

3.1 Aesthetics

This section identifies and evaluates issues related to visual resources in the program and project areas.

The *Existing Conditions* discussion below describes the current setting. The purpose of this information is to establish the existing environmental context against which the reader can understand the environmental changes caused by the proposed program and individual projects. The environmental setting information is intended to be directly or indirectly relevant to the subsequent discussion of impacts. For example, the setting identifies groups of people who have views of the program and project areas because the repowering activities could change their views and experiences.

The environmental changes associated with the program and the two individual projects are discussed in Section 3.1.3, *Environmental Impacts*. This section identifies impacts, describes how they would occur, and prescribes mitigation measures to reduce significant impacts, if necessary.

3.1.1 Concepts and Terminology

Identifying a project area's visual resources and conditions involves three steps.

1. Objective identification of the visual features (visual resources) of the landscape.
2. Assessment of the character and quality of those resources relative to overall regional visual character.
3. Determination of the importance to people, or *sensitivity*, of views of visual resources in the landscape.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1988). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (U.S. Forest Service 1995; Federal Highway Administration 1988). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1988; Jones et al. 1975), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Visual Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1988). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middleground zone from the foreground zone to 3–5 miles from the viewer, and the background zone from the middleground to infinity (Jones et al. 1975).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1995; Federal Highway Administration 1988; U.S. Soil Conservation Service 1978). Commuters and nonrecreational travelers generally have fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity.

Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity.

Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.1.2 Existing Conditions

Regulatory Setting

Federal

The federal government does not explicitly regulate visual quality but recognizes its importance and preserves aesthetic values through the National Park, National Wildlife Refuge, National Monument, and National Scenic Byway Systems.

State

Interstate 580 (I-580) from the San Joaquin County line to State Route (SR) 205 (Post Miles 0.0 to 0.393), a 0.4 mile long segment, is a state-designated scenic highway (California Department of Transportation 2012). The I-580 intersection with SR 205 falls just within the eastern border of the program area.

Local

Alameda County General Plan

Scenic Route Element

The Scenic Route Element of the Alameda County General Plan (Scenic Route Element) provides a continuous, countywide scenic route system and is intended to serve as a guide for local jurisdictions for development of city-scale scenic route systems and as a guide for development to protect and enhance the scenic values along designated scenic routes (Alameda County 1966).

The Scenic Route Element identifies scenic freeways and expressways as traversing or connecting areas of major scenic, recreational, or cultural attractions, and as distinct from two other major types of scenic routes (scenic thoroughfares and rural-recreation routes). Scenic routes are defined to consist of three elements: the right-of-way, the scenic corridor, and areas extending beyond the corridor. The corridor is defined as those properties, along and up to 1,000 feet beyond the right-of-way, that either (1) should be acquired for protection, or (2) for which development controls should be applied to preserve and enhance nearby views or maintain unobstructed distant views along the route in rural areas with high scenic qualities. More specifically, scenic corridors are defined as those areas where “Development controls should be applied to preserve and enhance scenic qualities, restrict unsightly use of land, control height of structures, and provide site design and architectural guidance along the entire scenic corridor” (Alameda County 1966). For the areas extending beyond scenic corridors (i.e., beyond 1,000 feet from the right-of-way), the Scenic Route Element also requires basic development controls: in the undeveloped parts of the county, project

review should address grading, removal of vegetation, streambeds, landscaping, utility and communication towers, poles and lines, and outdoor advertising signs or structures.

The program area contains one state-designated scenic route, I-580, which is also categorized as one of the County's Scenic Freeways and Expressways. Most of the other roads and highways that traverse the program area are categorized as Scenic Rural-Recreation Routes (or as mapped Major Rural Roads); these are listed below (Alameda County 1966).

- Altamont Pass Road
- Byron-Bethany Road
- Flynn Road
- Grant Line Road
- Mountain House Road
- Patterson Pass Road
- Proposed Route 239 Freeway
- Tesla Road
- Vasco Road

The Scenic Route Element provides the following principles for Scenic Route Corridors that may apply to the repowering program as well as the Golden Hills and Patterson Pass Projects. The principles are organized loosely under five headings: the system, the rights-of-way, the corridors, the corridors *and* the remainder or balance of the County, and areas beyond the corridors. For reference in the subsequent discussions, each principle is identified by a code (e.g., SRE-Corr-1).

Provide for Normal Uses of Land and Protect Against Unsightly Features: In both urban and rural areas, normally permitted uses of land should be allowed in scenic corridors, except that panoramic views and vistas should be preserved and enhanced through supplementing normal zoning regulations with special height, area, and sideyard regulations; through providing architectural and site design review; through prohibition and removal of billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides. (SRE-Corr-1).

Locate Transmission Towers and Lines Outside of Scenic Route Corridors When Feasible: New overhead transmission towers and lines should not be located within scenic corridors when it is feasible to locate them elsewhere. (SRE-Corr-2).

Underground Utility Distribution Lines When Feasible; Make Overhead Lines Inconspicuous: New, relocated or existing utility distribution lines should be placed underground whenever feasible. When it is not feasible to place lines underground, they should be located so as to be inconspicuous from the scenic route. Poles of an improved design should be used wherever possible. Combined or adjacent rights-of-way and common poles should be used wherever feasible. (SRE-Corr-3).

Use Landscaping to Increase Scenic Qualities of Scenic Route Corridors: Landscaping should be designed and maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views. (SRE-Corr-5).

Control Tree Removal: No mature trees should be removed without permission of the local jurisdiction as a means of preserving the scenic quality of the county. (SRE-Corr/Rem-5).

Control Alteration of Streambeds and Bodies of Water: Alteration of streambeds or bodies of water and adjacent vegetation should be permitted only with approval of the local jurisdiction, as a means of

preserving the natural scenic quality of the stream courses, bodies of water, vegetation and wildlife in the county. Development along edges of streams, canals, reservoirs, and other bodies of water should be designed and treated so as to result in naturalistic, architectural, or sculptural forms. (SRE-Corr/Rem-6).

Preserve and Enhance Natural Scenic Qualities in Areas Beyond the Scenic Corridor: Views from scenic routes will comprise essentially all of the remainder of the county beyond the limits of the scenic corridor: the corridor is intended to establish a framework for the observation of the views beyond. Therefore, in all areas in the county extending beyond the scenic route corridors, scenic qualities should be preserved through retaining the general character of natural slopes and natural formations, and through preservation and enhancement of water areas, watercourses, vegetation and wildlife habitats. Development of lands adjacent to scenic route corridors should not obstruct views of scenic areas and development should be visually compatible with the natural scenic qualities. (SRE-Beyond Corr-1).

Provide for Normal Uses of Land but Limit Overhead Utilities and Outdoor Advertising Structures: In both developed and undeveloped areas, outdoor advertising structures, utility and communication towers, poles, and wires should be located only where they will not detract from significant scenic views. All other structures and use of land should be permitted as specified in the local zoning ordinance as supplemented by special height regulations. (SRE-Beyond Corr-2)

Lastly, the Scenic Route Element establishes development standards that may apply to the program and the Golden Hills and Patterson Pass Projects.

Alteration to natural or artificial land contours should not be permitted without a grading permit issued by the local jurisdiction as a means of preserving and enhancing the natural topography and vegetation in developable areas. Mass grading should not be permitted. The following criteria should be applied in the review of grading permits in developable areas:

- As a means of preserving natural *ridge skylines* within the county, no major ridgeline should be altered to the extent that an artificial ridgeline results.
- Access roads should be located and designed to keep grading to a minimum.
- Natural ground contours in slope areas over 10% should not be altered more than 5% overall, except in such slope areas where large stands of mature vegetation, scenic natural formations or natural watercourses exist, where grading should be limited so as to preserve the natural features.
- Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems, and should be planted with low maintenance, fire resistant plant materials that are compatible with the existing environment.

Open Space Element

The following principles from the Open Space Element of the General Plan (Open Space Element) may apply to the program and the Golden Hills and Patterson Pass Projects.

Include Natural Ridgelines and Slope Areas: Natural ridgelines, and slopes in excess of twenty-five percent in grade, should be left as open space to eliminate mass grading.

Consolidate and Locate Utility Lines to Avoid Scenic Areas: Wherever feasible, power and pipe utility lines should be consolidated to prevent further severance of open space lands. Utility lines and aqueducts in open space areas should be located so as to avoid areas of outstanding beauty.

Natural Resources within Open Space Areas Should be Permanently Protected: Within open space areas, either publicly or privately owned, removal of mature trees should not be permitted without the permission of the local authority. Alteration of streambeds or bodies of water and adjacent vegetation should be permitted only as a means of erosion-control or flood control, as permitted by the adopted plans of regional or local jurisdictions, and in such a manner as to enhance water courses, scenic shorelines, and wetlands within the county.

East County Area Plan

The program area falls within Alameda County ECAP. The following goals and policies of the ECAP may be applicable to the proposed program and projects. Goals in the ECAP are intended to be general statements of a condition Alameda County wants to achieve, and the associated policies are the focused statements of how the County will achieve these goals (Alameda County 2000).

Sensitive Viewsheds

Goal: To preserve unique visual resources and protect sensitive viewsheds.

Policy 105: The County shall preserve the following major visually-sensitive ridgelines largely in open space use:

1. The ridgelines of Pleasanton, Main, and Sunol Ridges west of Pleasanton;
2. The ridgelines of Schafer, Shell, Skyline, Oak and Divide Ridges west of Dublin and the ridgelines above Doolan Canyon east of Dublin;
3. The ridgelines above Collier Canyon and Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore;
4. The ridgelines above the vineyards south of Livermore;
5. The ridgelines above Happy Valley south of Pleasanton.

Policy 106: Structures may not be located on ridgelines or hilltops or where they will project above a ridgeline or hilltop as viewed from public roads, trails, parks and other public viewpoints unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective. New parcels may not be created that have no building site other than a ridgeline or hilltop, or that would cause a structure to protrude above a ridgeline or hilltop, unless there is no other possible configuration.

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.

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.

Policy 113: The County shall review development proposed adjacent to or near public parklands to ensure that views from parks and trails are maintained.

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.

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 extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.

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 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.

Policy 117: The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.

Policy 118: The County shall require that grading avoid areas containing large stands of mature, healthy vegetation, scenic natural formations, or natural watercourses.

Policy 119: The County shall require that access roads be sited and designed to minimize grading.

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.

Windfarms

Goal: To maximize the production of wind generated energy.

Policy 169: The County shall allow for continued operation, new development, redevelopment, and expansion of existing and planned windfarm facilities within the limits of environmental constraints.

Policy 170: The County shall protect nearby existing uses from potential traffic, noise, dust, visual, and other impacts generated by the construction and operation of windfarm facilities.

Streets and Highways

Goal: To complete County-planned street and highway improvements which are attractively designed to integrate pedestrian and vehicle use.

Policy 198: The County shall allow reductions in roadway widths in areas of complex topography, sensitive resources, or scenic value.

Scenic Highways

Goal: To preserve and enhance views within scenic corridors.

Policy 215: The County shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.

Contra Costa County—Conditions of Approval

Wind turbine structures shall be of neutral non-reflective colors. Colors shall be subject to review and approval by the Zoning Administrator. This includes the blades of the wind turbines. Although the program area is completely within Alameda County, its northern boundary borders Contra Costa County. Contra Costa County conditions of approval and ordinances related to wind energy conversion systems may be applicable to the cumulative analysis because the Vasco Winds Repowering Project is near the southern boundary of Contra Costa County.

Contra Costa County Code of Ordinances—Chapter 88-3: Wind Energy Conversion Systems (WECS)

88-3.618 Site Aesthetics. (a) WECS (towers and blades) structures and fencing shall be of a non-reflective, unobtrusive color. (b) All WECS, buildings, and structures shall be sited to minimize visual impact to residences within one mile, adjacent roadways, and County scenic routes. This may require relocation of one or more proposed WECS.

Environmental Setting

Regional Character

The program area is in an unincorporated rural part of Alameda County, in the northeastern corner of the county adjacent to the western boundary of San Joaquin County and the southern boundary of Contra Costa County.

The area's topography is characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges. A broad, flat expanse of the San Joaquin Valley lies to the northeast and east, and the Delta lies northeast of the site. The San Joaquin Valley is dominated by agricultural lands. The remainder of the surrounding area is characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges, and much of this land serves as cattle grazing land.

The Los Vaqueros watershed lies northwest of the program area. The city of Livermore lies west of the program area. To the north and east of the program area, respectively, are the city of Tracy and the community of Byron. The area south of the program area is largely undeveloped.

In general, the program area is mostly undeveloped. However, agricultural, industrial, and rural residential land uses are scattered throughout the region. Wind turbines and associated infrastructure, such as substations, are a dominant and established industrial visual feature throughout most of the region (Figures 2-3 and 3.1-1).

Vicinity Character

The project vicinity is defined as the area within 0.5 mile of the program area and is comprised of the program, Golden Hills Project, and Patterson Pass Project.

Program Area

The program area is in the northeastern corner of Alameda County next to its boundaries with Contra Costa County to the north and San Joaquin County to the east (Figure 1-2).

Similar to the greater region, the program area is mostly characterized by grass-covered, rolling hills, with road cuts to accommodate rural roads and I-580. Strings of turbines, power lines, transformers, access roads, and substations are the most visually distinct artificial features throughout most the program area. While portions of the program area are not developed with turbines, as noted in the Project Description, as of October 2011, there were approximately 3,490 wind turbines of 11 different types in the APWRA across both Alameda and Contra Costa Counties (Appendix A). These include the turbines associated with the Golden Hills and Patterson Pass Project sites. The program area is dotted with industrial sites, residences, and stock ponds, including a few clusters of smaller rural residential properties on Dyer Road, Midway Road, and Mountain House Road.

The program area north of I-580 is primarily composed of rolling terrain that transitions to flatter agricultural lands just outside of the northeastern program area boundary. The California Aqueduct, California Aqueduct Bikeway, Bethany Reservoir State Recreation Area (Bethany Reservoir), Altamont and Vasco Road Landfills, Summit School, Mountain House Bar, Mountain House School, and a series of multi-use regional trails connecting Brushy Peak Regional Preserve to Del Valle Regional Park, San Joaquin County border to Shadow Cliffs Regional Recreation Area, Brushy Peak

Regional Preserve to Bethany Reservoir, and Vasco Caves Regional Preserve to Brushy Peak Regional Preserve are in the northern program area (Figure 3.1-2) (East Bay Regional Park District 2007). There are also a couple of industrial sites and railroad tracks in this area as well.

The program area south of I-580 is more sparsely populated and has fewer industrial uses than the northern program area. The terrain transitions from rolling, grassy hills to more rugged, steeper relief with more trees to the south. The potential future Tesla Regional Preserve and Carnegie State Vehicular Recreation Area are in the southern program area (Figure 3.1-2). The Midway Substation is another visually prominent feature in this section of the program area (Figure 2-10).

The rolling terrain and presence of turbines creates a unique visual experience for viewers on scenic routes shown in Figure 3.1-2 and from non-designated roadways in the program area. Views vary, seasonally, when the grasses on the hillsides change from green to brown.

Golden Hills Project

The visual character of the Golden Hills project area is similar to that of the program area. The character of the Golden Hills project area (Figure 3.1-2) is discussed from north to south.

The northernmost portion of the project area, just south of I-580, is characterized by rolling, grassy terrain with turbines, transmission lines, and access roads. In addition to the turbines, this area is dotted with industrial facilities, residences, and stock ponds. The area is also characterized by steep cuts in the hills throughout to accommodate Jess Ranch Road, Flynn Road, and the railroad tracks. The San Joaquin County to Shadow Cliffs Regional Recreation Area regional trail follows a portion of the northern project area boundary (East Bay Regional Park District 2007). There are four scenic routes in the project area vicinity: I-580 is both a state- and County-designated scenic route, and Altamont Pass Road, Flynn Road, and Patterson Pass Road are County-designated scenic routes (Figure 3.1-2) (Alameda County 1966). Grant Line Road is more than a mile northeast of the closest project boundary, while Mountain House Road is more than 2 miles northeast of the closest project boundary, and neither have views of the project area due to intervening topography. In addition, the proposed Route 239 freeway (a proposed Alameda County-designated scenic route) would be least 2 miles northeast of the closest project boundary (TriLink 2014). The proposed Route 239 freeway is not shown on Figure 3.1-2 because the final route has not been chosen. However, it is anticipated that this route, which would be near Grant Line and Mountain House Roads, would similarly not have views of the project area due to intervening topography.

Flynn Road crosses the southernmost portion of the project area from west to east where no turbines are currently present. Views consist mostly of rolling grass-covered hills. However, strings of turbines in the vicinity of this undeveloped area are still the most prominent artificial features in views from this section of road. Patterson Pass Road, an Alameda County-designated scenic route, runs generally south of the project area, skirting its eastern tip (Figure 3.1-2) (Alameda County 1966). Views of the project area are available from Livermore, I-580, Flynn Road, Jess Ranch Road, eastern Patterson Pass Road between its intersection with the railroad tracks and the San Joaquin County line, and various residential (Figure 1-2) and industrial uses. Hills block views of the project area from Altamont Pass Road. Because the existing turbines are located on hill- and ridgetops, they are visible from these land uses. Refer to Figure 3.1-1 for a representative view from I-580.

The Golden Hills project area displays a moderate level of vividness, intactness, and unity. The rolling hills are visually pleasing in contrast to the flat valley floor. The turbines may be perceived as adding to the visual uniqueness of views because of the form and motion associated with the

turbines. However, they can also be perceived as a negative visual feature due to the scale and number of turbines that populate the rolling hillsides and can be seen as jutting out of the tops of the smooth, grass-covered, rolling hills, detracting from, encroaching on, and breaking up views of these natural features. Utility lines and pylon towers in the program area may act to detract from the intactness and unity, but vary in prominence from place to place. Therefore, the overall visual quality of the Golden Hills project area is moderate.

Patterson Pass Project

Like the program area, the Patterson Pass Project vicinity is characterized by grassy, rolling hills with strings of turbines, transmission lines, substations, and access roads. There are currently 317 operational turbines on the Patterson Pass Project site. In addition to the turbines, there are two industrial sites, a stream, and four stock ponds in the Patterson Pass Project vicinity.

There are no state-designated scenic highways in the Patterson Pass Project vicinity. Patterson Pass Road, along the southern border of the site, is an Alameda County–designated scenic route (Figure 3.1-2) (Alameda County 1966).

Views of this project site are available from Patterson Pass Road looking north and from Jess Ranch Road looking south. There are also a couple of residences near the project area; however, the closest is at least 2,200 feet from the nearest proposed turbine location. The dominant features visible from these roads are the existing turbine strings covering the project area.

Like the Golden Hills project area, the Patterson Pass project area displays a moderate level of vividness, intactness, and unity. The rolling hills are visually pleasing in contrast to the flat valley floor. The turbines may be perceived as adding to the visual uniqueness of views because of the form and motion associated with the turbines. However, they can also be perceived as a negative visual feature due to the scale and number of turbines that populate the rolling hillsides and can be seen as jutting out of the tops of the smooth, grass-covered, rolling hills that detract from, encroach on, and break up views of these natural features. Utility lines and pylon towers in the program area may detract from the intactness and unity, but to varying degrees, depending on location. Therefore, the overall visual quality of the Patterson Pass Project is moderate.

Existing Viewer Groups and Viewer Responses

The following discussion of existing viewer groups and viewer responses is applicable to the program, Golden Hills Project, and Patterson Pass Project.

Residents

Residences are scattered throughout the program area. These residences tend to be mostly single-family, rural homes on large land parcels. The views of most residents in the program area consist of smooth, grass-covered, rolling hills and turbine strings characteristic of the program area. Residents would be expected to have the highest sensitivity to visual changes in the project areas because of their familiarity with the view, their investment in the area, and their sense of ownership of the view. Residents who occupy parcels leased for wind generation facilities would be expected to have the lowest level of sensitivity to change because these landowners have agreed to lease the site for wind energy generation purposes and would therefore be more accepting of related visual changes.

Businesses

There are a few businesses/industrial uses scattered throughout the program area. However, almost all business and industrial uses are located north of I-580. Businesses in the program area are mostly agriculture-related. There is an off-road specialty store and the Altamont Landfill off of Altamont Pass Road, the Vasco Road Landfill off of Vasco Road, the Mountain House Bar off of Grant Line Road, and a construction company off of Dyer Road. Almost all businesses in the program area have turbines in their viewshed, and their views consist of smooth, grass-covered, rolling hills and turbine strings characteristic of the program area. Employees at nearby businesses would be engaged in work-related activities and would be expected to be less sensitive to visual changes than nearby residents. Therefore, businesses are considered to have low visual sensitivity.

Roadway Users

Motorists use roadways in the program and project areas and may use the roadways for commuting and hauling or for more recreational uses, such as sightseeing on scenic roadways. Roadways traversing the project range from high-speed interstate to lower-speed, two-lane local roadways that wind through the rolling landscape. Motorists' views range from smooth, grass-covered, rolling hills dominated with turbine strings to steep ridges and ravines with no artificial structures. While more numerous than residents, motorists would generally be less sensitive to visual changes in the program area because of the shorter duration of their exposure to the views and the focus of their attention on driving activities. Therefore, motorists are considered to have moderate visual sensitivity.

Recreationists

Recreationists include cyclists on regional trails and local roadways and users of recreational and preserve areas. Viewers using recreation trails, recreation areas, and regional preserves are considered to have high visual sensitivity because recreationists tend to highly value views in designated recreation areas and could be exposed to these views for extended periods (e.g., hiking along regional trails or spending the day at Bethany Reservoir).

3.1.3 Environmental Impacts

Methods for Analysis

Using the concepts and terminology described at the beginning of this section, and criteria for determining significance described below, analysis of the visual effects of the project are based on the following.

- Direct field observation on June 5, 2013 from vantage points, including neighboring properties and roadways.
- Photographic documentation of key views of and from the project sites.
- Evaluation of the regional visual context.
- Visual simulations.
- Review of the project in regard to compliance with state and local ordinances and regulations and local general plan policies.
- Professional standards pertaining to visual quality.

Determination of Significance

In accordance with Appendix G of the State CEQA Guidelines, the program Alternative 1, program Alternative 2, the Golden Hills project, or the Patterson Pass project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

Impacts and Mitigation Measures

This section describes the potential impacts related to aesthetics that could result from implementation of the proposed program and projects. The analysis begins with relatively short-term effects anticipated during construction and proceeds to consideration of the longer term visual impacts.

Impact AES-1a-1: Temporary visual impacts caused by construction activities—program Alternative 1: 417 MW (less than significant with mitigation)

Construction associated with Alternative 1 would create temporary changes in views of and from the program area. Construction is expected to last 8–12 months, and construction activities would create views of heavy equipment and associated vehicles (see Section 2.6.3, *Repowering Activities*), into the viewshed of residents, businesses, recreation areas, state-designated scenic highways (I-580), and Alameda County–designated scenic routes. Construction would also require crane pads, laydown areas for offloading turbine components, and three to eight concrete batch plants. Refer to the *Vicinity Character* discussion above for a detailed description of these land uses in the program area.

Motorists along state-designated scenic highways and County-designated scenic routes, nearby residences, recreationists using the recreation areas and trails, and employees of nearby businesses would be the principal viewer groups. While motorists in the area would be moderately sensitive to changes in views, they have intermittent and short-term visual access to the program area as they are passing by, so they would not be negatively affected by temporary construction activities. Residents are considered highly sensitive viewers and could be adversely affected by construction activities because they would have prolonged views of construction activities and are not accustomed to construction activities in the area. Recreationists are also considered highly sensitive to views of construction activity because they could have prolonged views when using regional trails or spending the day at Bethany Reservoir, they value the views from these recreation areas, and they would not be accustomed to construction activities in the area. Employees of businesses would not be greatly affected by construction activities because they would be mostly focused on their work rather than construction activities.

In addition, high-voltage lighting used for nighttime construction would negatively affect nighttime views of and from the work area and could be a nuisance to nearby residents, who are considered to have high visual sensitivity. Construction is assumed to operate for approximately 10 hours per day.

Alameda County Noise Ordinance, Section 6.60.070, limits noise sources associated with construction to occur between 7 a.m. and 7 p.m. Monday through Friday and between 8 a.m. and 5 p.m. on Saturday and Sunday. This would ensure that most construction would not occur past these hours. During summer, the ordinance will ensure that nighttime lighting is not needed because the sun will rise around 6 a.m. and set around 8:30 p.m. However, during winter, the sun will rise around 7 a.m. and set around 5 p.m. (Sunrise Sunset 2013). Consequently, if construction occurs after sunset, which varies by season, high-powered lighting would be required for construction operations. The presence of this lighting during construction would adversely affect nearby residents if high-powered lighting spills inside their homes or yards; roadway travelers passing by construction work areas near roadways in the program area during dawn and dusk would have similar experiences. High-powered lighting could also adversely affect views of sunsets and nighttime constellations for viewers in the program area during the construction months.

Construction impacts would be temporary and short-term, and decommissioning and construction activities would occur in a manner consistent with Alameda County requirements for work days and hours. However, the highly sensitive viewers in the program area (residents and recreationists) could perceive these impacts as significant. Therefore, construction impacts would be potentially significant on a temporary basis. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-1: Limit construction to daylight hours

Major construction activities will not be undertaken between sunset and sunrise or on weekends. Construction activity is specifically prohibited from using high-wattage lighting sources to illuminate work sites after sunset and before sunrise, with the exception of nighttime deliveries under the approved transportation control plan or other construction activities that require nighttime work for safety considerations.

Impact AES-1a-2: Temporary visual impacts caused by construction activities—program Alternative 2: 450 MW (less than significant with mitigation)

Impacts associated with Alternative 2 would be similar to those of Alternative 1. Under Alternative 2, 21 more turbines could be installed, resulting in a slightly greater amount of construction activity. However, construction of the additional turbines would occur in close proximity to the turbines proposed under Alternative 1 and would not result in perceivable differences in construction between the two alternatives.

Construction associated with Alternative 2 would create temporary changes in views of and from the program area. Construction is expected to last 8–12 months, and construction activities would create views of heavy equipment and associated vehicles (see Section 2.6.3, *Repowering Activities*), into the viewshed of residents, businesses, recreation areas, state-designated scenic highways (I-580), and Alameda County–designated scenic routes. Refer to the *Vicinity Character* discussion above for a detailed description of these land uses in the program area. In addition, high-voltage lighting used for nighttime construction would negatively affect nighttime views of and from the work area and could be a nuisance to nearby residents, who are considered to have high visual sensitivity. Construction is assumed to operate for approximately 10 hours per day. Alameda County Noise Ordinance, Section 6.60.070, limits noise sources associated with construction to occur between 7 a.m. and 7 p.m. Monday through Friday and between 8 a.m. and 5 p.m. on Saturday and Sunday. This would ensure that most construction would not occur past these hours. During

summer, the ordinance will ensure that nighttime lighting is not needed because the sun will rise around 6 a.m. and set around 8:30 p.m. However, during winter, the sun will rise around 7 a.m. and set around 5 p.m. (Sunrise Sunset 2013). Consequently, if construction occurs after sunset, which varies by season, high-powered lighting would be required for construction operations. The presence of this lighting during construction would adversely affect nearby residents if high-powered lighting spills inside their homes or yards; roadway travelers passing by construction work areas near roadways in the program area during dawn and dusk would have similar experiences. High-powered lighting could also adversely affect views of sunsets and nighttime constellations for viewers in the program area during the construction months.

Motorists along State scenic highways and County-designated scenic routes, nearby residences, recreationists using the recreation areas and trails, and employees of nearby businesses would be the principal viewer groups. While motorists in the area would be moderately sensitive to changes in views, they have intermittent and short-term visual access to the program area as they are passing by, so they would not be negatively affected by temporary construction activities. Residents are considered highly sensitive viewers and could be adversely affected by construction activities because they would have prolonged views of construction activities and are not accustomed to construction activities in the area. Recreationists are also considered highly sensitive to views of construction activity because they could have prolonged views when using regional trails or spending the day at the Bethany Reservoir, and they value the views from these recreation areas and would not be accustomed to construction activities in the area. Employees of businesses would not be greatly affected by construction activities because they would be mostly focused on their work, rather than construction activities.

Construction impacts would be temporary and short-term, and decommissioning and construction activities would occur in a manner consistent with Alameda County requirements for work days and hours. However, the highly sensitive viewers in the program area (residents and recreationists) could perceive these impacts as significant.

Therefore, construction impacts would be potentially significant on a temporary basis. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-1: Limit construction to daylight hours

Impact AES-1b: Temporary visual impacts caused by construction activities—Golden Hills Project (less than significant with mitigation)

Construction of the Golden Hills Project is expected to last approximately 9 months. Refer to the discussion of the program alternatives (Impacts AES-1a-1 and AES-1a-2) for a general description of visual impacts of construction activities. Temporary construction impacts for the Golden Hills Project would be similar, and highly sensitive viewers in the Golden Hills Project area (residents and recreationists) could be adversely affected by construction activities. This impact would be potentially significant. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-1: Limit construction to daylight hours

Impact AES-1c: Temporary visual impacts caused by construction activities—Patterson Pass Project (less than significant with mitigation)

Construction of the Patterson Pass Project is expected to last approximately 6–9 months. Refer to the discussion for the program alternatives (Impacts AES-1a-1 and AES-1a-2) for a general description of visual impacts of construction activities. Temporary construction impacts for the Patterson Pass Project would be similar, and highly sensitive viewers in the Patterson Pass Project area (residents and recreationists) could be adversely affected by construction activities. This impact would be potentially significant. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-1: Limit construction to daylight hours**Impact AES-2a-1: Have a substantial adverse effect on a scenic vista—program Alternative 1: 417 MW (less than significant with mitigation)**

As discussed in the *Regulatory Setting*, Policy 105 of the ECAP lists the ridgelines above Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore as sensitive viewsheds. Policy 105 also states that the County shall preserve these visually sensitive ridgelines largely in open space use. Since the project area surrounds Brushy Peak, and Vasco Road passes through the northwestern boundary of the project area (Figure 3.1-2), there is potential for turbines to be installed in these areas. However, under Policy 105 the County would be obligated to disallow new turbine structures from being located in these areas (see *Regulatory Setting* section). The installation of new turbines in such areas would conflict with Policy 105 and would constitute a significant impact on scenic routes identified in the Scenic Route Element.

A number of scenic vistas are available from local roadways, out and over the program area. In addition, scenic vistas exist from local recreational trails and residences and businesses on hillsides in the program area. These areas consist of wide open views of the rolling, grass-covered, rural landscape dotted with existing turbines. The hub height of first- and second-generation turbines ranges from 18 to 55 meters (approximately 59 to 180 feet) and third-generation range from 41 to 68 meters (approximately 134 to 223 feet). The proposed fourth-generation towers installed under Alternative 1 would be 80–96 meters (262–315 feet) tall. Therefore, the proposed fourth-generation towers would be 28–62 meters (92–203 feet) taller than the existing turbines. Views of the proposed turbines may be more or less prevalent depending on a viewer's location within the landscape and if the viewer has more direct views of the turbines or views that are partially or fully screened by topography.

Although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration. Figures 3.1-3 to 3.1-7 show existing views of the program area and simulated views with buildout of the program under both alternatives. The images are presented from north to south; Figures 3.1-6 and 3.1-7 are examples of a scenic vista in the program area. The new, less-cluttered configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

Placement of new turbines on undeveloped portions of the program area would introduce large structures where none presently exist, altering the undeveloped character of these parcels.

There are also scenic vistas from Tesla Road, which is an Alameda County–designated scenic route near the southern boundary of the program area where no turbines currently exist. These views consist of grass-covered, rolling hills dotted with oak trees; steeper ridges; and crevasses and are mostly free from encroachment of artificial features, except for the occasional residence. Installing turbines in these scenic vista areas would constitute a significant impact on views from local roadways (including Tesla Road), recreational trails, and residences and businesses located on hillsides. Policies 170 and 215 of the East County Area Plan require the County, respectively, to protect nearby existing uses from the visual impacts (among other effects) of windfarms' construction and operation, and to maintain and enhance scenic values in these areas through review of development and use of conservation policies (see *Regulatory Setting*). Because it is an area where no turbines currently exist, the conflict with Policies 170 and 215 and the visual impact itself would be significant. For those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the East County Area Plan, and serve to protect and enhance scenic values.

Therefore, this impact would be potentially significant. Implementation of Mitigation Measures AES-2a through AES-2c would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

New turbines along ridgelines or hilltops that have not previously been developed with commercial-scale wind turbines will not be allowed, unless a separate Site Development Review is completed that determines that the visual effects will be substantially avoided by distance from public view points (e.g., more than 2,000 feet), intervening terrain, screening landscaping, or compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features, as approved by the Planning Director.

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Project sites will be cleaned of all derelict equipment, wind turbine components not required for the project, and litter and debris from old turbines and past turbine operations. Such litter and debris may include derelict turbines, obsolete anemometers, unused electrical poles, and broken turbine blades. In addition, abandoned roads that are no longer in use on such parcels will be restored and hydroseeded to reclaim the sites and remove their visual traces from the viewscape, except in cases where the resource agencies (USFWS and CDFW) recommend that the features be left in place for resource protection. All parcels with new turbines will be maintained in such a manner through the life of project operations and until the parcels are reclaimed in accordance with the approved reclamation plan.

Mitigation Measure AES-2c: Screen surplus parts and materials

Surplus parts and materials that are kept onsite will be maintained in a neat and orderly fashion and screened from view. This can be accomplished by using a weatherproof camouflage material that can be draped over surplus parts and materials stockpiles. Draping materials will be changed out to accommodate for seasonal variations so that surplus materials are camouflaged in an effective manner when grasses are both green and brown.

Impact AES-2a-2: Have a substantial adverse effect on a scenic vista—program Alternative 2: 450 MW (less than significant with mitigation)

As discussed in the *Regulatory Setting*, Policy 105 of the ECAP lists the ridgelines above Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore as sensitive viewsheds. Policy 105 also states that the County shall preserve these visually-sensitive ridgelines largely in open space use. Since the project area surrounds Brushy Peak, and Vasco Road passes through the northwestern boundary of the project area (Figure 3.1-2), there is potential for turbines to be installed in these areas. However, under Policy 105 the County would be obligated to disallow new turbine structures from being located in these areas (see *Regulatory Setting* section).

A number of scenic vistas are available from local roadways, out and over the program area. In addition, scenic vistas exist from local recreational trails and residents and businesses located on hillsides within the program area. These areas consist of wide open views of the rolling, grass-covered, rural landscape dotted with existing turbines. The hub height of first- and second-generation turbines ranges from 18 to 55 meters (approximately 59 to 180 feet) and third-generation range from 41–68 meters (approximately 134–223 feet). The proposed fourth-generation towers installed under Alternative 1 would be 80–96 meters (262–315 feet) tall. Therefore, the proposed fourth-generation towers would be 28–62 meters (92–203 feet) taller than the existing turbines located onsite. Views of the proposed turbines may be more or less prevalent depending on a viewer's location within the landscape and if the viewer has more direct views of the turbines or views that are partially or fully screened by topography.

Although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration. Figures 3.1-3 to 3.1-7 show existing views of the program area and simulated views with buildout of the program Alternative 2. The images are presented from north to south, and the existing view shown in Figures 3.1-6 and 3.1-7 show examples of scenic vistas in the program area. Twenty-one additional turbines would be built under Alternative 2. As seen in the simulation for this alternative, only the tops of the turbines and turbine blades of these new turbines would be visible, given the hilly terrain that acts to obscure the rest of the turbine body from view. The additional turbines associated with Alternative 2 are barely noticeable and would result in visual changes that are imperceptible compared with Alternative 1. Like Alternative 1, the new, less-cluttered configuration of Alternative 2 allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

There are also scenic vistas from Tesla Road, which is an Alameda County–designated scenic route near the southern boundary of the program area where no turbines currently exist. These views consist of grass-covered, rolling hills dotted with oak trees; steeper ridges; and crevasses and are mostly free from encroachment of artificial features, except for the occasional residence. Installing turbines in these scenic vista areas would be a significant impact on views from local roadways (including Tesla Road), recreational trails, and residences and businesses located on hillsides. Policies 170 and 215 of the ECAP require the County, respectively, to protect nearby existing uses from the visual impacts (among other effects) of windfarms' construction and operation, and to maintain and enhance scenic values in these areas through review of development and use of

conservation policies (see *Regulatory Setting* section). Because it is an area where no turbines currently exist, the conflict with Policies 170 and 215 and the visual impact itself would be significant. For those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the East County Area Plan, and serve to protect and enhance scenic values.

Therefore, this impact would be potentially significant. Implementation of Mitigation Measures AES-2a, 2b, and 2c would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Impact AES-2b: Have a substantial adverse effect on a scenic vista—Golden Hills Project (less than significant)

There are no designated scenic vistas in the Golden Hill Project area. However, there are a number of scenic vistas available from local roadways in the Golden Hills Project area, such as Patterson Pass Road (Figure 3.1-6), Altamont Pass Road (Figure 3.1-7), Flynn Road, and I-580, out and over the project site. In addition, scenic vistas exist from local recreational trails and, potentially, from nearby residences and businesses located on hillsides could have vista views that include the Golden Hills Project site. These areas consist of wide open views of the rolling, grass-covered, rural landscape dotted with existing turbines. The hub heights of first- and second-generation turbines in the project area range from 18 to 55 meters (approximately 59 to 180 feet). The proposed fourth-generation towers installed would be 80–96 meters (262–315 feet) tall. Therefore, the proposed fourth-generation towers would be 41–62 meters (135–203 feet) taller than the existing turbines. Views of the proposed turbines may be more or less prevalent depending on a viewer's location within the landscape and whether the viewer has more direct views of the turbines or views that are partially or fully screened by topography.

Although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). The new, less-cluttered configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

Because the new turbines would detract less from the natural landscape than the existing string configuration, this impact would be less than significant. With respect to Policies 170 and 215 of the ECAP, the replacement of the many existing smaller and older turbines with proportionally far fewer fourth-generation turbines with broader spacing would serve these policies and help to protect and enhance scenic values.

Impact AES-2c: Have a substantial adverse effect on a scenic vista—Patterson Pass Project (less than significant)

There are no designated scenic vistas in the Patterson Pass Project area. However, there are a number of scenic vistas available from local roadways in the Patterson Pass Project area, such as those from Patterson Pass Road (Figure 3.1-6), out and over the project site. In addition, scenic vistas exist from local recreational trails and, potentially, from nearby residences and businesses located on hillsides could have vista views that include the Patterson Pass Project site. These areas consist of wide open views of the rolling, grass-covered, rural landscape dotted with existing turbines. The hub heights of first- and second-generation turbines located on the site range from 18 to 55 meters (approximately 59 to 180 feet). The proposed fourth-generation towers installed would be 80–96 meters (262–315 feet) tall. Therefore, the proposed fourth-generation towers would be 41–62 meters (135–203 feet) taller than the existing turbines located onsite. Views of the proposed turbines may be more or less prevalent depending on a viewer's location within the landscape and whether the viewer has more direct views of the turbines or views that are partially or fully screened by topography.

Although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). The new, less-cluttered configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

Because the new turbines would detract less from the natural landscape than the existing string configuration, this impact would be less than significant. With respect to Policies 170 and 215 of the ECAP, the replacement of the many existing smaller and older turbines with proportionally far fewer fourth-generation turbines with broader spacing would serve these policies and help to protect and enhance scenic values.

Impact AES-3a-1: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway—program Alternative 1: 417 MW (less than significant with mitigation)

As discussed in the *Vicinity Character* section, I-580 from the San Joaquin County line to SR 205, a 0.4-mile-long segment, is a state-designated scenic highway (California Department of Transportation 2012). As shown in Figure 3.1-2, the program area includes this segment of I-580. The closest existing turbines to this segment are approximately 0.7 mile south and are not easily visible from I-580 due to topography in some areas and distance-only in others. The most dominant artificial features are the large towers associated with power lines and the tall, stadium-type lighting associated with the former Altamont Speedway. Because the location of turbines has not yet been determined, it is possible that wind turbines could be installed in this area. Although motorists are considered moderately sensitive, it would be a significant impact to locate turbines around this designated scenic highway where no turbines currently exist.

In addition to state-designated scenic highways, there are several County-designated scenic routes in the program area. Refer to the *Vicinity Character* discussion for the program for a list of County-designated scenic routes in the program area. Currently, there are no turbines in the program area

around Byron-Bethany Road, Grant Line Road, Tesla Road, and Vasco Road. There are also portions of I-580, Altamont Pass Road, Flynn Road, Mountain House Road, Patterson Pass Road, and the proposed Route 239 Freeway (Figure 3.1-2) where no turbines currently exist, but motorists on these roads are accustomed to seeing wind turbines along the route, so they would not be adversely affected. Additionally, where there are existing turbines, although the new, more efficient turbines would be 28–62 meters (92–203 feet) taller than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). The proposed configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines. However, it would be a significant impact to locate turbines around Byron-Bethany Road, Grant Line Road, Tesla Road, and Vasco Road where no turbines currently exist even though motorists are considered moderately but not highly sensitive.

For such areas where no turbines currently exist, such as the western portion of Flynn Road, the effect on the scenic resources and the visual impact itself would be significant. For those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the East County Area Plan, and serve to protect and enhance scenic values. Therefore, this impact is potentially significant. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

In order to comply with Policy 170 of Alameda County's *East County Area Plan*, and to prevent significant impacts on visual character, no turbines will be located on the undeveloped portion of the Golden Hills project area along Flynn Road (Figure 3.1-2).

Impact AES-3a-2: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway—program Alternative 2: 450 MW (less than significant with mitigation)

As discussed in the *Vicinity Character* section, I-580 from the San Joaquin County line to SR 205, a 0.4-mile-long segment, is a state-designated scenic highway (California Department of Transportation 2012). As shown in Figure 3.1-2, the program area includes this segment of I-580. The closest existing turbines to this segment are approximately 0.7 mile south and are not easily visible from I-580 due to topography in some areas and distance-only in others. The most dominant artificial features are the large towers associated with power lines and the tall, stadium-type lighting associated with the former Altamont Speedway. Because the location of turbines has not yet been determined, it is possible that wind turbines could be installed in this area. Although motorists are

considered moderately sensitive, it would be a significant impact to locate turbines around this designated scenic highway where no turbines currently exist.

In addition to state-designated scenic highways, there are several County-designated scenic routes in the program area. Refer to the *Vicinity Character* discussion for the program for a list of County-designated scenic routes in the program area. Currently, there are no turbines in the program area around Byron-Bethany Road, Grant Line Road, Tesla Road, and Vasco Road. There are also portions of I-580, Altamont Pass Road, Flynn Road, Mountain House Road, Patterson Pass Road, and the proposed Route 239 Freeway (Figure 3.1-2) where no turbines currently exist, but motorists on these roads are accustomed to seeing wind turbines along the route, so they would not be adversely affected. Additionally, where there are existing turbines, although the new, more efficient turbines would be 28–62 meters (92–203 feet) taller than the existing turbines, the new spaced out configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). As seen in the simulations for this alternative, only the tops of the turbines and turbine blades of these new turbines would be visible, if visible at all, given the hilly terrain that acts to obscure the rest of the turbine body from view. The additional turbines associated with Alternative 2 are barely noticeable and would result in visual changes that are unperceivable compared to Alternative 1. Like Alternative 1, the proposed configuration of Alternative 2 allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines. However, it would be a significant impact to locate turbines around Byron-Bethany Road, Grant Line Road, Tesla Road, and Vasco Road where no turbines currently exist even though motorists are considered moderately but not highly sensitive.

For such areas where no turbines currently exist, the effect on the scenic resources and the visual impact itself would be significant. For those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the East County Area Plan, and serve to protect and enhance scenic values. Therefore, this impact is potentially significant. Implementation of Mitigation Measures AES-2a, AES-2b, and AES-2c would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Impact AES-3b: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway—Golden Hills Project (less than significant with mitigation)

There are no state-designated scenic highways in the Golden Hills Project area. Grant Line and Mountain House Roads are more than 1 and 2 miles, respectively, northeast of the closest project boundary and do not have views of the site due to intervening topography. In addition, the proposed Route 239 freeway would be at least 2 miles northeast of the closest project boundary, and it is anticipated that this proposed route would similarly not have views of the project area due to intervening topography. However, there are four County-designated scenic routes in the area: I-580, Altamont Pass Road, Flynn Road, and Patterson Pass Road (Figure 3.1-2). These routes are already lined with existing turbines, so motorists on these routes are accustomed to views of turbines, and although the new, more efficient turbines would be 41–62 meters (135–203 feet) taller than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing thread configuration (Figures 3.1-3 to 3.1-7). The proposed configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

For areas where no turbines currently exist, such as along portions of Flynn Road, the effect on the scenic resources and the visual impact itself would be significant. For those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the ECAP, and serve to protect and enhance scenic values. This impact would be potentially significant. Implementation of Mitigation Measures AES-2a, AES-2b, and AES-2c would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review**Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways****Mitigation Measure AES-2c: Screen surplus parts and materials****Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road****Impact AES-3c: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway—Patterson Pass Project (less than significant)**

There are no state-designated scenic highways in the Patterson Project area. However, there is one County-designated scenic route in the area: Patterson Pass Road (Figure 3.1-2). Patterson Pass is already lined with existing turbines, so motorists on this route are accustomed to views of turbines, and as discussed for Impact AES-3b above, the new turbines are less visually obtrusive (Figure 3.1-6). This configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the 41–62 meters (135–203 feet) taller turbines would draw viewers' attention toward them, the eye is also

able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines. The replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the ECAP, and serve to protect and enhance scenic values.

This impact would be less than significant. No mitigation is required.

Impact AES-4a-1: Substantially degrade the existing visual character or quality of the site and its surroundings—program Alternative 1: 417 MW (less than significant with mitigation)

The program primarily would be visible to recreationists, area residents, motorists, and employees of the businesses (see *Vicinity Character* section for details).

As discussed in the *Vicinity Character* section, the area is mostly characterized by grass-covered, rounded hills and smooth contours. Strings of turbines, plus power lines, transformers, access roads, and substations are the most visually distinct artificial feature throughout most of the program area. In addition, although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). This configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines. Because of this, program implementation in areas where turbines currently exist would not substantially degrade the existing visual character or quality of the program area and would improve views where existing turbine threads are replaced with much fewer of the new larger turbines.

However, no turbines currently exist in the southern portion of the program area, starting approximately 2.5 miles south of Patterson Pass Road, and there are other patches throughout the program area where no turbines currently exist (Figure 2-3). Because turbine locations for the program have not yet been determined, it is possible that turbines would be sited in these areas. The program would construct access roads, turbines, and the associated foundations, collection systems, and communication systems, and meteorological towers. This would substantially degrade the existing visual character and quality of these areas.

The area south of Patterson Pass Road is sparsely populated. There are only a few residences on Tesla Road, which is also a County-designated scenic route. The potential future Tesla Regional Preserve is in this area. In addition, the Carnegie State Vehicular Recreation Area is just south of the program area boundary (Figure 3.1-2), and there are various recreation trails in this area as well. New turbines associated with the program could be visible from these areas, and residents and recreationists are considered highly sensitive viewers. In addition, motorists along Tesla Road would not be accustomed to wind turbines along that route, and although motorists are considered moderately sensitive, Tesla Road is a County-designated scenic route.

In addition, there are no existing turbines currently located on a portion of the site along Flynn Road, but there are turbines within 0.5 mile that are visible from this site. Turbines are a part of the existing visual character of the site vicinity. However, the project would also entail construction of access roads, turbines and foundations, collection system, communication system, and

meteorological towers on this portion of the site. These changes would substantially degrade the existing visual character and quality of this undeveloped site.

According to Policy 170 of the ECAP, Alameda County is obligated to protect nearby existing uses from potential visual and other impacts generated by the construction and operation of windfarm facilities (see *Regulatory Setting* section). Several residences in the vicinity would have views of this portion of the project area. Because residents are considered highly sensitive viewers, constructing turbines in this area would conflict with Policy 170. This impact would be significant, but implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Impact AES-4a-2: Substantially degrade the existing visual character or quality of the site and its surroundings—program Alternative 2: 450 MW (less than significant with mitigation)

The program primarily would be visible to recreationists, area residents, motorists, and employees of the businesses (see *Vicinity Character* section for details).

As discussed in the *Vicinity Character* section, the area is mostly characterized by grass-covered, rounded hills and smooth contours. Strings of turbines, plus power lines, transformers, access roads, and substations are the most visually distinct artificial feature throughout most of the program area. In addition, although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). As seen in the simulations for this alternative, only the tops of the turbines and turbine blades of these new turbines would be visible, if visible at all, given the hilly terrain that acts to obscure the rest of the turbine body from view. The additional turbines associated with Alternative 2 are barely noticeable and would result in visual changes that are unperceivable compared to Alternative 1. Like Alternative 1, the configuration of Alternative 2 allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than under existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines. Because of this, program implementation in areas where turbines currently exist would not substantially degrade the existing visual character or quality of the program area and would improve views where existing turbine threads are replaced with far fewer of the new larger turbines.

However, as with Alternative 1, no turbines currently exist in the southern portion of the program area, starting approximately 2.5 miles south of Patterson Pass Road, and there are other patches throughout the program area where no turbines currently exist (Figure 2-3). Because turbine locations for the program have not yet been determined, it is possible that turbines would be sited in these areas. The program would construct access roads; turbines; the associated foundations,

collection systems, and communication systems; and meteorological towers. This would substantially degrade the existing visual character and quality of these areas.

The area south of Patterson Pass Road is sparsely populated. There are only a few residences on Tesla Road, which is also a County-designated scenic route. The potential future Tesla Regional Preserve is in this area. In addition, the Carnegie State Vehicular Recreation Area is just south of the program area boundary (Figure 3.1-2), and there are various recreation trails in this area as well. New turbines associated with the program could be visible from these areas, and residents and recreationists are considered highly sensitive viewers. In addition, motorists along Tesla Road would not be accustomed to wind turbines along that route, and although motorists are considered moderately sensitive, Tesla Road is a County-designated scenic route.

In addition, there are no existing turbines currently located on a portion of the site along Flynn Road. There are turbines within 0.5 mile that are visible from this site, but they are not in the near foreground. Turbines are a part of the existing visual character of the site vicinity. However, the project would construct access roads, turbines, and the associated foundation, collection system, communication system, and meteorological towers on this portion of the site. These changes would substantially degrade the existing visual character and quality of this undeveloped site. There several residences in the vicinity that would have views of this portion of the site. Residents are considered highly sensitive viewers.

According to Policy 170 of the ECAP, Alameda County is obligated to protect nearby existing uses from potential visual and other impacts generated by the construction and operation of windfarm facilities (see *Regulatory Setting* section). Since there residences in the vicinity that would have views of the site, constructing turbines on this site would conflict with Policy 170. Therefore, this impact would be significant, but implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Impact AES-4b: Substantially degrade the existing visual character or quality of the site and its surroundings—Golden Hills Project (less than significant with mitigation)

As for the program, the Golden Hills Project would be primarily visible to recreationists, area residents, motorists, and employees of businesses (see *Vicinity Character* section for details).

The new, more efficient turbines are larger and more widely spaced than the existing turbine configuration, which detracts less from the natural landscape than the existing string configuration (Figures 3.1-3 to 3.1-7). Repowering of the Golden Hills Project would be conducted in areas where turbines currently exist and so would not substantially degrade the existing visual character or quality of the Golden Hills project area and would improve views where existing turbine threads are replaced with fewer of the new, larger turbines. In addition, although I-580, Flynn Road, and

Patterson Pass Road are County-designated scenic routes, motorists on these roads are accustomed to the existing turbines along these routes.

As discussed in detail above, there are no existing turbines currently on a portion of the site along Flynn Road, and constructing turbines on this site would substantially degrade the existing visual character and quality in this area significantly affecting highly sensitive residents in the vicinity.

According to Policy 170 of the ECAP, Alameda County is obligated to protect nearby existing uses from potential visual and other impacts generated by the construction and operation of windfarm facilities. Since there are residences in the vicinity that would have views of this area, constructing turbines on this site would conflict with Policy 170. Implementation of Mitigation Measures AES-2a, AES-2b, and AES-2c, and AES-3 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Impact AES-4c: Substantially degrade the existing visual character or quality of the site and its surroundings—Patterson Pass Project (less than significant with mitigation)

The Patterson Pass Project would be primarily visible to motorists along Patterson Pass Road and employees of nearby businesses (see *Vicinity Character* section for details). As discussed in the *Existing Viewer Groups and Viewer Responses* section, motorists are considered to have moderate visual sensitivity, and employees of businesses are considered to have low visual sensitivity.

The Patterson Pass Project vicinity is characterized by grassy, rolling hills with strings of turbines, transmission lines, and access roads. There are 317 turbines and associated infrastructure in the Patterson Pass project area. The Patterson Pass Project would remove the existing turbines and would construct 8–12 turbines and associated foundations and infrastructure on the site, as described in Section 2.6.2, *Patterson Pass Project*. Although the new, more efficient turbines are larger than the existing turbines, the new widely spaced configuration detracts less from the natural landscape than the existing string configuration. Refer to Figure 3.1-6 for a representative simulation. This configuration allows for views of the rolling, grassy terrain to become more prominent, back-dropped against the sky, and less interrupted by anthropogenic features. While the larger turbines would draw viewers' attention toward them, the eye is also able to follow the ridgeline of the hills in a more cohesive manner than existing conditions. With existing conditions, the eye is drawn to and focused on the numerous turbines that clutter the view by sticking up and across the hillsides and ridgelines.

For these reasons, the Patterson Pass Project would not substantially degrade the existing visual character or quality of the Patterson Pass Project site or surrounding area and would improve views because the existing turbine threads would be replaced with much fewer of the new larger turbines. In addition, although Patterson Pass Road is a County-designated scenic route, motorists on this road are accustomed to the existing turbines along the route, and there are no other sensitive viewers in the Patterson Pass Project vicinity.

According to Policy 170 of the ECAP, Alameda County is obligated to protect nearby existing uses from potential visual and other impacts generated by the construction and operation of windfarm facilities. Since there residences in the vicinity that would have views of the site, constructing turbines on this site would conflict with Policy 170. The project would introduce large, visually obtrusive turbines within existing viewsheds. Implementation of Mitigation Measures AES-2a, AES-2b, and AES-2c would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Impact AES-5a-1: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area—program Alternative 1: 417 MW (less than significant with mitigation)

As discussed in the project description under *Lighting*, all repowered wind turbines would require Federal Aviation Administration (FAA) lighting. This could affect daytime and nighttime views in the program area. However, because the program would replace existing turbine strings with much fewer of the larger, more efficient turbines, the amount of FAA-required lighting in the program area is expected to be similar to existing turbine lighting in the program area. Therefore, the proposed program would not create a new source of substantial light in the program area that would affect daytime or nighttime views.

There are currently nine substations owned and operated by the wind companies within the program area. One substation per project is expected to be required as part of the program. These substations may be newly constructed, or existing substations may be reconstructed or expanded. Existing substations may be replaced in the same general locations. As described in the project description, under *Collector Substations*, substations would be lighted for safety and security. Because any new lights would be shielded or directed downward to reduce glare, this impact would be less than significant.

Generally, turbines are painted white. Because the existing turbines would be replaced with far fewer of the larger, more efficient turbines, this source of glare is expected to be reduced in areas where turbines currently exist. However, in areas where no turbines currently exist, their presence could be a new source of substantial glare. Moreover, as stated in the project description, the color of towers and rotors on the new turbines would be neutral and nonreflective (e.g., dull white or light gray).

Blade rotation could cause shadow flicker that could be a visual intrusion to viewers and could be especially disruptive to residents who would be exposed to these conditions for long periods of time (Department of Energy and Climate Change no date). As shown in Table 2-2, Alameda County has developed setback requirements for siting turbines in relation to certain types of land uses, and turbines would not be allowed to be located within these setback distances. However, these setbacks may not be sufficient to prevent shadow flicker with the new, taller turbines. Implementation of Mitigation Measure AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

Where shadow flicker could result from the installation of wind turbines proposed near residences (i.e., within 500 meters [1,640 feet] in a generally east or west direction to account for seasonal variations), the project applicant will prepare a graphic model and study to evaluate shadow flicker impacts on nearby residences. No shadow flicker in excess of 30 minutes in a given day or 30 hours in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences, Alameda County will require an increase in the required setback distances to ensure that residences are not affected. If any residence is affected by shadow flicker within the 30-minute/30-hour thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine; providing opaque window coverings, window awnings, landscape buffers, or a combination of these features to reduce flicker to acceptable limits for the affected receptor; or shutting down the turbine during the period shadow flicker would occur. Such measures may be undertaken in consultation with owner of the affected residence. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-hour thresholds and the property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine will be relocated to reduce the effect to acceptable limits.

Impact AES-5a-2: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area—program Alternative 2: 450 MW (less than significant with mitigation)

Under Alternative 2, 21 additional turbines and associated facilities would be constructed in the program area. Light and glare impacts would be similar at the location of any given feature to those under Alternative 1, but the amount of light and glare would only result in a small incremental increase compared with Alternative 1.

As discussed in the project description under *Lighting*, all repowered wind turbines would require Federal Aviation Administration (FAA) lighting. This could affect daytime and nighttime views in the program area. However, because the program would replace existing turbines with far fewer of the larger, more efficient turbines, the amount of FAA-required lighting in the program area is expected to be similar to existing turbine lighting in the program area, even with the greater number of turbines that could be installed under Alternative 2. Therefore, the program would not create a new source of substantial light in the program area that would affect daytime or nighttime views.

One substation per project is expected to be required as part of the program. These substations may be newly constructed, or existing substations may be reconstructed or expanded. Existing substations may be replaced in the same general locations. As described in the project description, under *Collector Substations*, substations would be lighted for safety and security. Because any new lights would be shielded or directed downward to reduce glare, this impact would be less than significant.

Generally, turbines are painted white. Because the existing turbines would be replaced with far fewer of the larger, more efficient turbines, this source of glare is expected to be reduced in areas where turbines currently exist. However, in areas where no turbines currently exist, their presence could be a new source of substantial glare. Moreover, as stated in the project description, the color

of towers and rotors on the new turbines would be neutral and nonreflective (e.g., dull white or light gray).

Blade rotation could cause shadow flicker that could be a visual intrusion to viewers and could be especially disruptive to residents who would be exposed to these conditions for long periods of time. As shown in Table 2-2, Alameda County has established setback requirements for siting turbines within certain types of land uses, and turbines would not be allowed to be located within these setback distances. However, these setbacks may not be sufficient to prevent shadow flicker with the new, taller turbines. Implementation of Mitigation Measure AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

Impact AES-5b: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area—Golden Hills Project (less than significant with mitigation)

Like the program, the Golden Hills Project would require FAA lighting. In addition to new turbines, the Golden Hills Project is anticipated to require two new collector substations. However, as stated in the project description under *Collector Substations*, the existing substations would be replaced in the same general location and would include an outdoor lighting system. However, the new lights would be shielded or directed downward to reduce glare, and the new substations would not emit more light than the existing substations.

Because turbines could be installed where no turbines currently exist, a new source of substantial glare could be created. However, as stated in the project description, the color of towers and rotors on the new turbines would be neutral and nonreflective (e.g., dull white or light gray).

Blade rotation could cause shadow flicker that could be a visual intrusion to viewers and could be especially disruptive to residents who would be exposed for long periods of time. Implementation of Mitigation Measure AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

Impact AES-5c: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area—Patterson Pass Project (less than significant with mitigation)

Like the program, the Patterson Pass Project would require FAA lighting. Implementation of the Patterson Pass Project would reduce glare because there would be far fewer turbines on the site, but the larger, bright white surfaces typical of turbines would have the potential to increase glare. This impact would be potentially significant, but as stated in the project description, the color of towers and rotors on the new turbines would be neutral and nonreflective (e.g., dull white or light gray).

Blade rotation could cause shadow flicker that could be a visual intrusion to viewers and could be especially disruptive to residents who would be exposed for long periods of time. Implementation of Mitigation Measure AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

Impact AES-6a-1: Consistency with state and local policies—program Alternative 1: 417 MW (less than significant with mitigation)

The County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. However, the proposed project would still introduce large, visually obtrusive turbines within existing viewsheds of scenic viewsheds in proximity to sensitive viewers and residences. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

Impact AES-6a-2: Consistency with state and local policies—program Alternative 2: 450 MW (less than significant with mitigation)

Even with the greater number of turbines that could be installed under Alternative 2, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. However, the proposed project would still introduce large, visually obtrusive turbines within existing viewsheds of scenic viewsheds in proximity to sensitive viewers and residences. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road**Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker****Impact AES-6b: Consistency with state and local policies—Golden Hills Project (less than significant with mitigation)**

Under the Golden Hills Project, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. While the proposed project would replace smaller existing turbines with larger, more visually obtrusive turbines within existing viewsheds, there will be considerably fewer turbines as a result of repowering. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review**Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways****Mitigation Measure AES-2c: Screen surplus parts and materials****Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road****Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker****Impact AES-6c: Consistency with state and local policies—Patterson Pass Project (less than significant with mitigation)**

Under the Patterson Pass Project, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. However, the proposed project would still introduce large, visually obtrusive turbines within existing viewsheds of scenic viewsheds in proximity to sensitive viewers and residences. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than-significant level.

Mitigation Measure AES-2a: Require site development review

Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Mitigation Measure AES-2c: Screen surplus parts and materials

Mitigation Measure AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

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