a systematic method for evaluating the potential aesthetic effects of proposed power plant projects. This method has been adopted by the staff of the CEC and was appended to its Staff Report for the Avenal Energy Project (CEC, 2009). Finally, a determination of impact significance was made following the four California Environmental Quality Act (CEQA) Guidelines checklist questions discussed in Section 5.13.2.2.

The initial step in the evaluation process was the review of planning documents (including the Alameda County East County Area Plan [ECAP]) applicable to the project area to gain insight as to the type of land uses intended for the area, and the guidelines given for the protection or preservation of visual resources. Consideration was then given to the existing visual setting within the project viewshed, which is defined as the geographical area in which the project can be seen.

Potential project impacts were evaluated using a KOP analysis, among other tools and information sources. Site reconnaissance was conducted to view the site and surrounding area, to identify potential KOPs, and to take representative photographs of existing visual conditions. A single-lens reflex 35-millimeter (mm) camera with a 50-mm lens (view angle

40 degrees) was used to shoot site photographs. Photographs from the site reconnaissance were selected to represent the “before” conditions from each KOP.

Visual simulations were produced to illustrate the “after” visual conditions from each of the KOPs to provide the viewer with a clear image of the location, scale, and visual appearance of the proposed project. These simulation images represent the project’s appearance in the period immediately after completion of construction and installation of the landscaping, if applicable. The computer-generated simulations are the result of an objective analytical and computer modeling process described briefly below. The images are accurate within the constraints of the available site and project data.

Computer modeling and rendering techniques were used to produce the simulated images of the views of the site as they would appear after development of the project. Existing topographic and site data provided the basis for developing an initial digital model. The project engineers provided site plans and digital data for the proposed generation facility, and site plans and elevations for the components of the transmission system. These were used to create three-dimensional (3-D) digital models of these facilities. These models were combined with the digital site model to produce a complete computer model of the generating facility and portions of the overhead transmission system.

For each viewpoint, viewer location was digitized from topographic maps and scaled aerial photos, using 5 feet as the assumed eye level. Computer “wire frame” perspective plots were then overlaid on the photographs of the views from the KOPs to verify scale and viewpoint location. Digital visual simulation images were produced as a next step, based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The final hardcopy visual simulation images that appear in this AFC document were produced from the digital image files using a color printer.

The before site photographs are included as Photograph A for each KOP in Figures 5.13-2 through 5.13-6. The after visual simulations are included as Photograph B in each of the figures.

The figures were used in the visual resource analysis for the project, as used by CEC. The determination of visual effects incorporates the elements of contrast, dominance, view blockage, and visual change, as defined below.

- **Contrast** – Contrast concerns the degree to which a project’s visual characteristics or elements (form, line, color, and texture) differ from the same visual elements in the existing landscape. The degree of contrast can range from low to high. A landscape with forms, lines, colors, and textures similar to those of a proposed energy facility is more visually absorbent; that is, more capable of accepting those characteristics than a landscape in which those elements are absent.² Generally, visual absorption is inversely proportional to visual contrast.
- **Dominance** – Dominance is a measure of (a) the proportion of the total field of view occupied by the field; (b) a feature’s apparent size relative to other visible landscape features; and (c) the conspicuousness of the feature due to its location in the view. A feature’s level of dominance is lower in a panoramic setting than in an enclosed setting

² Typically, the CEC does not consider texture in its visual analyses.

with a focus on the feature itself. A feature's level of dominance is higher if it is (1) near the center of the view; (2) elevated relative to the viewer; or (3) has the sky as a backdrop. As the distance between a viewer and a feature increases, its apparent size decreases; and consequently, its dominance decreases. The level of dominance ranges from low to high.

- **View Blockage** – The extent to which any previously visible landscape features are blocked from view constitutes view disruption. The view is also disrupted when the continuity of the view is interrupted. When considering a project's features, higher quality landscape features can be disrupted by lower quality project features, thus resulting in adverse visual impacts. The degree of view disruption can range from none to high.
- **Visual Change** – Visual change is a function of contrast, dominance, and view disruption. Generally, contrast and dominance contribute more to the degree of visual change than does view disruption.

Once all effects were examined, a determination was made as to whether any potential impacts would reach a level that would be significant under CEQA's standards, and thus require mitigation beyond that proposed as a part of the initial project design. Under CEQA, any required mitigation must be specific to an identified impact and must be feasible.

5.13.2.2 Impact Evaluation Criteria

The following criteria from the CEQA Guidelines were considered in determining whether a visual impact would be significant.

The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including...objects of historic or aesthetic significance" (CCR tit. 14, § 15382).

Appendix G of the CEQA Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

1. Would the project have a substantial adverse effect on a scenic vista?
2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?
3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
4. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

5.13.2.3 Project Appearance

5.13.2.3.1 Project Structures and Dimensions

The proposed project facilities are described in detail in Chapter 2.0, Project Description. Figure 2.1-1 shows the general arrangement and layout of the proposed project features on

the site, and Figure 2.1-2 provides typical elevation views. Table 5.13-1 summarizes the dimensions, finishes, and materials of the generating facility's major features.

TABLE 5.13-1
Approximate Dimensions, Colors, Materials, and Finishes of the Major Project Features

| Feature | Height (feet) | Length (feet) | Width (feet) | Diameter (feet) | Color | Materials | Finish |
|-------------------------------------|---------------|---------------|--------------|-----------------|-------------|-----------|-----------------|
| Exhaust stack | 80 | — | — | 12 | Gray | Metal | Flat/untextured |
| Raw water/fire water storage tank | 45 | — | — | 45 | Light Brown | Metal | Flat/untextured |
| Demineralized water tank | 40 | — | — | 40 | Light Brown | Metal | Flat/untextured |
| CTG Inlet Air Filter | 34 | 32 | 37 | | Light Brown | Metal | Flat/untextured |
| Wastewater storage tank | 25 | — | — | 25 | Light Brown | Metal | Flat/untextured |
| Fuel gas compressors enclosure | 25 | 52 | 98 | — | Gray | Metal | Flat/untextured |
| Warehouse and maintenance building | 23 | 52 | 98 | — | Gray | Metal | Flat/untextured |
| Power distribution center | 19 | 25 | 80 | — | Gray | Metal | Flat/untextured |
| Chiller air-cooled condenser | 17 | 61 | 75 | — | Gray | Metal | Flat/untextured |
| Combustion turbine generator (CTG) | 15 | 57 | 14 | — | Gray | Metal | Flat/untextured |
| Control and administration building | 14 | 28 | 78 | — | Gray | Metal | Flat/untextured |

The exteriors of all major project equipment will be treated with a neutral, earthtone finish, in colors ranging from gray to light brown. This combination of darker and lighter colors is intended to optimize its visual integration with the surrounding environment. The project will be surrounded by a chain-link security fence, and access will be provided by a gated driveway from the easement on the east side.

5.13.2.3.2 Transmission Line

MEP will interconnect to the PG&E Kelso Substation via a new 0.7-mile, 230-kV transmission line that will run north on the property, then across Kelso Road to the existing Kelso Substation.

5.13.2.3.3 Pipelines

The fuel gas line interconnection for the proposed power plant entails constructing 580 feet of new pipeline directly northeast from the project site to the point of interconnection with PG&E's high pressure natural gas pipeline, located within the parcel. A new gas metering station will be constructed on the project site.

Service water will be provided from a new connection to BBID via a new pump station and 6-inch diameter, 1.8-mile pipeline placed in or along the east side of Bruns Road, from existing Canal 45 south to the plant site.

Because both pipelines will be underground facilities and will not be visible after completion of the construction phase, potential impacts from the fuel gas line and service water line will not be discussed further in this analysis.

5.13.2.3.4 Construction Laydown Area

As detailed in Section 2.1.15, construction of MEP is to take place during the 14-month period extending from the second quarter of 2011 to the third quarter of 2012. During the construction period, an area for construction worker parking and laydown of equipment will be located to the immediate east of the project site. A water supply pipeline laydown area will be temporarily located near BBID headquarters, north of the project site.

5.13.2.3.5 Landscaping

The Development Plan that will include a detailed landscape plan that will respond to any County landscaping requirements as detailed in ECAP Policy 114 (see Section 5.13.5.1).

5.13.2.3.6 Lighting

MEP will be a peaking power plant, expected to operate during periods of high electrical demand (typically occurring during warm weather). The plant's operation may require onsite nighttime lighting for safety and security. The lighting system provides personnel with illumination for operation under normal conditions and for egress under emergency conditions, and includes emergency lighting to perform manual operations during an outage of the normal power source. The system also provides 120-volt convenience outlets for portable lamps and tools.

To reduce offsite lighting impacts, lighting at the facility will be restricted to areas required for safety, security, and operation. Exterior lights will be hooded, and lights will be directed onsite so that significant light or glare would be minimized. Low-pressure sodium lamps and fixtures of a non-glare type will be specified. For areas where lighting is not required for normal operation, safety, or security, switched lighting circuits will be provided, thus allowing these areas to remain unilluminated (dark) at most times, minimizing the amount of lighting potentially visible offsite.

Project construction activities are planned to occur between 6:00 a.m. and 7:00 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities (for example, pouring concrete at night during hot weather, working around time-critical shutdowns and constraints). During some construction periods and during the startup phase of the project, some activities will continue 24 hours a day, 7 days a week. During periods when nighttime construction activities take place, illumination that meets state and federal worker safety regulations will be required. To the extent possible, the nighttime construction lighting will be erected pointing toward the center of the site where activities are occurring and will be shielded. Task-specific lighting will be used to the extent practical while complying with worker safety regulations.

5.13.2.3.7 Water Vapor Plumes

Visible plumes from power plants (and other sources) form when the mass of water in an exhaust plume exceeds the saturation point of the exhaust gases. The saturation point of air is directly related to its temperature with warm air having a higher saturation point (being able to carry more water in a vapor state) than cold air. When the saturation point is reached, water will condense out of vapor state to a liquid state, forming fine water droplets. These water droplets are visible in an exhaust plume.

Experience with plants of the type proposed here has demonstrated that the high velocity and temperature of the stack exhaust result in a quick dispersion of stack plumes, minimizing the probability that a visible plume would be created above the stacks. Based on previous experience with these kinds of systems, it is likely that formation of visible plumes from the project would be a rare occurrence related to unusual combinations of cold and damp conditions, and that when present, the plumes would be relatively small.

Appendix 5.13 contains a screening visible plume analysis with psychrometric chart plots for extreme ambient low (17 degrees Fahrenheit [°F]) and high (112°F) temperatures. The assessment concludes that the probability of visible plume formation from MEP is unlikely at cooler ambient temperatures and highly unlikely at warmer ambient air temperatures. Therefore, potential visual resource impacts from visible plume formation from the operation of MEP are not likely to be significant.

Because MEP will be a peaking plant, it is expected that it will operate at a relatively low annual capacity factor. Although MEP will be permitted for up to 4,000 hours of operation per year, most similar peaking power plants in California have historically operated at much lower capacity factors, on the order of six percent (see Section 1.0, Executive Summary). It is anticipated that much of the time that the plant operates will be during the summer during hours when temperatures, and thus electric loads, are high. There is little potential for visible plume formation during the high temperature periods when the plant is most likely to be in operation.

5.13.2.4 Assessment of Visual Effects

5.13.2.4.1 KOP 1 – View from Bruns Road

Figure 5.13-2 presents a photo of the existing view toward the project site from Bruns Road (Photograph A) and a simulation of the view as it would appear during the project's operational period (Photograph B). Comparison between the existing view and the view with the project in place indicates that development of the project will create an assemblage of structures, tanks and stacks located in the middleground of the view. These project elements will be generally consistent in scale with the existing Byron Power Cogen Plant and the high voltage electric transmission line structures that are already in the view. Because the project's components will be seen up against the backdrop of hills that form the bowl in which the project will be located, the project elements will not be silhouetted against the sky, and to some degree, they will visually recede into the hill backdrop.

The proposed project's degree of contrast with its setting will be moderate and although it will be a readily visible element of the view, it will not dominate it. The project will not remove elements of visual importance from the view and will not block aesthetically important features in the background. Overall, although the proposed project will increase

the intensity of the development seen in this view, it will not substantially alter the view's existing character, and will have relatively little effect on the view's level of visual quality.

Because of the moderate degree of contrast, dominance and view blockage, the project would result in a moderate degree of visual change in views from KOP 1.

5.13.2.4.2 KOP 2 – View from Kelso Road

Figure 5.13-3 presents a photo of the existing view toward the project site from Kelso Road (Photograph A) and a simulation of the view as it would appear during the project's operational period (Photograph B). Comparison of the two images indicates that when the proposed project is in place, the change to the view will be somewhat visible.

The degree of contrast in the view with the project is moderately low. From this location, the power plant would appear partially behind the hills between the KOP and project site. The stacks and other vertical features that are part of the project would be consistent with the large vertical features in the existing landscape, namely the wind turbines and transmission poles, and this consistency would partially offset the contrast between the hills and the power plant in terms of form, line, and texture. The 0.7-mile transmission interconnect is the tallest of the new features in the view, with two poles appearing with only the sky as backdrop as the interconnect extends north from the project site toward Kelso Road and Kelso Substation. However, the poles do not appear taller than existing transmission infrastructure and towers and turbines, and are therefore visually absorbed by vertical features in the area. The neutral color treatment of the exterior materials would reduce any potential contrast with regard to color. The proposed project would have a low degree of dominance; it would not appear near the center of the view, would not appear elevated relative to the viewer and would not have the sky as a backdrop, aside from the two transmission poles. Further, it would not obstruct any previously visible landscape features or interrupt the continuity of any view. Therefore, there would be no view disruption in views of the project from KOP 2.

The moderately low contrast between the proposed project and the existing landscape, along with the project's low degree of dominance upon completion and lack of view disruption, would result in a low degree of visual change in views from KOP 2.

5.13.2.4.3 KOP 3 – View from Bethany Reservoir

Figure 5.13-4 presents a photo of the existing view toward the project site from Bethany Reservoir (Photograph A) and a simulation of the view as it would appear during the project's operational period (Photograph B). Comparison of the two images indicates that when the proposed project is in place, the change to the view will be clearly visible.

The degree of contrast in the view with the project is moderate. The existing landscape includes other relatively large structures. These existing structures are not as large or as prominent as the proposed power plant would be, but in the simulated view, the project would appear as one of a few large structures scattered throughout the landscape. The transmission towers visible throughout the existing view provide a vertically oriented form that partially absorbs the power plant stacks in the view with the project. The neutral color treatment of the exterior materials would reduce any potential contrast with regard to color. The project would appear in the center of the view, but would only be moderately dominant because of the relatively small portion of the total view that it would occupy. Its appearance

would be conspicuous in this direct view of the project site, but it would not be elevated relative to the viewer and would not have a backdrop of the sky. Finally, the only features in the existing landscape that would be blocked in this view as a result of the proposed project would be the existing Byron Power Cogen Plant and an agricultural building farther in the distance. The proposed power plant would not block views of the Clifton Court Forebay. Poles associated with the transmission interconnect would be barely detectable in this view and would not obstruct views of any landscape features. Effects of view blockage would therefore be low.

The overall visual change resulting from the project in views from KOP 3 would be moderate, based on a moderate degree of contrast and the proposed facility's moderate level of dominance.

5.13.2.4.4 KOP 4 – View from Mountain House Road

Figure 5.13-5 presents a photo of the existing view toward the project site from Mountain House Road (Photograph A) and a simulation of the view as it would appear during the project's operational period (Photograph B). Comparison of the two images indicates that when the proposed project is in place, the change to the view will be slightly visible.

The degree of contrast in the view with the project is low. The project would appear to be mostly absorbed into the existing setting, given that it would appear level and consistent in form with other structures and features along the horizon in front of the hills. The exhaust stacks and barely detectable transmission poles would be consistent with the vertical features visible on all sides of the project site, including transmission towers in front and to either side of the site and wind turbines visible in the hills beyond the site. The neutral color and untextured treatment of the exterior materials would reduce any potential contrast with regard to color. The project's dominance would similarly be low because it would appear level with the viewer, recessed against the backdrop, and would not have any backdrop against the sky. Finally, there would be a low degree of view blockage resulting from the facility. Although it would not substantially obstruct views of any important or scenic landscape features, it would appear in front of a hill that is at present visible in views from KOP 4. Construction of the proposed project would obstruct a small portion of the foothills in the distance.

The overall visual change resulting from the project in views from KOP 4 would be low.

5.13.2.4.5 KOP 5 – View from Mountain House Community

Figure 5.13-6 presents a photo of the existing view toward the project site from North Great Valley Parkway, along the western edge of the Mountain House community (Photograph A) and a simulation of the view as it would appear during the project's operational period (Photograph B). Comparison of the two images indicates that when the proposed project is in place, the change to the view will be barely discernable.

The degree of contrast in the view with the project is low. The project, which would appear at the base of the foothills in this view, would be mostly absorbed into its surroundings. The neutral color of the facility would allow it to blend in with the hilly backdrop. From this distance the untextured treatment of external materials would not be noticeable. The most visible feature of the facility, its stacks, would, when visible, appear consistent with other vertical features in the landscape, particularly existing transmission towers. The project's

dominance would be low, as the facility would appear recessed against the backdrop at the base of the hills. From this vantage point, the portion of these hills disrupted by the facility would be negligible and as such, there would be no view blockage from this viewpoint.

The overall visual change resulting from the project in views from KOP 5 would be low.

5.13.2.4.6 Light and Glare

Because the proposed project is a peaking facility, its effects on visual conditions during hours of darkness will be limited. As indicated in Section 5.13.2.3.6, some night lighting would be required for operational safety and security. There would be additional visible lighting associated with the project stacks and open site areas. High illumination areas not occupied on a regular basis would be provided with switches or motion detectors to light these areas only when occupied. At times when lights are turned on, the lighting would not be highly visible offsite and would not produce offsite glare effects. The offsite visibility and potential glare of the lighting would be restricted by specification of non-glare fixtures and placement of lights to direct illumination into only those areas where it is needed. With construction of MEP, the overall change in ambient lighting conditions at the project site, as viewed from nearby locations and from vantage points in the hills overlooking the valley, would not be substantial.

Lighting that may be required to facilitate nighttime construction activities would be, to the extent feasible and consistent with worker safety codes, directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting would be used to the extent practical while complying with worker safety regulations. In spite of these measures, there may be limited times during the 14-month construction period when the project site may appear as a brightly lit area as seen in views from nearby residences.

5.13.2.4.7 Water Vapor Plumes

The only source of water vapor plumes would be exhaust stacks, which would have the potential to create small visible plumes only when the power plant is operating at times of low temperature and high humidity. Moreover, the amount of time the proposed project is likely to produce plumes will be limited because, as a peaker plant, MEP is expected to operate approximately 600 hours per year (maximum of 4,000 hours per year), and much of its operating time will take place on hot days during the summer when electric loads are the greatest. Coincidentally, these hot summer days are the times at which plumes are the least likely to form.

In its evaluation of the Roseville Energy Park Project (03-AFC-01), the standard that CEC staff applied in evaluating the visual impacts of visible steam plumes was that plume impacts are significant if plumes occur more than 20 percent of daylight hours between October and March when there is no rain or fog and the skies are clear (CEC, 2004). Given the plant's expected operational regime, it is highly unlikely that the plant would be operated more than 20 percent of the non-rain, non-fog, clear daylight hours during the period from October through March, and that, as a consequence, it is very unlikely that visible steam plumes would be present during more than 20 percent of these hours.

5.13.2.5 Impact Significance

This section provides a discussion of the significance of the project's visual effects pursuant to CEQA. The assessment of these impacts has been structured by applying the criteria set forth in Appendix G of the CEQA Guidelines. The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including objects of historic or aesthetic significance." (14 CCR 15382) The four questions related to aesthetics that are posed for lead agencies and the answers to them are:

Would the project have a substantial adverse effect on a scenic vista?

No. There are no scenic vistas in the vicinity of the project site.

Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No. There are no state scenic highways in the vicinity of the project site.

Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

No. The project site is located in an area that includes large-parcel agricultural uses, which are primarily grazing, and facilities related to power production and water management. One existing power facility, the 6.5-MW Byron Power Cogen Plant, is on the same parcel as the proposed project, just north of the project site, which is currently used for grazing.

As indicated in Section 5.13.2.4, MEP will be visible in views from the surrounding area. However, with the exception of the views from KOPs 1 and 3, the overall visual change resulting from the proposed project would be low. In the view from KOP 1, the visual change brought about by the construction of a relatively large, 10-acre facility where no facility currently exists would be noticeable. The existing landscape is characterized by its use for grazing and the presence of the cogeneration plant and transmission lines that run through and adjacent to the parcel. Although the proposed project would increase the level of development visible in the view, no notable features that contribute to the visual quality of the area would be substantially altered as the result of the facility's construction.

In the view from KOP 3, the visual change would be moderate. The view from the California Aqueduct Bikeway provides an unobstructed view through the hollow in which the project would be located, and its proximity to the viewpoint would make it readily visible. The presence of the project would reduce the overall intactness of the view somewhat and would also reduce the unity present in the existing view by adding a developed feature in the area in front of the Byron Power Cogen Plant. However, the facility would appear within a larger landscape that already includes relatively large facilities associated with power generation and water management. Further, it would not obstruct any views of the Clifton Court Forebay, a notable body of water visible in the distance from KOP 3.

Given the plant's expected operational regime, it is highly unlikely that the plant would be operated more than 20 percent of the non-rain, non-fog, clear daylight hours during the period from October through March, and that, as a consequence, it is very unlikely that visible steam plumes would be present during more than 20 percent of these hours, staying below the threshold the CEC has established for significant impacts related to the presence of steam plumes.

In summary, the presence of the project will alter the visual character of the views from the closest public road (KOP 1) and in direct views from the California Aqueduct Bikeway (KOP 3) to a small degree, adding an additional infrastructure facility and increasing the overall intensity of development. However, the changes resulting from this addition will be at least partially absorbed into visual landscapes that already include similar facilities and are characterized by uses related to grazing, energy production, and energy transmission. The visual changes resulting from the project will not be substantial and thus will not be significant.

Would the project create a new source of substantial light and glare that would adversely affect day or nighttime views in the area?

No. As described in Section 5.13.2.4.6, project light fixtures will be restricted to areas required for safety, security, and operations. Lighting will be directed onsite, shielded from public view. Non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on will be specified. These measures will substantially reduce the offsite visibility of project lighting. Given the limited level of lighting proposed for the project, and the measures that will be taken to minimize offsite effects, MEP's night lighting impacts will be less than significant.

Because none of the major project features will have surfaces that are highly reflective, the project will not be a source of daytime glare.

Any lighting that will be installed to facilitate nighttime construction activities will, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations. Because of the short duration of the construction period, and impact attenuation measures, the construction lighting will not create a significant impact.

5.13.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; California Code of Regulations, title 14, §§ 15064(h), 15065(c), 15130, and 15355).

Six projects in the wider vicinity of the project site are considered to be at some phase in the planning process. The closest of these projects is a 2-MW utility-scale solar field currently under construction on the south side of Kelso Road, across from the Tracy Substation, approximately 0.7-mile from the project site. Other projects under way include the East Altamont Energy Center and the ultimate buildout of the Mountain House community, east

of the project site and just within the San Joaquin County border. Both of these projects are currently on hold, but have been approved for development. The three remaining projects are south of I-580, and include the rezoning of the Altamont Motorpark, the Jess Ranch Organics Processing Facility, and the development of the approved Midway Power, LLC energy project.

A portion of the East Altamont Energy Center may be visible in the right edge of the view from Bethany Reservoir (KOP 3), beyond the Tracy substation. However, as concluded above, MEP would not result in any significant impacts on visual resources. It would not result in a substantial effect on a scenic vista, substantially damage scenic resources within a state scenic highway, substantially degrade the existing visual character or quality of the site and its surroundings, or create a new source of substantial light and glare.

5.13.4 Mitigation Measures

This analysis has determined that no significant visual impacts will result from implementation of the proposed project. Therefore, no mitigation measures are proposed. However, project implementation will be subject to county planning regulations. Specifically, a Development Plan will be prepared and submitted to the county for review and comment and CEC Compliance Project Manager for review and approval before construction begins. The site plan will comply with all applicable provisions of the Alameda County Zoning Ordinance and General Plan, including provisions related to landscaping and project appearance.

5.13.5 Laws, Ordinances, Regulations, and Standards

This section describes the LORS relevant to the visual resource issues associated with MEP. No federal, state, or regional LORS are known that apply to the project's visual resource issues. However, visual resource and urban design concerns germane to the project are addressed in Alameda County's ECAP, the Alameda County Scenic Routes Element, and the Alameda County Zoning Ordinance.

As indicated in Section 5.6, Land Use, the MEP site is located in unincorporated Alameda County and is thus subject to Alameda County planning and zoning requirements. The project's natural gas line and transmission are also located within the county, but the water pipeline is located in both Alameda and Contra Costa counties. Because the development of the project's water line will not entail changes that will result in substantial long-term changes to the appearance of the environment, this analysis will be restricted to a review of the Alameda County plans and ordinances that have potential relevance to the visual resource issues associated with the project's other elements.

Table 5.13-2 lists the County plans and ordinances that are pertinent to the project elements. The specific provisions of each plan or ordinance that have potential relevance to the project are identified in Sections 5.13.5.1 through 5.13.5.3.

TABLE 5.13-2
Laws, Ordinances, Regulations, and Standards for Visual Resources

| LORS | Purpose | AFC Section Explaining Conformance | Agency Contact |
|---------------------------------|---|------------------------------------|--|
| Alameda County ECAP | Describes policies defining and for preserving sensitive viewsheds in eastern Alameda County. | Section 5.13.5.1 | Alameda County Planning Department Bruce Jensen Senior Planner 224 West Winton Ave, Room 224 Hayward, CA 94544 510-670-5400 |
| Alameda County Zoning Ordinance | Establishes classes of zoning districts governing the use of land and placement of buildings and improvements. Includes design review guidelines. | Section 5.13.5.3 | Same as above |

5.13.5.1 East County Area Plan

The ECAP, adopted in 1994 and last amended in 2002, includes several provisions that are potentially relevant to the development of MEP.

The generating facility site and aboveground linear facilities associated with the project are all located within unincorporated Alameda County and are subject to the provisions of the Alameda County General Plan. The ECAP implements the General Plan in the area in which the project site is located. The project site is designated Large Parcel Agriculture according to the ECAP. The provisions of the ECAP that are applicable to the project are summarized and evaluated in Table 5.13-3.

TABLE 5.13-3
Conformity with the ECAP

| Provision | Conformity? |
|---|---|
| Policy 107: The county shall permit no structure (e.g., housing unit, barn, or other building with four walls) that projects above a visually sensitive major ridgeline. | Yes. Policy 105 lists major visually sensitive ridgelines largely in open space use. The only visually sensitive ridgelines within the vicinity of the project area are the ridgelines surrounding Brushy Peak, north of Livermore. Brushy Peak and the nearby ridgelines are visible in existing views from Kelso Road (KOP 2) and Mountain House Road (KOP 4). As shown in Figures 5.13-3b and 5.13-5b, the MEP structures would not project above the distant ridgelines in views from these KOPs. |

TABLE 5.13-3
Conformity with the ECAP

| Provision | Conformity? |
|--|---|
| <p>Policy 108: To the extent possible, including by clustering if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks and other public viewpoints. This policy does not apply to agricultural structures to the extent it is necessary for agricultural purposes that they be located in more visible areas.</p> | <p>Yes. The project facility will be located on a 10-acre portion of a 158-acre parcel and will be partially to completely obstructed in views from most of the surrounding area due to the presence of hills to the east and west. The project site was selected in part because of the screening effect by the surrounding topography.</p> |
| <p>Policy 112: The county shall require development to maximize views of the following prominent visual features: 1) the major ridgelines listed in Policy 105; 2) Brushy Peak, Donlan Peak, and Mount Diablo; and 3) Cresta Blanca, near Arroyo Road South of Livermore.</p> | <p>Yes. Of the prominent visual features discussed in Policy 112, only Brushy Peak is within the vicinity of MEP. It is visible in existing views from Kelso Road (KOP 2) and Mountain House Road (KOP 4). As shown in Figures 5.13-3b and 5.13-5b, views of Brushy Peak would not be affected by development of MEP.</p> |
| <p>Policy 114: The county shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.</p> | <p>Yes. If required by the county, landscaping will be used to enhance the scenic quality of the area and to screen as much as possible views of the project site. Plants used will be those that area compatible with surrounding vegetation, are drought tolerant, and suitable to site conditions, providing habitat value and fire retardance. Because of the scale of the facility relative to the surrounding landscape, any proposed landscaping would not fully screen the proposed structures from view.</p> |
| <p>Policy 115: In all cases appropriate building materials, landscaping, and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extend practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.</p> | <p>Yes. If required by the county, a landscaping plan will be included in the Development Plan. The development will blend with the existing visual character of the area and be subordinate to existing natural features and human alterations (see analysis in Section 5.13.2.4). Lighting will be directed onsite and shielded from public view (see Section 5.13.2.4.6).</p> |
| <p>Policy 116: To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.</p> | <p>Yes. Grading required for the project will be consistent with natural landforms and will not substantially alter natural topography or vegetation beyond the construction of the facility on what is currently grazing land. The hills on either side of the project site will not be altered by grading.</p> |

TABLE 5.13-3
Conformity with the ECAP

| Provision | Conformity? |
|--|---|
| <p>Policy 120: The county shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.</p> <p>Policy 287: The county shall require new developments to locate utility lines underground whenever feasible.</p> | <p>Yes. Because the State of California retains jurisdiction over all electric facilities in excess of 50 kV, including all transmission level facilities, this policy can pertain only to utility lines under the city's jurisdiction (that is, distribution lines of less than 50 kV). Thus, this policy does not apply to the proposed transmission line, which is a 230-kV transmission facility under the exclusive jurisdiction of the state.</p> |
| <p>Policy 215: The county shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.</p> | <p>N/A. The implementation program for Policy 215 (Program 85) is that the county shall update the Scenic Route Element of the General Plan to include a revised list of scenic corridors within the East County. The Scenic Route Element designates scenic routes and establishes principles for the management of visual changes in the corridors along them. At present, the only road in the vicinity designated as a scenic route is Mountain House Road, which is designated as a Major Rural Road. Scenic corridors within which the Scenic Route Element's policies apply are 1,000 feet wide. At over a mile away from Mountain House Road, the MEP site falls well outside any identified scenic highway corridor.</p> |

Sources: Alameda County, 2002

5.13.5.2 Alameda County Zoning Ordinance

Under the Alameda County Zoning Ordinance (Alameda County, 2009), the project site is designated as being in a Large Parcel Agriculture Zone. In this zone, there is no limit on the height of structures, the minimum depth for front yards is 30 feet, the minimum depth for rear yards is 10 feet, and the minimum width for side yards is 10 feet. Although the project will not conflict with any of these design requirements, the project expects to work closely with the county and CEC staff to design the project to be consistent with the existing conditions, and to design project heights, colors, and towers so as not to detract from the visual quality of the area.

5.13.5.3 Summary of Project's Conformity with Applicable LORS

The project complies with applicable laws, ordinances, regulations, and standards related to visual resource issues.

5.13.6 Agencies and Agency Contacts

The agency responsible for the design review is Alameda County.

TABLE 5.13-4
Agency Contacts for Visual Resources

| Issue | Agency | Contact |
|---------------|--|--|
| Design Review | Alameda County Planning Department 224 West Winton Ave, Room 224 Hayward, CA 94544 | Bruce Jensen Senior Planner 510-670-5400 |

5.13.7 Permits Required and Permit Schedule

The required permit that is of the most direct relevance to visual resource issues is the design review, which includes site plan, architectural, and landscape elements.

TABLE 5.13-5
Permits and Permit Schedule for Visual Resources

| Permit or Approval | Schedule | Agency Contact | Applicability |
|---|-----------------------|--|---|
| Design review including site plan and landscape plan review | Prior to construction | Alameda County Planning Department Bruce Jensen Senior Planner 224 West Winton Ave, Room 224 Hayward, CA 94544 510-670-5400 | Review of site plan, architecture, and landscaping and issuance of approval |

5.13.8 References

Alameda County. 2009. Administrative / Ordinance Code, Title 17.

Alameda County. 2002 (updated from 1994). East County Area Plan – A Portion of the Alameda County General Plan.

Alameda County. 1994 (updated from 1966). Scenic Route Element of the General Plan.

California Energy Commission. 2009. Preliminary Staff Assessment for Avenal Energy. Appendix VR-1: Energy Commission Visual Resource Analysis Evaluation Criteria.

California Energy Commission. 2004. Final Staff Assessment for the Roseville Energy Park Project – Visual Resources chapter.