

1.1 Purpose of the PEIR

This Program Environmental Impact Report (PEIR) has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) to evaluate the potential impacts of repowering the Alameda County portion of the Altamont Pass Wind Resources Area (APWRA), including two individual wind energy repowering projects: the Golden Hills Wind Energy Facility Repowering Project (Golden Hills Project), and the Patterson Pass Wind Farm Repowering Project (Patterson Pass Project). The PEIR is intended to identify the anticipated environmental impacts of conditional use permits (CUPs) that may be approved by Alameda County (County) for repowering windfarm projects in the Alameda County portion of the APWRA—hereafter referred to as the *program area*—through 2018 and beyond: both those currently proposed—the two individual projects—and those expected to be proposed (collectively, the *program* addressed in this PEIR).

1.1.1 California Environmental Quality Act Requirements

The County has prepared this 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.). As required by CEQA, the PEIR is an informational document to aid in public review and official decision making. The PEIR addresses both the program and the individual projects, disclosing information describing the environmental setting; potential direct, indirect, cumulative, and growth-inducing impacts of the proposed program; mitigation measures that could be implemented to reduce or avoid those impacts; alternatives to the proposed program; and impacts that would remain significant and unavoidable even after mitigation. The County is the CEQA Lead Agency for this program.

1.1.2 Program-Level Analysis and Tiering

The State CEQA Guidelines encourage agencies to use a PEIR in circumstances that involve a series of related projects. A PEIR provides a framework for conducting future environmental analyses for the individual projects, a process known as *tiering*. In this case, environmental analyses of individual repowering projects would be tiered off this PEIR. The concept of tiering is described in State CEQA Guidelines Section 15152.

- a) “Tiering” refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.
- b) Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects... This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review.

This approach reduces repetitive analysis of issues that may be common to multiple projects. In this case, use of a PEIR allows the County to characterize the proposed program as the “project” being analyzed and approved and to consider broad policy alternatives and program-wide mitigation measures early in the planning effort for the program.

This is a program- and project-level EIR analyzing a series of actions that are related geographically and that are likely to have similar environmental effects that can be mitigated in similar ways (see CEQA Guidelines section 15168(a)). The program-level analysis addresses the environmental impacts of anticipated requests to repower existing wind energy projects in the APWRA. The project-level analyses apply to two repowering projects for which the County has already received applications.

This PEIR is the first tier of environmental documentation. It would be augmented by second-tier environmental documents as appropriate when additional details for the specific repowering projects are developed. These project-level environmental documents would incorporate by reference appropriate information from this PEIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. These environmental documents would focus solely on site-specific issues that have not been considered in this PEIR. If activities were later found to have effects that were not examined in this PEIR, additional CEQA review would be required. If the County finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review.

This PEIR is designed to reflect the distinction between program-level and project-level analyses. The individual projects are described in Chapter 2, *Program Description*.

1.1.3 Scope of this PEIR

The focus of this PEIR is to evaluate the environmental consequences of the program described above. The PEIR evaluates the following environmental topics in depth.

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, Mineral Resources, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation

- Transportation and Traffic
- Utilities

1.2 Program Overview

1.2.1 General Physical Setting

The APWRA is an approximately 50,000-acre area that extends across the northeastern hills of Alameda County and a smaller portion of Contra Costa County to the north (Figure 1-1). The region is generally characterized by rolling foothills of annual grassland used as grazing land. The program area (Figure 1-2) is mostly treeless and undeveloped with relatively steep terrain in the west and gently rolling hills in the east toward the floor of the Central Valley and San Joaquin County. Major features of the area include the wind turbines, ancillary facilities, an extensive grid of high-voltage power transmission lines, substations, microwave towers, a landfill site, Interstate (I-) 580, railroad lines, ranch houses, and clusters of rural residential homes on Dyer and Midway Roads.

1.2.2 The Altamont Pass Wind Resource Area

The APWRA sustains a strong and predictable wind resource due mainly to the funneling of cool marine winds from the Pacific Ocean east through the pass to replace the rising hot summer air of the Central Valley. As a result, the area is ideal for generating electrical power from wind. The environmental benefits of wind energy production are primarily that the manner of energy production does not result in the emission of any pollutants into the air or water, and although production varies from day to day and season to season, it uses a renewable resource that is almost constant and undiminished. More recently, due to recognition of the effects of conventional energy production (from fossil fuels) on global climate change, the harnessing of wind for energy production has become increasingly important. The APWRA, its wind resource characteristics, and the locations of existing turbines are shown in Figure 1-3.

The Altamont Pass was identified as a wind resource area by the California Energy Commission (CEC) in 1980. The CEC established the APWRA in response to the passage of the Public Utilities Regulatory Policies Act of 1978. This legislation was specifically intended to accomplish the goals listed below (Alameda County 1998).

- Reduce U.S. dependence on foreign fuel.
- Ensure energy security through fuel diversity.
- Support new, clean, renewable sources of power generation.
- Support electric generation by non-utility entities.

The 1978 Public Utilities Regulatory Policies Act created a market for wind power and other renewable energy sectors by obligating public utilities to purchase electric power from independent producers so that public utilities could avoid costs associated with power generation. In addition, the simultaneous availability of federal and state tax credits provided economic incentives for the development of wind power generation facilities (Alameda County 1998). In response, wind companies researched local wind patterns and wind turbine design, negotiated with land owners

and local governments for land easements and permits, and constructed, operated, and maintained wind farms in the APWRA to supply power to regional utility providers.

1.2.3 Land Use Regulations

Most of the program area is designated as Large Parcel Agriculture (LPA) under the County's *East County Area Plan* (ECAP), adopted in 1994 and amended in 2000 by the voter initiative Measure D. The ECAP established minimum parcel sizes (100 acres) and maximum building intensity (floor area ratio [FAR]) for specific areas of the east county. Subject to the provisions, policies, and programs of the ECAP, the LPA designation permits one single-family residence per parcel, agricultural uses; agricultural processing facilities; public and quasi-public uses; quarries; landfills and related facilities; and "windfarms and related facilities, utility corridors and similar uses compatible with agriculture." A short section of the ECAP also established policies recognizing the importance of wind power as a clean, renewable source of energy, enabling continued operation, redevelopment, and expansion of windfarm facilities within environmental constraints (Alameda County 2000). (*Note: Measure D did not alter any policies regarding windfarms*).

The Alameda County Zoning Ordinance (Title 17 of the County's General Ordinance Code) designates the program area as "A" (Agriculture), which allows "privately owned wind-electric generators" (i.e., wind farms) as a conditional use. Permitted uses in the A district include single-family residences, general agriculture, grazing, riding or hiking trails and, with a conditional use permit, outdoor recreation facilities, transmission facilities, solid waste landfills, and windfarms (Alameda County 2000). Accordingly, windfarm operators must seek a conditional use permit (CUP) from the County prior to constructing and/or operating wind turbine generators.

1.2.4 Conditional Use Permits

History through 2000

The County approved 54 CUPs between 1981 and 1993 for privately owned windfarms in the APWRA. By the mid-1990s the APWRA was the largest windfarm region in the world, with more than 7,200 operating turbines. Many of the windfarms overlapped, with separate permits issued to different operating companies on individual parcels. Various turbine designs by different manufacturers were used, with maximum production capacity of most individual turbines ranging from 40 to 150 kilowatts (kW). A small proportion of turbines were built with capacities of up to 400 kW. Moreover, several turbines have changed hands; projects have been purchased by other operators; and a number of turbines have been removed at the direction of the Scientific Review Committee (SRC) because they were identified as high-risk turbines. A list of current CUPs and their associated projects, operators, owners, and parcel numbers is provided in Appendix A.

In the mid-1980s it became evident that birds were colliding with wind turbine blades, and that many of the birds killed were protected raptor species, including golden eagle, red-tailed hawk, burrowing owl, and American kestrel. Many studies investigated the causal relationship between turbine facilities and avian mortality, and several recommendations emerged for siting future turbines, managing existing facilities, and removing individual turbines that, because of certain siting and physical characteristics, resulted in higher rates of avian mortality than predicted. In 1998, Alameda and Contra Costa Counties approved a repowering program that established protocols for replacing many older, smaller turbines with fewer larger, more productive turbines.

The program was intended to both maintain energy production and reduce avian mortality through a combination of siting guidelines and reductions in rotor-swept area.

A comprehensive PEIR (combined with some project-specific components, as in the present case, and hereinafter referred to as the 1998 Repowering PEIR) was prepared in 1998 by Alameda and Contra Costa Counties for a repowering program that was applicable only to the windfarm sites that were then in operation—most but not all of the APWRA. Based on the operational capacity of the APWRA windfarms as of 1998 to produce up to 583.3 megawatts (MW), the repowering program established that capacity level as an interim cap or limit on additional development of production capacity in the entire APWRA. In Alameda County the 1998 production capacity and repowering program ceiling was set at 416.4 MW. The repowering program generally stated that no additional production capacity would be permitted until monitoring indicated that avian mortality and other environmental impacts of such increases could be effectively mitigated or avoided. To simplify analysis and discussion, the program generation capacity is referred to in this EIR as 417 MW.

The other main component of the 1998 Repowering PEIR and repowering program was a Biological Resources Management Plan (BRMP) with three main types of guidelines, including avian impact avoidance through design, siting, and operations, and management of special-status species with additional special measures. However, for a variety of reasons, including federal tax policies, energy prices, and legal actions by environmental advocacy groups, only one repowering project was completed in the Alameda County portion of the APWRA (the 36 MW Diablo Winds project, initiated in 2003 and operated by Altamont Power for NextEra Energy, LLC [NextEra]).

History since 2001

Beginning in 2001, as the CUPs issued in the 1980s and 1990s began to expire, the windfarm companies submitted applications to renew the CUPs for continued operations of existing facilities. In November 2003, the East County Board of Zoning Adjustments (EBZA) approved 14 separate CUPs, with conditions, for the continued maintenance and operation of wind turbines in the program area, with no specified termination date. The following January (2004), EBZA approved another set of 15 CUPs; these had a 20-year term. These CUPs were issued to four operators: SeaWest Power Resources LLC (also referred to as AES Wind Generation Co.), Windworks (also operating as Altamont Power Company and its affiliate Altamont Winds Inc. [AWI]), Altamont Infrastructure Company, and enXco, Inc. (enXco, now EDF Renewable Energy [EDF RE]). EBZA determined on both occasions that its decision to issue the CUPs was categorically exempt from CEQA (as *existing facilities* under Section 15301 of the State CEQA Guidelines) on the basis that there would be negligible or no expansion of the existing facilities. The Center for Biological Diversity (CBD), Californians for Renewable Energy (CARE), and Golden Gate Audubon Society appealed these approvals to the County Board of Supervisors (BOS), primarily on the grounds that the categorical exemption from CEQA was in error, and that special circumstances warranted a requirement for environmental analysis under CEQA.

On September 22, 2005, the BOS partly upheld EBZA's decision to grant the CUPs and partly granted the appeal with final County approval of the CUPs, with the inclusion of several conditions of approval advocated by CBD, CARE, and Golden Gate Audubon Society. The County made the following key findings related to repowering turbines and imposed the conditions listed below to address impacts associated with avian mortality in the program area.

1. An environmental impact report (EIR) was required to be prepared to evaluate both existing windfarm operations and a repowering program, to be initiated progressively over the life of the CUPs.
2. The CUPs would expire in 13 years (2018).
3. An APWRA Scientific Review Committee was required to be formed.
4. An Avian Wildlife Protection Program & Schedule (Exhibit G of the 2005 CUP) was established with requirements for seasonal shutdown and removal of high risk turbines, and a schedule to remove turbines for repowering in increments of 10% by September 2009, 35% by 2013, 85% by 2015, and 100% by the end of the CUP term in 2018.
5. Reviews of progress to affirm the findings of the CUPs (e.g., required by the public need, no adverse effects on the health or safety of persons residing or working in the vicinity, etc.) were required in Years 3, 6, and 8.

More specifically, the CUPs required that:

...the Permittee(s), in cooperation with the County, will sponsor the preparation of an Environmental Impact Report (EIR) for the purpose of evaluating the environmental impacts of the repowering program and the continued operation of existing turbine facilities (and progressive removal under the repowering program). Using state-of-the-art scientific investigations, reports prepared by the County consultant, and data from all other sources, the EIR will assess the environmental impacts of the repowering program (including both specific proposals and the overall repowering program set forth herein), the continued operation of existing turbine facilities, and the effectiveness of the various strategies to reduce and minimize avian mortality and other adverse impacts on wildlife (such as new wind turbine technology, site-specific measures, grazing management, etc.). The EIR will seek to verify and validate current assumptions regarding the benefit of repowering as a means of substantially and significantly reducing the amount of avian injury and mortality resulting from most existing types of turbines, and identify appropriate means of ensuring that repowered turbines have the lowest possible rate of avian mortality. The EIR shall also study siting in the Altamont as a whole, and may also address how to provide incentives for an increased rate of repowering, including expanding areas where wind power facilities may be permitted.

This PEIR is intended to comply with the above requirements of the 2005 CUPs.

Following the 2005 CUP approvals, CARE, Golden Gate Audubon Society, Ohlone Audubon Society, Mount Diablo Audubon Society, Santa Clara Valley Audubon Society, and Marin Audubon Society (collectively Audubon) petitioned the County Superior Court for a writ of mandate to set aside the County's issuance of the CUPs on various grounds, including the contention that the action violated the County's general plan and CEQA. This dispute is referred to as the *CEQA Litigation*.

After extensive negotiations, a framework for settling the CEQA Litigation was agreed to in November 2006. The outcome was the 2007 Settlement Agreement among Audubon; CARE; three wind power companies (AES Wind Generation, enXco, and NextEra); and the County (collectively, the *Settling Parties*). Altamont Winds Inc. (AWI) elected not to be a party to the agreement. On January 11, 2007, the County modified the CUPs of the Settling Party Wind Companies in keeping with the terms of the 2007 Settlement Agreement. In particular, the 2005 CUPs' Exhibit G *Avian Wildlife Protection Program & Schedule* was amended to include Exhibit G-1 for the Settling Party Wind Companies and Exhibit G-2 for the non-settling wind energy company, AWI.

The primary results of the 2007 Settlement Agreement for the Settling Parties included changes to Exhibit G, elimination of progress reviews in Years 3 and 6, and acceleration of habitat conservation

strategies or components. Specifically, the 2007 Settlement Agreement had seven major provisions, summarized below.

1. Wind companies will reduce avian raptor mortality by 50% by November 2009. This condition is applicable to four raptor species: golden eagle, burrowing owl, American kestrel, and red-tailed hawk.
2. If the desired reduction is not achieved, an adaptive management program will be instituted and Alameda County will act on any needed permit modifications, provided the measures are consistent with the objectives of the Settlement Agreement.
3. Targeted higher risk turbines will be removed or relocated within 30 days of the Settlement Agreement.
4. Additional targeted turbines will be removed or relocated by October 31, 2008.
5. Seasonal shutdowns will be modified in the 2007–2008 season for data consistency.
6. Companies may paint blades of up to 450 turbines as an experiment to reduce avian mortality.
7. Parties will develop an NCCP applicable to activities of turbine owners and operators only.

Specific requirements attached to AWI as the only non-settling party. Key requirements from Exhibit G-2 of the 2005 CUPs that are not currently outdated require the following actions related to seasonal shutdown and eventual permanent decommissioning of non-repowered turbines.

- Between October 2010 and September 2018, from November 1 of each year to the following February 15, AWI will cease operations of its existing (non-repowered) turbines.
- By September 30, 2009, AWI will have ceased operation and permanently removed 10% of its individually owned existing turbines in preparation for installation of repowered turbines.
- By September 30, 2013, AWI will have ceased operation and permanently removed an additional 25% (a total of 60% of all turbines covered by the 2005 CUPs are required to be removed) of its individually owned existing turbines.
- By September 30, 2015, AWI will have ceased operation and permanently removed an additional 50% of its then-existing individually owned turbines (a total of 92.7% of all turbines covered by the 2005 CUPs are required to be removed).
- By September 30, 2018, AWI will have ceased operation and permanently removed the remainder of its turbines such that 100% of AWI's turbines covered by the 2005 CUPs are permanently removed.

In 2007, preparation of an NCCP/HCP was initiated. In addition to the Settling Party Wind Companies, AWI and its affiliate WindWorks Inc. joined the NCCP/HCP process. AWI was subject to a 3-year review, which began in 2008, but which was suspended or held in abeyance due to AWI's tentative agreement at that time to participate in the NCCP/HCP process and other actions that would have put AWI on an equal footing with the Settling Party Wind Companies (a 3-year review requirement under the original Exhibit G had been eliminated for Settling Party Wind Companies under Exhibit G-1). Although the NCCP/HCP process was also suspended subsequently by 2011 for reasons outside the wind companies' or County's control, an 8-year review also required by the 2005 CUPs of AWI's compliance with the permit conditions, including Exhibit G-1, was completed in 2013, together with approval of a request by AWI to modify the conditions of approval to allow

continued operation of most of its turbines through 2015 only, instead of their progressive removal between 2013 and 2018.

The goal of the NCCP/HCP process was to facilitate repowering by addressing needs for environmental compliance while adhering to the requirements of the 2007 Settlement Agreement. However, the APWRA NCCP/HCP faced three primary and interrelated challenges.

- Delays and uncertain participation by the U.S. Fish and Wildlife Service (USFWS) due to reduced staffing at that agency.
- Regulatory challenges of the Bald and Golden Eagle Protection Act (BGEPA)
- A desire of two of the wind companies to repower a large portion of program area before the APWRA NCCP/HCP could be completed.

In light of these challenges, the County determined that the best approach to meet the objectives of the 2005 CUPs and the 2007 Settlement Agreement was a PEIR as the primary CEQA document, together with a program-level Avian Protection Plan (APP) to be developed as a mitigation measure and standard condition of approval. The program-level APP was intended to provide a framework for operation of turbines that will be incorporated into project-specific APPs developed by each project applicant prior to commencing repowering construction. Because no mechanism to implement the APP was developed, the provisions of the program-level APP were incorporated into the program-level mitigation measures presented in Section 3.4, *Biological Resources*, of this PEIR. In addition, the County decided to analyze in this PEIR those individual projects for which applications containing sufficient detail to support CEQA analysis had been submitted to enable the County to issue new CUPs. These applications were submitted by Golden Hills Wind, LLC (Golden Hills) for its Golden Hills Wind Energy Facility Repowering Project Phase I (Golden Hills Project and EDF RE for its Patterson Pass Wind Farm Repowering Project (Patterson Pass Project).

It is anticipated that new CUPs issued by the County will incorporate the mitigation measures in this PEIR as conditions of approval. Although CUPs issued in the past were linked to a mixture of individual property owners and windfarm operating companies, the current expectation is for a relatively limited number of separate use permits linked only to the individual operating companies and applicable to multiple properties and parcels.

1.2.5 Program Components

In compliance with the directive provided in the 2005 CUPs (excerpted above) and the 2007 Settlement Agreement, the program as defined in this PEIR has three separate but related components.

- The “continued operation of existing turbine facilities (and progressive removal under the repowering program).” As described in the 2007 Settlement Agreement and as permitted under the 2005 CUPs (described in Section 2.4).
- The anticipated approval of new CUPs to allow repowering of wind turbines in the Alameda County portion of the APWRA (described in Section 2.5).
- Two specific repowering proposals: the Golden Hills Wind Energy Facility Repowering Project (Golden Hills) and the Patterson Pass Project (EDF) (described in Section 2.6).

The primary purpose of the proposed program is to facilitate wind energy production through repowering and to avoid and minimize impacts on wildlife caused by repowered wind turbine

construction, operation, and maintenance in the program area. First- and second-generation windfarms will continue to be operated under the 2005 CUPs (described below) until such time as each windfarm is fully decommissioned or repowered. Repowered wind farms would be constructed and operated under a new CUP that will be based in part on the findings of this PEIR. Chapter 2, *Program Description*, provides a more detailed description of these components. To facilitate a robust analysis, two alternatives have been identified for the program. Alternative 1 would entail a maximum generation capacity of 417 MW; Alternative 2 would increase that maximum to 450 MW.

As noted above, two individual wind projects—for which adequate information to support a project-level analysis is available—are considered in this PEIR. These projects are described in detail in Chapter 2. Moreover, the analyses presented in Chapter 3, *Impact Analysis*, distinguishes between program-level and project level impacts.

A third individual project—the Sand Hills Wind Project—is currently undergoing separate CEQA review. This is a pilot project utilizing an experimental technology—shrouded turbines, described in greater detail in Chapter 2, *Program Description*—and as such is not evaluated in this PEIR. If the new technology proves successful in reducing avian mortality, the intention is to complete the Sand Hill repowering project using shrouded turbines. If results do not support continued use of this technology, conventional turbines would instead be installed to repower the existing project, in which case the analysis in this PEIR would cover the remainder of the Sand Hills project at a program level; however, additional project-level analysis would be required.

1.2.6 Anticipated Environmental Benefits

The program is intended to support a variety of goals and objectives, which will in turn support environmental benefits for resident terrestrial and avian species, their habitats, and general ecological values. In addition, improvements in wind turbine technology and project design would result in benefits associated with aesthetics, public safety, and noise. Some of these benefits are discussed below.

Habitat Enhancements

The marked reduction in the number of turbines, coupled with the undergrounding of most of the electrical infrastructure, would result in substantial reductions of ground disturbance, installed facilities, and maintenance activities. These reductions would result in fewer vehicle trips and the associated risks of wildlife collisions; decreased roadway dust generation; smaller risk of spills of fuel, oils, and solvents; and decreased risk of the spread of noxious weeds. The smaller number of turbines widely separated also means that instead of firebreak corridors surrounding long strings of turbines, only the immediate area around each turbine (a 30-foot radius from the turbine foundation) needs to be cleared of vegetation.

Decommissioning of existing facilities would create an opportunity to restore the footprints of roads, foundations, and other removed facilities with native vegetation and other habitat characteristics to support ecological integrity. Such activities, together with the wider distribution of the repowered turbines, would reduce habitat fragmentation.

New roads would be designed with appropriate drainage features (e.g., culverts, bio-retention areas) to improve surface water quality during rainfall events and reduce sediment loading associated with stormwater runoff that would otherwise have an adverse effect on aquatic species.

Finally, as required by the 2007 Settlement Agreement and set forth in mitigation measures developed for this PEIR, project proponents would contribute to the establishment of conservation areas and easements within the program area in which wind turbine development would not occur or outside the program area but in the same eco-region. Such areas would provide enhanced habitat qualities for avian and terrestrial species on a coordinated, landscape-level basis.

Reductions in Avian Mortality

Repowered turbines have been shown to result in substantial reductions in avian mortality for a variety of reasons. Significantly, while the program area under existing conditions supported more than 4,000 turbines, complete repowering would result in fewer than 300. The removal of almost all overhead power and communication lines would lead to fewer avian and bat collisions and electrocutions. Lattice-type wind turbine towers and other tower designs that currently provide hazardous perching and nesting opportunities for avian species would be eliminated.

Multiyear monitoring results suggest that the high level of avian mortality associated with the existing turbines has been reduced since 2005 primarily through the implementation of winter seasonal shutdowns. The new turbines are expected to be operated year-round; however, in light of early evidence from similar new-generation turbine facilities and because of the vastly reduced number of individual turbines needed to yield the same capacity, their slower rotational speeds, and the habitat benefits described above, the year-round operations are expected to have much lower winter-season avian mortality rates than the existing facilities.

Improved Visual Qualities

Repowering would greatly alter the landscape, with major reductions in the number of individual turbines in the area. For example, the Golden Hills Project would reduce turbines removed to new turbines installed by a ratio of nearly 15:1; the reduction for the Patterson Pass project would be at least 28:1. The wider distribution of the fewer and more uniform modern turbines would detract less from the natural landscape and allow for more prominent views of the rolling, grassy terrain that characterizes the program area.

Public Safety Improvements

Repowering would result in public safety benefits for several reasons: reductions in fire hazard, the underground placement of electrical lines, improved turbine technology that reduces the risk of blade throw, and the very substantial reduction in the number of individual turbines.

Section 3.8 of the PEIR provides a discussion of fire risks, and indicates that the most common causes of wildland fire at windfarms are hardware and/or conductor failures of power collection lines, dropping of collection lines, turbine malfunction or mechanical failure, and avian electrocution incidents. Because of their age, design, and large number, the existing turbines present a greater risk of fire ignition than do the proposed new turbines. Repowering, by reducing the number of turbines and undergrounding the electrical collection system, would therefore reduce the likelihood of fire ignition associated with hardware failure, electrical line failure, and avian electrocutions.

Installation of new turbines would also greatly reduce the potential and probability of blade throw or failure associated with existing wind turbines. Most fourth-generation turbines, such as those proposed for the program, are equipped with newer safety and engineering features to reduce the risk of blade failure and are designed for safe operation under normal conditions. The rotors of

these turbines are provided with blade pitch controls that regulate the angle of the rotor blade into the wind, as well as redundant brake mechanisms that can control speed and shutdown or slowdown in response to excessive wind speed. The greatly reduced number of individual wind turbines would also reduce the probability of blade throw, which in any case is far lower for new-generation than for old-generation turbines.

Reduced Noise

As discussed in Section 3.11 of the PEIR, the fourth-generation turbines are typically *upwind* turbines, meaning each turbine faces into the wind, so the wind encounters the rotor blades before the tower and nacelle, making for quieter operations than downwind turbines. Additionally, the modern turbines have relatively low rotational speeds and pitch control on the rotors, both of which reduce sound levels compared to the sound produced by first- and second-generation turbines.

1.2.7 Use and Limitations

The program is the anticipated approval by the County of new CUPs for repowering wind projects over time in the APWRA. EBZA is responsible for reviewing and acting on the permit proposals. EBZA will adopt the necessary finding and may approve, conditionally approve, or deny each project based on the analysis in this PEIR or, if necessary, a project-level analysis. If approved, permits would include standard conditions consistent with mitigation measures contained in this PEIR or comparable measures developed in the project-specific environmental documents.

Under the program as proposed, the installed capacity of the program area would not increase above the level defined by the 1998 Repowering PEIR—416.4 MW in the Alameda County portion of the APWRA. As indicated in Section 1.2.4, the 1998 repowering program intended the capacity limit as an interim measure pending research and monitoring until it was firmly determined that the program was effective at reducing avian mortality, a process that was expected to take several years. At the time the 2005 CUPs were approved, the installed capacity of the program area was slightly less than 370 MW; as of October 2011, the capacity was 322 MW, primarily due to phased reductions in capacity required by the CUPs and removal of turbines specifically identified as presenting evident or potential hazards to avian species. The numeric ratio of new turbines to existing turbines would vary depending on the installed capacity of the turbines being removed, the installed capacity of the new turbines, and the capacity limit of each individual project. However, it is presumed that far fewer turbines would be installed than are being removed.

Each wind energy company that currently holds a CUP is expected to initiate a repowering project before the CUPs expire in 2018. Because existing wind companies hold leases and use permits to operate the existing assets, any new company must acquire existing assets (i.e., existing first- and second-generation turbines) that would subsequently be decommissioned prior to installing current-generation turbines. Any project whose impacts are not adequately evaluated in this PEIR would have to undergo additional, project-level environmental analysis; however, such analysis may be able to tier from this PEIR. Once the existing first- and second-generation turbines in the program area have been replaced with new turbines, no new permits will be granted until the program has been reevaluated. The actual number of turbines that may be installed will depend on future specific repowering proposals.

The Final PEIR allows the public and the lead agency to review revisions to the Draft PEIR, comments, responses to comments, and other components of the PEIR before approval of the

proposed project. This Final PEIR is intended to inform the County of the proposed program and projects' potential to result in significant effects on the environment and of means of reducing those impacts, when feasible.

After completing the Final PEIR and before approving the proposed program and projects, the County must make the following three certifications (State CEQA Guidelines Section 15090).

- The Final PEIR has been completed in compliance with CEQA.
- The Final PEIR was presented to county officials and they have reviewed and considered the information in the Final PEIR before approving the proposed project.
- The Final PEIR reflects the County's independent judgment and analysis.

In addition, if a Final EIR that has been certified for a project identifies one or more significant environmental impacts, the County must adopt findings of fact (State CEQA Guidelines Section 15091[a]). For each significant impact, the County must make one or more of the following findings.

- Changes or alterations have been required in or incorporated into the proposed project that avoid or substantially lessen the significant environmental impacts as identified in the EIR.
- Such changes or alterations are within the responsibility and jurisdiction of another public agency, not the agency making the finding. Such changes have been adopted by another agency or can and should be adopted by another agency.
- Specific economic, legal, social, technological, or other considerations—including provision of employment opportunities for highly trained workers—make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Each finding must be accompanied by a brief explanation of the rationale for the finding. In addition, the County must adopt a program for reporting or monitoring the changes that it has either required in the proposed project or made a condition of approval to avoid or substantially lessen impacts (State CEQA Guidelines Section 15091[d]). The mitigation measures themselves must be fully enforceable through permit conditions, agreements, or other measures. This program is referred to as the mitigation monitoring and reporting program (MMRP).

Whenever a lead agency such as the County approves a project that would result in significant and unavoidable impacts that are disclosed in the EIR, the agency must state in writing its reasons for supporting the approved action (State CEQA Guidelines Section 15093[b]). This *statement of overriding considerations* will be supported by substantial information in the record, including the Final PEIR. Because the proposed project would result in significant and unavoidable impacts, the County must adopt a statement of overriding considerations if it approves the proposed project. The statement of overriding considerations is not a substitute for the findings of fact described above.

The recommended certifications, draft findings of fact, and a draft statement of overriding considerations will be included in a separate findings document. The Final PEIR, findings of fact, and statement of overriding considerations will be used by the County to help inform its deliberations on the proposed project.

1.3 Public Participation

The County has provided, and will provide, opportunities for the public to participate in the environmental review processes. These opportunities are summarized below.

1.3.1 Scoping

The County distributed a Notice of Preparation (NOP) of a draft EIR for the proposed program August 24, 2010. The NOP was distributed for a 30-day comment period that ended October 8, 2010. Comments on the NOP were considered in the preparation of the EIR. Appendix B contains the NOP and written comments received on the NOP.

The County held a public scoping meeting to introduce the program to interested members of the public and to solicit public input. The public meeting was held on September 2, 2010. Public comments at this meeting were recorded for consideration during the planning and environmental review process.

Key issues of public concern that were raised during the scoping process are listed below.

- The location of repowered turbines.
- The required setback for turbines from residential properties.
- Noise generation from turbines and potential effects on nearby residents.
- Impacts on local and migratory birds.

1.3.2 Draft PEIR Public Review

Public participation is an important component of the environmental review process. CEQA does not require formal hearings at any stage of the environmental review process (State CEQA Guidelines Section 15202[a]). However, CEQA encourages “wide public involvement, formal and informal...in order to receive and evaluate public reactions to environmental issues” (State CEQA Guidelines Section 15201). The County distributed an NOP for the PEIR on August 24, 2010, to identify issues of concern regarding the project and to incorporate comments into the analysis for the PEIR. Comments on the NOP were considered in the preparation of the PEIR.

CEQA requires the lead agency (the County) to prepare an EIR that reflects the independent judgment of the agency regarding the impacts of the project, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a draft EIR include sharing expertise, disclosing agency analyses, checking accuracy, detecting omissions, discovering public concerns, and soliciting counterproposals.

Reviewers of a draft EIR should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects.

The Draft PEIR was released for a 45-day public review period from June 6, 2014, to 5 p.m. July 21, 2104, and circulated to state agencies for review through the State Clearinghouse of the Governor's Office of Planning and Research. Comments on the Draft PEIR were due to the County no later than 5 p.m. on July 21, 2014, and could be forwarded by any of the following methods.

Mail: Sandra Rivera
Assistant Planning Director
224 W. Winton, Room 111
Hayward, CA 94544

Email: Sandra.Rivera@acgov.org

Fax: 510-785-8793

A public meeting was held at 1:30 p.m. on June 26, 2014, in the City of Pleasanton Council Chambers, at a meeting of the East County Board of Zoning Adjustments, 200 Old Bernal Avenue, Pleasanton. Comments on the Draft PEIR were received during the regularly scheduled meeting.

1.4 Lead and Responsible Agencies and Permit Approvals

This PEIR may be used by several responsible or trustee agencies that also have review authority over the proposed plan. As stated in State CEQA Guidelines Section 15231:

A final EIR prepared by a lead agency or a negative declaration adopted by a lead agency shall be conclusively presumed to comply with CEQA for purposes of use by responsible agencies which were consulted pursuant to Sections 15072 or 15082 unless one of the following conditions occurs:

- (a) The EIR or Negative Declaration is finally adjudged in a legal proceeding not to comply with the requirements of CEQA, or
- (b) A subsequent EIR is made necessary by Section 15162 of these Guidelines.

The various local, state, and federal agencies that may use the EIR are identified below.

Key project approvals are required before repowering construction may begin. These approvals include, but may not be limited to, the certification of the Final PEIR (and any tiered EIR that may be required if complete project-level analysis is not achieved by the Final PEIR), approval of a new CUP for each individual repowering project, and issuance of a grading permit and an encroachment permit for each individual repowering project. Implementation of the program and specific projects may require other discretionary actions and approvals from the following agencies.

- Alameda County
- Alameda County Public Works Agency
- San Francisco Bay Regional Water Quality Control Board
- Central Valley Regional Water Quality Control Board
- California Public Utilities Commission
- California Department of Transportation
- California Department of Fish and Wildlife

- U.S. Army Corps of Engineers
- Federal Aviation Administration
- U.S. Fish and Wildlife Service

As Lead Agency under CEQA, the County provided each public agency that commented on the Draft PEIR with a copy of its responses to comments at least 10 days before certifying the Final PEIR.

1.5 Organization of the Document

This PEIR and supporting information are presented in the chapters and appendices listed below. An electronic copy of the Draft PEIR showing revisions is provided on CD.

Chapter 1, *Introduction*, provides an introduction and overview describing the focus of the PEIR and the environmental review process.

Chapter 2, *Program Description*, describes the program and the two individual projects analyzed at the project-specific level, providing details on location, objectives, and required approvals.

Chapter 3, *Impact Analysis*, describes the environmental setting and provides analysis of the environmental impacts of the program and projects, identifying mitigation measures for any significant impacts.

Chapter 4, *Other CEQA Considerations*, provides a discussion of significant and unavoidable impacts, significant irreversible environmental effects, growth-inducing impacts, and cumulative impacts.

Chapter 5, *Alternatives*, provides an evaluation of the five program alternatives.

Chapter 6, *Preparers*, identifies the individuals involved in the preparation of this document.

Appendix A, *Existing Wind Projects in the APWRA*, identifies the individual CUPs of existing wind projects and provides characteristics of existing facilities in the program area.

Appendix B, *NOP and Scoping Materials*, provides the Notice of Preparation and scoping comments that were received in response to the NOP.

Appendix C, *Biological Resources Supporting Information*, provides EDF RE's biological survey report, presents mitigation ratios as set forth in the East Alameda County Conservation Strategy, depicts the mitigation locations identified in the strategy, and provides a sample Resource Equivalency Analysis (REA) for determining appropriate levels of compensatory mitigation for turbine-related impacts on raptors, including golden eagles.

Appendix D, *Noise Data*, provides the assumptions on which the noise analysis is based.

Appendix E, *Comments on the Draft Environmental Impact Report and Responses to Comments*, provides reproductions of annotated comment letters, responses to those comments, and text revisions where such revisions were made in response to comments.

Appendix F, *Historical Documents*, contains the Draft Avian Protection Plan, the 2007 Settlement Agreement, the 2010 Settlement Agreement, and the Scientific Review Committee's Turbine Siting Guidelines.

Appendix G, *Shadow Flicker Analysis*, is the report of the shadow flicker analysis conducted for the Golden Hills Project.

1.6 References Cited

Alameda County. 1998. *Draft Environmental Impact Report—Repowering a Portion of the Altamont Pass Wind Resource Area*. August. State Clearinghouse #98022024. Hayward, CA: Alameda County Community Development Agency.

———. 2000. *East County Area Plan*. Adopted May 1994. Modified by passage of Measure D, effective December 22, 2000. Oakland, CA.