

5.1 Overview

This chapter includes the following discussions and analyses required by the California Environmental Quality Act (CEQA).

- Cumulative impacts
- Growth-inducing impacts
- Significant and unavoidable environmental impacts
- Significant irreversible environmental impacts

5.2 Cumulative Impacts

The State CEQA Guidelines define a cumulative impact as two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. The incremental impact of a project may be considerable when viewed in the context of other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time (State CEQA Guidelines Section 15355).

State CEQA Guidelines Section 15130(b) indicates that an adequate discussion of significant cumulative impacts requires consideration of either of the following.

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan.

This environmental impact report (EIR) uses a combination of a plan-based approach and a list-based approach to determine whether significant cumulative impacts would occur. For a plan-based approach, the EIR analysis considers the Alameda County General Plan, East County Area Plan (ECAP), and other applicable planning documents identified in Section 5.2.1, *General and Regional Plans Considered*. For the list-based approach, project impacts were analyzed in combination with the impacts of the other wind energy facilities and repowering projects identified in Section 5.2.2, *Specific Projects Considered*, and with the impacts of the past, present and reasonably foreseeable other projects identified in Section 5.2.2.

In reaching a conclusion for each resource area (i.e., the topics analyzed in Sections 3.1 through 3.12 of Chapter 3, *Impact Analysis*), five considerations were made: (i) the geographic scope of the cumulative impact area for that resource, (ii) the timeframe within which project-specific impacts

could interact with the impacts of other projects, (iii) whether a significant adverse cumulative condition presently exists to which project impacts could contribute, (iv) the significance of the incremental project-specific contribution to cumulative conditions, and (v) whether any cumulative impact is significant.

For the purpose of this EIR, significant cumulative impacts would occur if impacts related to the implementation of the Initial and Full Repower, combined with the environmental impacts of other past, present, and reasonably foreseeable future projects, would result in an adverse significant effect. For an impact to be considered cumulative, these incremental impacts and potential incremental impacts must be related to the types of impacts caused by the project (i.e., the types of impacts caused by repowering existing wind energy facilities and evaluated in Chapter 3, *Impact Analysis*).

5.2.1 General and Regional Plans Considered

The following adopted plans are those considered in combination with the project for assessing cumulative impacts. In most cases these plans have been prepared by local agencies to meet the requirements of State law (certain plans, such as the habitat conservation/natural community conservation plans, have been prepared voluntarily), and comprise the preparing agencies' comprehensive, long-term visions for physical development or resources conservation within the region.

- Alameda County General Plan
- Alameda County East County Area Plan
- Altamont Pass Wind Resource Area Natural Community Conservation Plan/Habitat Conservation Plan
- Contra Costa County General Plan
- Contra Costa County Airport Land Use Compatibility Plan
- East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan
- San Joaquin County General Plan
- City of Tracy General Plan
- I-205 Corridor Specific Plan

5.2.2 Specific Projects Considered

The following projects are those considered in combination with the project for assessing cumulative impacts. Incremental impacts of the Initial and Full Repower have the potential to interact with the continuing impacts of past projects, the impacts of other current projects, and the anticipated impacts of reasonably foreseeable future projects. These projects include other existing wind energy facilities and proposed wind repowering projects in the APWRA, and other non-wind energy projects that have potentially overlapping impacts with those of the Sand Hill Wind Project. Figure 5-1 depicts the locations of specific projects considered for purposes of the cumulative analysis.

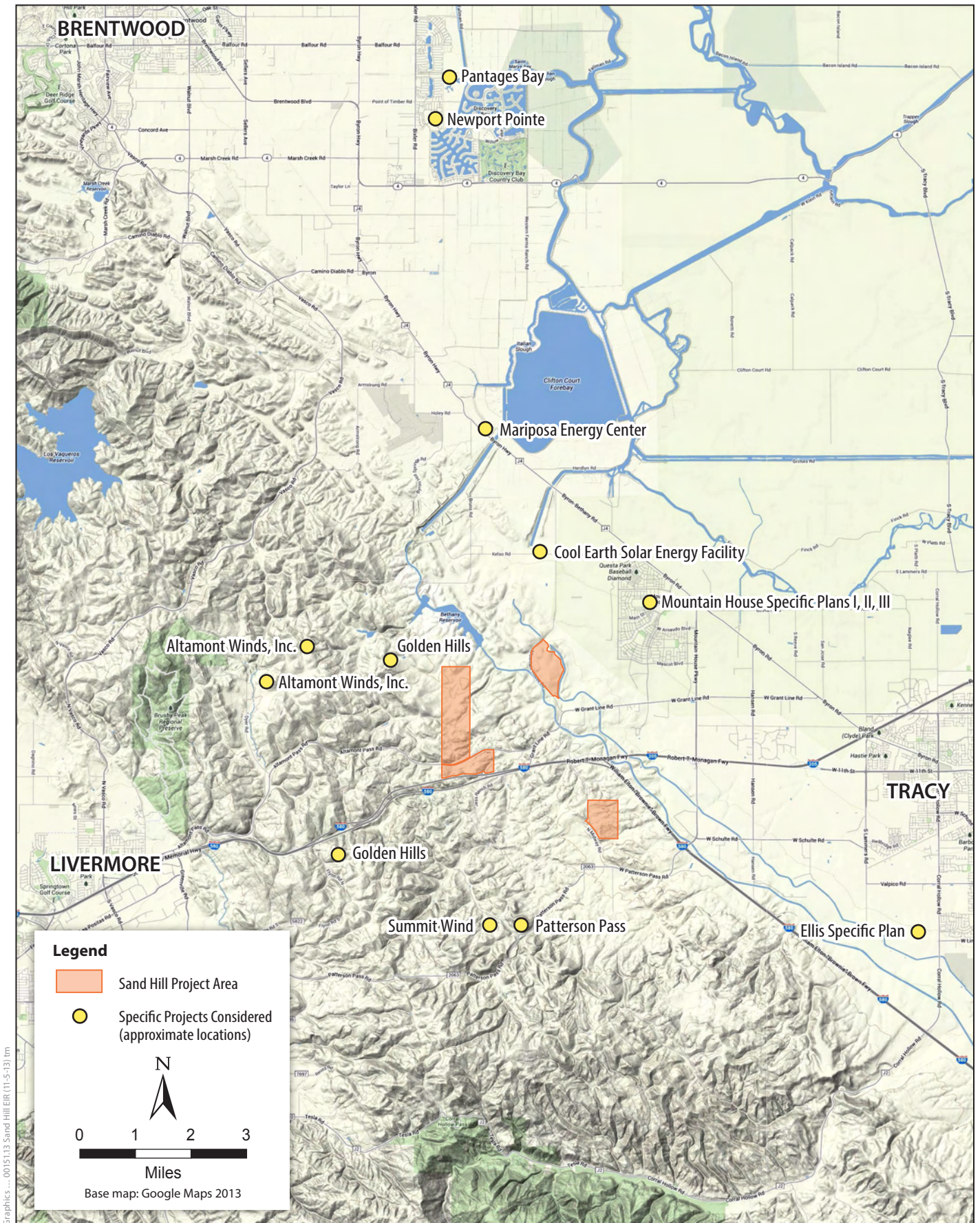


Figure 5-1
Specific Projects Considered

Altamont Pass Repowering Projects

The conditional use permits (CUPs) approved in 2005 anticipated and in part pre-scheduled repowering of the APWRA, to require existing wind turbines to be decommissioned and fully removed by September 2018, and for new state-of-the-art turbines to be installed in their place beginning in 2010. Therefore, all of the Altamont Pass Wind Resource Area (APWRA) is expected to be repowered or in the process of repowering by 2018. To streamline the environmental approval process, Alameda County has begun work on a Program Environmental Impact Report (PEIR) in compliance with CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000 et seq.). The PEIR will be an informational document to aid in public review and official decision-making regarding repowering of the APWRA.

In addition to the PEIR, the County is in the process of developing an Avian Protection Program (APP) that will provide a framework and process for wind-energy development to comply with applicable statutes (e.g., Migratory Bird Treaty Act [MBTA] and Bald and Golden Eagle Protection Act [BGEPA]) within the Alameda County portion of the APWRA. The APP will provide a broad evaluation of existing environmental conditions, bird use, and avian fatalities in the APWRA. It is also expected to address subsequent, project-specific requirements that will streamline permitting and ensure that mitigation and minimization measures are consistent across the Alameda County portion of the APWRA.

Golden Hills Project

NextEra Energy Resources proposes to develop, construct, own, and operate the Golden Hills Project, a 135.7-megawatt (MW) wind repowering project using its existing assets in the APWRA. Construction was scheduled to begin in 2011, although the project's actual start date is contingent on when entitlements become available. All phases of construction would be completed no later than 2018.

The Golden Hills Project comprises approximately 8,950 acres and would decommission and replace the existing wind turbines, which are considered high risk for avian species, with larger, more efficient turbines that have been determined to have considerably lower risks to avian species per MW of capacity. Existing wind turbines, concrete foundations for the turbine towers, pad-mounted transformers and electrical cabinets, and meteorological (met) towers would be permanently taken out of service, dismantled, and physically removed.

Following removal of existing turbines, up to 59 wind turbines, each of which would be approximately 428 feet tall to the tip of the blade and rated at 2.3 MW, would be installed. Associated infrastructure would include reinforced concrete foundations for each wind turbine and their step-up transformers, local access roads, crane pads, a 34.5 kV electrical collection system, transmission line take-off, turbine control and communications systems, other electrical/controls ancillary equipment, substations for interconnections with the Pacific Gas and Electric Company (PG&E) transmission network, and several permanent met towers 262 feet high.

The Golden Hills Project would be designed with a control system that allows remote, continuous monitoring and operation. Maintenance would involve both scheduled preventive and unscheduled repair work. The anticipated life of the windfarm could be greater than 30 years. Upgrading and replacing equipment could extend the operating life indefinitely, assuming that there will be future demand (after the 30-year term) for the electricity generated by the project.

Patterson Pass Project

EDF Renewable Energy (formerly known as enXco) proposes the Patterson Pass Project, currently a 21.8 MW windfarm made up of 336 Nordank and Bonus 65 kilowatt (kW) turbines, now operating 317 turbines. The proposed project is to repower the existing Patterson Pass Wind Farm on private land owned by EDF Renewable Energy. Project components include replacement and installation of 7 to 12 wind turbine generators, towers, foundations, and pad-mounted transformers and installation (as needed) of power collection cables and development of roads.

Summit Wind Project

Altamont Winds, Incorporated (AWI) proposes the Summit Wind Project, a 95 MW wind repowering project, to be constructed on lands in the APWRA currently occupied by existing wind facilities. The Summit Wind Project would repower the existing wind energy facility by decommissioning all existing wind turbines on the site and replacing them with up to 59 new, larger wind turbines.

Altamont Winds, Incorporated Permit Modification

The AWI permit modification project, approved by the Alameda County East County Board of Zoning Adjustments (EBZA) in July 2013, consists of changes to the operational and decommissioning schedule of an existing 85.8 MW, 233-acre windfarm interspersed among other operators' facilities within a larger 14,196-acre area of the Alameda County portion of the APWRA. Under the recently-approved CUPs, AWI's 828 currently permitted wind turbines are scheduled to operate—with the exception of APWRA-wide winter seasonal shutdown between November 1 and February 15 of each year—until October 31, 2015. This is in lieu of a phased decommissioning schedule that would have required the wind farm to permanently shut down 230 turbines by September 30, 2013, 460 more turbines by September 30, 2015, and the remaining 148 turbines by September 30, 2018.

Mariposa Energy Center

The proposed Mariposa Energy Center project would be a 200-MW natural-gas-fired power plant on approximately 10 acres of a 158-acre parcel, immediately south of the PG&E Bethany Compressor Station in Alameda County, approximately 7 miles northwest of Tracy and 7 miles east of Livermore, near the community of Mountain House. The facility is proposed to be a simple-cycle peaker power plant that would be used to meet demand for electric power during short-term peaks in demand. As such it would run during periods of high demand for electricity, most often during the summertime when air conditioning use is highest. The project would use four simple-cycle turbines designed to supply power when renewable energy sources such as wind and solar power might not be available.

Cool Earth Solar Energy Facility

The Cool Earth Solar Energy Project would be a utility-scale solar power plant developed on approximately 140 acres next to an existing 12 kV PG&E power line near Byron, California. The project would be a utility-scale Solar Energy Facility (SEF) of up to 10 MW with an initial phase of 30 acres to produce 1.5 MW and 3,000 MW-hours of electricity annually.

Other Projects in the Area

Other development projects proposed near the Sand Hill Wind Project, the impacts of which could interact with those of the project, are listed below.

City of Tracy

The City of Tracy anticipates that much of its future residential growth will occur within two specific plan areas—the Tracy Hills Specific Plan and the Ellis Specific Plan. These specific plan areas are approximately 6 miles east of the Sand Hill Wind Project area and are described below.

Tracy Hills Specific Plan

The Tracy Hills Specific Plan development area is approximately 6,175 acres that parallels both sides of I-580 north of Corral Hollow Road. Tracy Hills is a planned residential community with a range of housing types and supportive services including commercial and retail uses, public recreational facilities and a greenbelt, greenways and open space system. In addition, some areas have been designated for industrial and office use. The Tracy Hills Specific Plan has a total residential capacity of 5,419 housing units.

Ellis Specific Plan

The Ellis Specific Plan comprises a 321-acre parcel identified as Urban Reserve 10 in the City of Tracy General Plan. The area is between Lammers Road and Corral Hollow Road along the north side of the UPRR rail line. The Ellis Specific Plan will contain a mix of residential housing types and densities, neighborhood parks, and a community park/swim center. Commercial and office/professional uses will also be included. Upon buildout, the plan will accommodate a maximum of 2,250 residential units (minimum 1,200 units), not including secondary residential units.

San Joaquin County

Mountain House Specific Plans I, II, and III

The Mountain House Specific Plans I, II, and III is a 4,791-acre community in southwestern San Joaquin County 2 miles east of the Sand Hill Wind Project area. Mountain House is a mixed-use community with emphasis on alternate transit options and efficient circulation and land use designs. The residential component ranges in density from very low to high density and mixed use.

San Joaquin County adopted the Mountain House I Specific Plan on November 10, 1994. This plan covers the first stages of development and comprises 1,348 acres (approximately 25% of the overall plan area). The Mountain House I Specific Plan also includes three neighborhoods, totaling approximately 4,107 housing units that are mostly built out.

The Mountain House II Specific Plan was adopted by San Joaquin County on February 8, 2005 and is the second phase of development. This plan encompasses 2,295 acres, and comprises seven of the twelve Mountain House neighborhoods, a town center, commercial uses, schools, parks, and open space. This plan will include 9,404 dwelling units, of which 2,915 units will be senior housing.

Mountain House III Specific Plan, adopted on November 22, 2005, covers the final phase of development. This plan encompasses 815 acres in the southern portion of the community and consists of higher residential densities than the other neighborhoods. The plan proposes to build 2,240 units and covers two of the twelve neighborhoods and part of a third neighborhood built around a 31-acre park.

Contra Costa County

Pantages Bays

The Pantages Bays project, approximately 10 miles north of the project area, is a currently undeveloped 171-acre site approximately 4 miles northeast of Byron, that would be an expansion of the existing town of Discovery Bay. A general plan amendment to change land use designations is proposed. Under the amended land use designations, the project would develop 292 residential homes with associated streets and infrastructure on approximately 80 acres. The remaining 91 acres would consist of open-water areas, emergent marsh, wetlands, open space areas, and a marine patrol substation.

Newport Pointe

The Newport Pointe project proposes to subdivide a 20-acre site into 67 single-family residential lots and five other parcels to include open space, an area dedicated to a solar field array, and approximately 6 acres of wetlands. The Newport Pointe site is approximately 3.5 miles north of the Sand Hill Wind Project area, east of Bixler Road and west of Newport Drive in the Discovery Bay West area. A general plan amendment to change the current land use designation of agriculture would also be required.

5.2.3 Discussion of Potential Cumulative Impacts

Aesthetics

As discussed in Section 3.1, *Aesthetics*, both the Initial Repower and Full Repower phases would result in significant and unavoidable impacts to scenic vistas, designated scenic routes, and visual character and quality and would result in less-than-significant impacts related to a new source of glare with the Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* incorporated. In addition, impacts resulting from the Full Repower would be more intensive and severe than for the Initial Repower (40 turbines) because there would be 320–330 new, shrouded turbines installed. The Full Repower would also include the installation of additional met towers and the construction of a new operations and maintenance (O&M) building on one of the parcels. Therefore, when considered with other foreseeable projects, both the Initial Repower and Full Repower would result in cumulatively considerable impacts to scenic vistas, designated scenic routes, and visual character and quality. However, because the Sand Hill Wind Project turbines would not be tall enough to require Federal Aviation Administration (FAA)-compliant safety lighting and, with the Color Treatment standard condition and mitigation to reduce impacts from a new source of light if a new O&M building is required, neither the Initial Repower nor the Full Repower are expected to result in a cumulatively considerable contribution to new sources of substantial light or glare.

Agricultural Resources

Neither the Initial Repower nor the Full Repower of the Sand Hill Wind Project would result in any incremental impacts related to agriculture or forestry resources. The Initial Repower would result in the net loss of 11.2 acres of grazing land to wind generation facilities, and the Full Repower would increase that acreage by approximately 11 acres, for a 30-year net loss of 22.2 acres of grazing land. However, continued operation of wind facilities on the project parcels would preclude conversion of that acreage to other, nonagricultural uses. Consequently, although the Sand Hill Wind Project

would contribute to a cumulative loss of grazing land to wind generation facilities for a 30-year duration, it would not contribute to any cumulative impact on prime farmland, unique farmland, or farmland of statewide importance (Farmland) or forestry resources.

Air Quality

The Bay Area Air Quality Management District's (BAAQMD's) CEQA Guidelines indicate that the BAAQMD thresholds of significance represent both project-level and cumulative thresholds, such that if a project exceeds a BAAQMD threshold, it is deemed both a project-level impact and a cumulatively considerable significant impact. The BAAQMD's CEQA guidelines state the following.

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The analysis to assess project-level air quality impacts should be as comprehensive and rigorous as possible.

Construction emissions from the Initial and Full Repower would exceed the BAAQMD thresholds, even with mitigation measures implemented. Consequently, this impact would be significant and unavoidable and would contribute to cumulative impacts.

As indicated in Chapter 3.3, Air Quality, the BAAQMD's thresholds of significance represent both project-level and cumulative thresholds. Therefore, please refer to the analysis presented in Chapter 3.3 Air Quality, for a detailed assessment of cumulative impacts. The results of the cumulative impact assessment are summarized in Table 3.3-15 of Chapter 3.3 Air Quality.

Biological Resources

As described in Section 3.4, *Biological Resources*, the Sand Hill Wind Project uses a new turbine technology, and although reductions in the impacts on avian species are expected, there is the potential that the impacts could be similar to or possibly even greater than the existing turbines. On this basis, the County has concluded that the proposed Initial and Full Repower could result in a significant and unavoidable impact on avian species, even after the implementation of mitigation. Current estimates of focal species fatalities in the APWRA (red-tailed hawk, burrowing owl, golden eagle, and American kestrel) indicate mortality levels of 708 to 833 focal species each bird year (ICF International 2013). Reasonably foreseeable repowering projects, which would utilize newer, larger turbines (with repowering on a MW for MW basis) are expected to result in an overall reduction in avian impacts when compared to the existing baseline fatality of the older-generation turbines. Several repowering projects have already been implemented in the APWRA, such as the Buena Vista, Vasco, and the Diablo Winds projects. Several studies have been conducted to predict the effect of repowering within the APWRA. Monitoring data for the Diablo Winds repowering project (repowered in 2004) from Smallwood and Karas (2009) indicate that fatality rates were 54% and 66% lower for raptors and all birds, respectively, relative to concurrently operating first- and second-generation turbines (2005–2007). Additionally, they predicted that repowering across the APWRA could produce similar reductions for raptors and all birds in general (54% and 65%, respectively). Smallwood (2010) used fatality data from 2005 to 2009 throughout the APWRA to develop multiple baseline fatality-rate estimates, and he compared those to predicted fatality rates at the proposed Tres Vaqueros repowering project in Contra Costa County. He concluded that current-generation turbines would reduce fatality rates by 65% and 61% for raptors and all birds, respectively.

The Monitoring Team (MT), under the direction of the Altamont Pass Scientific Review Committee (SRC), compared the average of annual adjusted fatality rates at the Diablo Winds and Buena Vista repowering projects to non-repowered turbines across the APWRA to determine if repowering may reduce the number of turbine-related fatalities for American kestrel, burrowing owl, golden eagle, and red-tailed hawk (ICF International 2013). The estimates of the adjusted fatalities rates for the Diablo Winds turbines were significantly lower than the corresponding estimates for the non-Diablo turbines for all species, except burrowing owl, the only species with overlapping 95 percent confidence intervals. The decrease was greatest for golden eagle (89 percent) followed by American kestrel (88 percent), red-tailed hawk (36 percent) and burrowing owl (19 percent). For the four species as a whole, the decrease was 46%. Reductions were even greater for the Buena Vista site for red-tailed hawk (77 percent) and burrowing owl (100 percent, no burrowing owl fatalities were detected at the Buena Vista site). However, the decrease in fatalities for American kestrel and golden eagle were not as great at Buena Vista turbines as they were at Diablo Winds turbines (ICF International 2013). It should be noted that the studies estimating fatality rates for repowered turbines summarized above were conducted at current-generation turbines ranging from 660 kW (Diablo Winds) to 1 MW (Buena Vista). Newer turbines used for future repowering would further increase the size and rated capacity of turbines. The recent repowering project at Vasco Winds used 2.3-MW turbines, and other projects may use up to 3-MW turbines. Some evidence exists that these larger turbines would continue to reduce fatality rates per MW for bird species currently killed at the APWRA (Smallwood 2010). However, there remains a possibility that larger turbines may affect bird species left unaffected by older (i.e., smaller) turbines. Fatality rates in the APWRA are highly variable and potentially imprecise (ICF International 2013; Smallwood 2010), making careful project-level evaluation and siting of repowered turbines important. Although the evidence points to potential beneficial effects to avian species from repowering (when compared to the existing baseline impacts), there would still be impacts on common, special-status, and focal avian species considered important for management by Alameda County. Thus, although the impacts could be substantially reduced for some species based on the conclusions from some studies, there may be unintended or unanticipated impacts on other species. On this basis, impacts on avian species from the Initial and Full Repower, when taken into context with past, present, and reasonably foreseeable future projects, are considered significant and unavoidable cumulative impacts.

Cultural Resources

The geographic scope of potential cumulative effects with respect to cultural resources is usually limited to areas within the physical footprint of a proposed project. With the implementation of the mitigation measures described in Section 3.5, *Cultural Resources*, the Initial and Full Repower phases could have a less-than-significant impact on historic resources, archaeological resources, and human remains.

Simultaneous construction of multiple repowering projects in the project area and other development and infrastructure projects in the vicinity of the project area could potentially result in significant impacts on historic resources, archaeological resources, and human remains, should they be present within the project area or the vicinity of the project area. However, compliance with CEQA, including identified mitigation measures, and with the County's historic preservation ordinance, would result in a less-than-significant impact on cultural resources and avoidance of adverse cumulative effects.

Geology, Soils, and Paleontological Resources

Construction in a seismically active region puts people and structures at risk from a range of earthquake-related effects, such as surface fault rupture, strong ground shaking, and landsliding. However, as discussed in Section 3.6, *Geology, Soils, and Paleontological Resources*, various mechanisms are in place to reduce seismic-related risk, including project-specific geotechnical investigation and seismic design standards promulgated by the county building codes and ordinances, as well as mitigation measures. Proposed Initial and Full Repower activities would not contribute considerably to the existing cumulative impact related to seismic hazards. This impact would be less than significant with mitigation.

If the Initial and Full Repower construction activities were to result in the damage or loss of paleontological resources, the project could result in a cumulatively significant impact. However, implementation of the mitigation measures to protect paleontological resources would reduce this impact. This impact is less than significant with mitigation.

Greenhouse Gases

Greenhouse gas (GHG) emissions are inherently a cumulative concern, in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the State, the region, and the proposed Sand Hill Wind Project's direct and/or indirect generation or offset of GHG emissions. The Initial and Full Repower would be consistent with the Alameda County Climate Action Plan (CAP) and the AB 32 Scoping Plan because it would involve the repowering of wind turbines, a renewable energy source. Because GHG emissions resulting from turbine construction would be temporary, and the project would generate renewable energy, it would not conflict with the State's GHG reduction goals. Therefore, the project-specific incremental impact on GHG emissions would not be cumulatively considerable.

Hazards and Hazardous Materials

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, best management practices (BMPs) would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur. While foreseeable projects have the potential to cause similar impacts, it is assumed these projects would also implement similar BMPs. Therefore, there would not be a cumulative impact.

The project area has a moderate to high risk for wildland fire hazards. As described in Section 3.8, *Hazards and Hazardous Materials*, fire prevention is required as part of the CUPs. The main mechanism utilized for fire prevention is the maintenance of a 30-foot-wide firebreak around buildings and structures, including turbines, riser poles, and substations. Electrical lines require a 20-foot clearance of flammable vegetation which is accomplished by application of herbicide in October or November. Another mechanism for fire prevention on turbines is the provision of a yaw damper or other approved method that prevents the over-twisting of pendant cables.

These measures reduce fire risks associated with decommissioning and removal activities of the Initial and Full Repower. Similar practices can be assumed for foreseeable projects in the area. Consequently, the risk of loss, injury, or death involving wildland fires as a result of Sand Hill Wind Project construction, in concert with other foreseeable projects, would not be cumulatively considerable.

Hydrology and Water Quality

The project area consists largely of cattle-grazed land on which operating wind turbines and ancillary facilities are currently installed. Because all of the APWRA is expected to be repowered or in the process of repowering by 2018, several other projects described above will occur during the Initial Repower. These projects would involve land disturbance and other activities that would have impacts on hydrological and water quality conditions in the project area, which could result in overall cumulatively significant impacts, such as the discharge of sediments and other pollutants into surface water bodies leading to the Delta, such as Patterson Run or Mountain House Creek, or groundwater aquifers within the Tracy Subbasin from excavation work. However, BMPs would be implemented as part of these projects to reduce the potential for the discharge of pollutants into water bodies. The large number of reasonably foreseeable projects might also result in alterations of drainage patterns. However hydrologic and drainage studies would be performed, and these projects would be designed so that the postconstruction volume and rate of drainage flows would be managed so as not to exceed preconstruction flows. While reasonably foreseeable projects have the potential to cause similar impacts as the Sand Hill Wind Project, it is assumed these projects would also implement similar BMPs and measures to reduce impacts. Therefore, there would not be a cumulative impact.

The Full Repower phase would take place after completion of the Initial Repower but before 2017, and, as with the initial development phase, would occur at the same time as several other reasonably foreseeable projects within the APWRA. However, this phase involves 300 turbines instead of 40 and the project area would be larger for the Full Repower phase. Therefore, impacts would be similar, but increased relative to the Initial Repower phase. However, it is assumed these projects would also implement similar BMPs and measures to reduce impacts. Therefore, there would not be a cumulative impact.

Noise

The project and program level noise analyses indicate that there is potential for repowering projects to result in noise that exceeds County Noise Ordinance standards which would result in significant cumulative operational noise impacts. Implementation of a mitigation measure that involves conducting an acoustical study and implementation of measures identified and recommended as part of that study would ensure compliance with County noise standards and would avoid the potential for the Full Repower to contribute to significant cumulative operational noise impacts.

Construction of multiple repowering projects simultaneously in the program area could potentially result in a cumulative construction noise impact at residences near the construction activities. However, the noise impacts on nearby residents would be temporary and localized, and implementation of mitigation measures addressing construction-generated noise would reduce this impact to a less-than-significant level. It is anticipated other projects would also be required to implement similar measures to prevent impacts on residents and in compliance with local noise standards. Therefore, with implementation of mitigation measures, the potential cumulative impact would be less than significant.

Transportation/Traffic

Construction of multiple repowering projects in the project area and other development and infrastructure projects in the vicinity of the project area could potentially result in significant impacts on transportation systems and traffic levels on interstates and local roads. Although the effects of individual projects generally would be short-term and temporary, the effect of overlapping and sequential construction schedules could result in conditions that adversely affect the performance of roads and conflict with congestion management policies and planning. In addition, the presence of large and often slow-moving construction vehicles and the introduction of worker trips for multiple projects could affect local access for motorists, bicyclists, and emergency providers, as well as introduce roadway hazards. Therefore, simultaneous construction activity could result in cumulatively significant effects. Mitigation Measure TRA-1 includes elements in the TCP that would ensure the Applicant work with Alameda County, the California Department of Transportation (Caltrans), and other affected cities or communities to ensure there is adequate coordination and planning related to the cumulative projects to avoid significant adverse effects on transportation system operations, motorists, bicyclists and emergency providers through coordinated implementation of traffic control measures for all projects that affect the same roads and routes as the Initial and Full Repower. Implementation of Mitigation Measure TRA-1 would reduce the level of impact on local county roads, but may not reduce these impacts to a less-than-significant level. It is possible that proposed Sand Hill Wind Project would result in a cumulatively significant contribution to the potential traffic and transportation system effects under the cumulative condition. Therefore, there would be a cumulative impact.

Utilities and Service Systems

Neither the Initial Repower nor the Full Repower scenarios would utilize a significant amount of water resources. Water would be obtained and trucked in from Zone 7 Water Agency. Water necessary for construction would be used for dust control and revegetation activities. These activities would require no more than 2,172,342 gallons of water per month during a 6-month construction period for the Initial Repower. The Full Repower would require no more than 1,448,228 gallons of water per month during a 9-month construction period. Water needed for operations and maintenance, including blade washing, would not be expected to exceed 100,000 gallons over the course of 30 years of operation. No municipal water services would be needed. Wastewater and the majority of solid waste are processed on-site via septic systems or recycled for resale. As a result, the majority of wind turbine projects would not utilize municipal wastewater treatment facilities or affect area landfills. Repowering of the Sand Hill Wind Project in addition to existing wind farms and other cumulative projects would not contribute to a cumulative impact on utilities or service systems.

5.3 Growth-Inducing Impacts

Section 21100(b)(5) of CEQA requires an EIR to discuss how a project, if implemented, may induce growth and the impacts of that induced growth (see also State CEQA Guidelines Section 15126). CEQA requires the EIR to discuss specifically “the ways in which the Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment” (State CEQA Guidelines Section 15126.2[d]). The State CEQA Guidelines do not provide specific criteria for evaluating growth inducement and state that growth in any area is not “necessarily beneficial, detrimental, or of little significance to the environment” (State CEQA

Guidelines Section 15126.2[d]). CEQA does not require separate mitigation for growth inducement as it is assumed that these impacts are already captured in the analysis of environmental impacts (see Chapter 3, *Impact Analysis*). Furthermore, Section 15126.2(d) of the State CEQA Guidelines requires that an EIR “discuss the ways” a project could be growth inducing and to “discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment.”

According to the State CEQA Guidelines, a project would have potential to induce growth if it would result in either of the following.

- Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or general plan land use designation.
- Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

In general, a project could be considered growth-inducing if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way. However, the State CEQA Guidelines do not require a prediction or speculation of where, when, and in what form such growth would occur (State CEQA Guidelines, Section 15145).

5.3.1 Remove Obstacles to Growth or Provide New Access

The Sand Hill Wind Project involves the construction of new wind turbines, the widening of existing private service roads within the project parcels, and new connections to existing electrical infrastructure. No new service roads would be developed to access repower turbine sites, but existing, privately owned roads within the project boundary would need to be widened to accommodate construction activities. These existing roads do not, and would not, extend beyond the project parcels or provide connection points for offsite development. Additionally, during construction, new connections between the existing collection system and the new turbines would be installed. These connections would replace the existing connections between the turbines proposed for decommissioning and the existing power collection system. The power collection system itself would not be altered or expanded. The new connections to the existing infrastructure would be located entirely within the project area and would enable the applicant to transfer power generated by the new, shrouded wind turbines to the regional electrical grid. Therefore, the project would not be expected to indirectly induce population growth through the widening of existing service roads or the connection of new turbines to the existing electrical infrastructure.

5.3.2 Economic, Population, and Housing Growth

Typically, the growth-inducing potential of a project is considered significant if it fosters growth or a concentration of population in a different location or in excess of what is assumed in relevant general plans or land use plans, or projections made by regional planning agencies, such as the Association of Bay Area Governments (ABAG). As discussed in the March 6, 2013 Initial Study (IS), the project does not include the construction or demolition of any housing, and so would not have a direct impact on population or housing growth. Furthermore, the nature of the facilities is such that there would be no direct customers and no incentive for other residences or businesses to locate nearby. Production of electricity from the project facilities is ongoing and would not create additional availability of energy resources beyond those already permitted for the facilities.

Decommissioning and construction activities would result in a short-term increase in construction-related job opportunities in the Alameda County region. However, construction workers can be expected to be drawn from the existing construction employment labor force. The limited, short-term opportunities provided by decommissioning and construction would be unlikely to result in the relocation of construction workers to the project region. Therefore, the employment opportunities provided by construction are not anticipated to induce indirect growth in the region.

5.4 Significant and Unavoidable Impacts

Section 21067 of CEQA and Sections 15126(b) and 15126.2(b) 15126.2 (b) of the State CEQA Guidelines require that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less-than-significant level. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should also be described.

A significant and unavoidable impact is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level. Most of the impacts of the Sand Hill Wind Project would be less than significant or would be mitigated to a less-than-significant level. The impacts below are those that would remain significant and unavoidable after mitigation.

5.4.1 Aesthetics

Initial Repower

Impact AESTH-2: Have a substantial adverse effect on a scenic vista

Impact AESTH-3: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway

Impact AESTH-4: Substantially degrade the existing visual character or quality of the site and its surroundings

Full Repower

Impact AESTH-2[F]: Have a substantial adverse effect on a scenic vista

Impact AESTH-3[F]: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway

Impact AESTH-4[F]: Substantially degrade the existing visual character or quality of the site and its surroundings

5.4.2 Air Quality

Initial Repower

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) due to high levels of NO_x emissions during the construction period

Full Repower

Impact AQ-3[F]: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (significant and unavoidable due to high levels of NOx emissions during the construction period)

5.4.3 Biological Resources**Initial Repower**

Impact BIO-11: Operation of the proposed project could have direct impacts on special-status avian species

Full Repower

Impact BIO-11[F]: Operation of the proposed project could have direct impacts on special-status avian species

5.4.4 Greenhouse Gas Emissions**Initial Repower**

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, due to construction-related vehicle emissions

Full Repower

Impact GHG-1[F]: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, due to construction-related vehicle emissions

5.4.5 Transportation/Traffic**Initial Repower**

Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, due to construction traffic on local routes

Full Repower

Impact TRA-1[F]: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, due to construction traffic on regional route I-580/I-205 in project vicinity and construction traffic on local routes

Impact TRA-2[F]: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways, during construction

Impact TRA-4[F]: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), due to construction-related traffic

Impact TRA-6[F]: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, during construction

5.5 Significant Irreversible Environmental Changes

Section 15126.2 (c) of the State CEQA Guidelines requires that an EIR address any significant irreversible changes that would result from a proposed project, and provides the following direction for the discussion of irreversible changes.

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that current consumption is justified.

The State CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations to specific uses; irreversible changes from environmental actions; and consumption of nonrenewable resources.

5.5.1 Changes in Land Use Which Would Commit Future Generations

The project area is in eastern Alameda County and is currently developed as a wind farm, with coexisting grazing activities. The ECAP designates the entire project area as Large Parcel Agriculture and the land carries a zoning designation of Agriculture. Chapter 17.06.040 of the Alameda County Code of Ordinances indicates that privately owned wind facilities are a conditionally permitted use on non-prime farmland within the Agriculture zoning district. The Sand Hill Wind Project would not commit future generations to, or introduce, changes in land use that would vary from the existing conditions.

5.5.2 Irreversible Changes from Environmental Actions

The Sand Hill Wind Project involves the removal of existing foundations, construction and repowering of an existing wind farm on approximately 1,000 acres in unincorporated eastern Alameda County. The coexisting grazing uses would continue and would not be altered or negatively affected. The Initial and Full Repower are not expected to result in environmental accidents that would cause irreversible damage. Compliance with required plans, such as the Altamont Pass Wind Farms Fire Requirements, would minimize the potential for accidents that could result in environmental damage. No irreversible changes to the project area would occur as a result of the Sand Hill Wind Project.

5.5.3 Consumption of Nonrenewable Resources

Removal of existing foundations, construction, and project operation and maintenance activities would require the consumption of nonrenewable resources, such as fuel for construction vehicles and equipment. However, such use would primarily be limited to the short-term decommissioning and construction period, with some continuing use of fuel for O&M activities. However, as the site is already in use as a wind farm and subject to O&M activities, the continuing O&M of the project facilities would not increase the rate of use of nonrenewable resources relative to existing conditions. The temporary, construction-related increase would not result in significant use of nonrenewable resources and would not commit future generations to similar uses. Furthermore, two of the project's objectives are to develop a viable source of clean energy that will help California achieve its Renewables Portfolio Standard (RPS) with a low MW-to-acre disturbance ratio and without the need for large amounts of water, and to offset the need for additional electricity generated from fossil fuels, and thereby assist the state in meeting its air quality goals and reducing GHG emissions.

5.6 References Cited

5.6.1 Printed References

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