



**ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT**

STAFF REPORT

**TO: EAST COUNTY BOARD OF ZONING ADJUSTMENTS
HEARING DATE: MARCH 27, 2014**

GENERAL INFORMATION

APPLICATION: Sand Hill Wind Project, Conditional Use Permit, PLN2013-00013
(Initial Repower only)

APPLICANT: Sand Hill Wind, LLC, a direct, wholly-owned subsidiary of New Dimension Energy Company, LLC (NDEC), which is a subsidiary of Ogin, Inc. (formerly FloDesign Wind Turbine Corp.).

PROPOSAL: To repower existing wind farm facilities with 40 shrouded wind turbines.

ADDRESS, LOCATION, ASSESSOR'S PARCEL NOS. AND SIZE OF PARCEL: 14740 Altamont Pass Road (off-site operations and maintenance facility and offices only), and various other addresses for specific gates. Seven parcels will be used for the 40 turbines, including a west area – (APNs 99B-7750-6-0, 99B-6325-1-3 and 99B-7375-1-7); a northeast area (APNs 99B-7500-3-1 and 99B-7600-1-1); and a southeast area (APNs 99B-7875-1-2 and 99B-7875-1-3).

ZONING: A & A-B-E (Agriculture, 160-acre minimum building site area).

GENERAL PLAN DESIGNATION: LPA (Large Parcel Agriculture), *East County Area Plan*, adopted in 1994 and amended in November 2000 and May 2002.

ENVIRONMENTAL REVIEW: The project is subject to the California Environmental Quality Act (CEQA, 1970 as amended) and a Draft Environmental Impact Report (DEIR) has been prepared, which is the subject of this hearing. The DEIR identified significant impacts of the project on aesthetics, air quality, biological resources, cultural resources, geology, soils, paleontological resources, water quality, noise, and traffic. Comments on the DEIR were received for a 45-day period that began November 8, 2013 and ended December 23, 2013. The Final EIR document contains comments and responses to comments that together with the DEIR form the Final EIR, to be certified by the Board of Zoning Adjustments in its consideration of approval of the requested CUP for the Initial Repower.

RECOMMENDATION

The Board should receive a staff presentation, take public comment on the Final Environmental Impact Report and on the proposed Project, review the Mitigation Monitoring and Reporting Program (MMRP), then certify the Final EIR by adoption of a draft Resolution for the purpose of CEQA, and lastly, approve the Project by adoption of the second Resolution and proposed draft conditions.

PERMIT HISTORY

September 5, 2005, Conditional Use Permits C-8023, C-8182, C-8161, C-8201 and C-8203 approved by the Board of Supervisors for continued operation of a combined total of 433 wind turbines by Seawest Power Resources (a subsidiary of the AES Corporation) with conditions, specifically as follows:

C-8023 – 099B-6325-001-04 (Johnston), 30 turbines with a nameplate capacity of 2.4 MW, originally approved on May 12, 1982 as C-4236.

C-8161 – 099B-7750-006-00 (Pombo), 38 turbines with a nameplate capacity of 2.89 MW, originally approved on February 2, 1983 as C-4370.

C-8182 – 099B-6325-001-03 & 099B-7375-001-07 (Ralph), 182 turbines with a nameplate capacity of 8.23 MW, originally approved on May 18, 1983 as C-4425.

C-8203, 099B-7600-001-02 (Arnaudo) & 099B-7500-003-01 (Castello), 131 turbines with a nameplate capacity of 8.52 MW, originally approved on July 13, 1983 as C-4481.

C-8201 – 099B-7875-001-02 & 099B-7875-001-03 (Griffith/Brockman), 52 turbines with a nameplate capacity of 3.38 MW, originally approved on April 18, 1984 as C-4641.

The Seawest assets and permits are now held by Ogin, Inc. (formerly FloDesign Wind Turbine Corp.).

SITE AND CONTEXT DESCRIPTION

The subject CUPs are located in the eastern half of the Altamont Pass Wind Resource Area (APWRA). The APWRA comprises an approximately 50,000-acre area that extends across the northeastern hills of Alameda County and a smaller proportion of Contra Costa County to the north. The region is generally characterized by rolling foothills of annual grassland. The area in which the CUPs are permitted is mostly treeless with relatively steep terrain on the west and gently rolling hills on the east toward the floor of the Central Valley. The underlying landscape generally consists of undeveloped grazing land. Major features of the area include existing wind turbines, ancillary facilities, an extensive grid of high voltage power transmission lines, substations, microwave towers, a landfill site, Interstate 580, railroad track lines, ranch houses, and clusters of rural residential homes on Dyer and Midway Roads.

The Project is proposed on three specific and separate site areas within about three miles of each other, including: four west parcels north of I-580 on both sides of Altamont Pass Road and about a mile west of Grant Line Road (Ralph, Pombo and Johnston properties, the last of which would only be used for the second, Full Repower phase); two northeast parcels east of Mountain House Road about a mile north of I-580 (Arnaudo and Castello properties) and two southeast parcels east of North Midway Road about a mile south of I-580 (Griffith properties). The western parcel is on moderately steeper terrain, whereas the northeast and southeast parcels are on gentler slopes, being closer to the Central Valley floor.

GENERAL PLAN POLICIES & ZONING

The ECAP designates the project area as Large Parcel Agriculture (LPA). 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, wind farms and related facilities, utility corridors, and similar uses compatible with agriculture.

Lands in the project area are zoned A-160 and A-320 (Agricultural District, with minimum building site areas, respectively of 160 acres or 320 acres), which allows for agricultural and other non-urban uses. Within the A District, privately owned wind-electric generators are a conditionally permitted use subject to approval by the East County Board of Zoning Adjustments (EBZA).

BACKGROUND

The existing turbines in the APWRA were originally developed under CUPs approved between the early 1980s and mid 1990s. Throughout that period, AES Seawest Power Resources held five permits on the eight properties for the operation of 433 wind turbines with a reported nameplate generating capacity as of 2005 of roughly 25.4 megawatts (MW). These permits expired between 2002 and 2004, and after applying for renewal permits for continued operation, the East County Board of Zoning Adjustments approved five use permits for Seawest (along with 24 other permits) in two stages in November 2003 and January 2004.

These approvals were appealed to the Board of Supervisors on various grounds, primarily that the special circumstances of ongoing avian mortality resulting from the wind farm operations required the preparation of an Environmental Impact Report (EIR), in order to establish new requirements to mitigate and compensate for the death of birds protected by specific laws and regulations. In September 2005 the Board of Supervisors partly granted and partly denied the appeal in finding the permits were exempt from CEQA as existing facilities that were not being expanded, but required that an EIR be prepared to address repowering, and that specified percentages of turbines be removed progressively in 2009, 2013 and 2015 in advance of repowering by the end of 2018, after a 13-year term of the use permits. Among the key requirements were the establishment of a monitoring team to assess progress on reducing avian mortality, instituting a Scientific Review Committee (SRC), and establishing an Avian Wildlife Protection Program and Schedule (AWPPS) with various measures aimed toward reduction in avian mortality, most notably with a Winter Season Shutdown (WSSD) between November 1 and February 15 of each year (originally split, to allow alternating halves of the APWRA to operate during one half of the shutdown period).

However, after approval of the CUPs in 2005, a coalition of five regional Audubon groups (including the Golden Gate Audubon Society – GGAS) and Californians for Renewable Energy (CARE) initiated a lawsuit to overturn the approval. Mediation ordered by the court, with the involvement of the California Department of Fish and Game (CDFG, now the Department of Fish and Wildlife, or CDFW) led to a Settlement Agreement between Audubon, CARE, the County and three wind power companies (including Seawest Power Resources) to take further steps to reduce raptor mortality by 50 percent from fatality levels as of 2005 (based on the fatality rates of four focal species – golden eagle, burrowing owl, American kestrel and red-tailed hawk), by January 2010. The primary means of achieving the reduced level of mortality were to increase the WSSD to apply to all turbines during the entire shutdown period, to shut down specific turbines identified as hazardous, and develop a Natural Communities Conservation Plan (NCCP) under the auspices of the CDFW. However, with the consent of the Settling Parties in 2009, the NCCP process ceased and was effectively replaced by commitments by the wind-energy companies to accelerate repowering, based on expectations that it would have the greatest benefit of reducing avian mortality. An Avian Protection Plan for the APWRA was developed and has since been incorporated into the APWRA Program EIR for the parties to the Settlement Agreement to serve that purpose.

In 2012, NDEC (now a subsidiary of Ogin, Inc.) acquired AES Seawest Power Resources, LLC and its assets in 2012, and renamed that corporation (AES Seawest) as Forebay Wind, LLC as a subsidiary company to continue to operate the existing turbines. In addition, NDEC formed another subsidiary company Sand Hill Wind, LLC, for the purpose of repowering the site in the APWRA with Ogin's proprietary shrouded wind turbine design. Because AES Seawest Power Resources was a signatory to the Settlement Agreement, the obligations of the Settlement Agreement and the Seawest use permits are also the obligations of Forebay Wind. It should be noted that the Settlement Agreement and use permits did not require repowering with any specific technology. However, the shrouded turbine and its proprietary designs were developed with a similar repowering objective of using the latest aerodynamic modeling techniques to increase electrical generation output from any given wind resource area, and remove old generation turbines.

PROJECT DESCRIPTION

The proposed project would be implemented in two phases, beginning with an Initial Repower which is presently before the EBZA for approval as a conditional use permit (CUP). The Initial Repower would completely decommission and replace 73 existing 1980s-'90s-era turbines in the three project areas (seven of the eight total parcels) with 40 new shrouded turbines. The primary purpose of the Initial Repower is to install a sufficient number of the shrouded turbines to support an Avian Validation Study to study and compare bird behavior, turbine interaction and mortality rates between the existing and shrouded turbines, using a Before-After-Control-Impact (BACI) methodology. The Avian Validation Study is a three-year study begun in 2012, primarily funded by a Public Interest Energy Research (PIER) Grant from the California Energy Commission (CEC), in the form of a twice-weekly fatality survey of existing turbines. The Study design assumes installation of the 40 shrouded turbines in 2014, thereby allowing for one year of detailed study of how the four focal raptor species interact with the new turbine design, and in direct comparison with the existing turbines.

The shrouded wind turbine design consists of a foundation, tower, and turbine at the top of the tower. The turbine apparatus includes an electrical generator and wind rotor (blades) surrounded by an inner and an outer shroud. Attached figures illustrate both a schematic and a photograph of a shrouded turbine. The advantage of the shrouded turbine design is that airflow approaching the gap between the shrouds is channeled directly to the rear of the turbine, resulting in reduced back pressure and, as a consequence, improved energy production over a standard turbine. In the field of turbine design it is also known as a mixer-ejector wind turbine (MEWT).

Each shrouded turbine has a nameplate capacity of 100 kW, so the combined output of the Initial Repower would be 4 MW, approximately the same as the existing generating capacity of the 73 older turbines to be removed. The table below from the DEIR identifies the specific parcels and numbers of turbines to be removed and installed as part of the Initial Repower.

Draft EIR, Table 2-1. Parcels and Turbines Included in Initial Repower Project

Applicable Existing CUP	Assessor Parcel Number	Parcel Ownership	Approximate Acreage	Permitted Turbines as of 2005	Included in Initial Repower (40 Turbines)	Existing Turbines to Be Removed for Initial Repower	Shrouded Turbines Proposed for Initial Repower
C-8023	99B-6325-1-4	Johnston	67.9	30	No	0	0
C-8161	99B-7750-6-0	Pombo	99.4	38	Yes	15	9
C-8182	99B-6325-1-3 99B-7375-1-7	Ralph	222.5 60	182	Yes	28	15
C-8201	99B-7875-1-2 99B-7875-1-3	Griffith	115.1 92.8	52	Yes	7	4
C-8203	99B-7500-3-1 99B-7600-1-1	Castello Arnaudo	112.9 104.9	131	Yes	23	12
<i>COMBINED TOTALS</i>			875.50	433		73	40

An estimated 330 existing turbines will remain in place during the third and last year of the Avian Validation Study for the purposes of analysis. The Study is intended in part to inform the design and siting installation of the Full Repower, which would completely decommission the estimated 330 remaining old generation turbines and pads, and installing 300 more shrouded turbines. The proposed end result would be a total installed capacity of 34 MW, which would represent an increase of about 33% in the

nameplate capacity over the existing turbines (25.4 MW). The Full Repower would be the subject of a separate CUP, for which an application has not yet been submitted, and the details of which will depend on the outcome of the Study.

Other objectives of the Avian Validation Study include:

- Compare avian wind turbine interactions between Ogin shrouded turbines and multiple types of existing conventional wind turbines at sites with known high avian fatality rates during day and night and various wind and terrain conditions.
- Compare avian fatality rates between Ogin shrouded turbines and conventional turbines at known high fatality sites, using a short search interval and a BACI design.
- Explain variation in fatality rates by turbine design, flight patterns, and avian interactions with wind turbines (e.g., avoidance behaviors).
- Develop field-tested behavior survey methods and data that inform avoidance rates for use in collision risk models and map-based collision hazard models, with the eventual goal of using model results to assist with wind turbine siting.

Because the Initial Repower turbines would be located among existing turbines, no new access roads, substation facilities, interconnection lines, or operations and maintenance (O&M) facilities would be necessary. However, some internal access roads would require widening from an existing width of 10 feet to a width of 16 feet to accommodate construction traffic. In addition, new pads, new connections to the existing power collection system, and temporary laydown areas would be installed for construction of the shrouded turbines. A complete description of the project, its objectives, the details of its construction in the two phases, and mitigation measures proposed by the applicant to address anticipated impacts, is provided in the DEIR.

ANTICIPATED SIGNIFICANT ENVIRONMENTAL EFFECTS

For the Initial Repower, the DEIR provides a project-level analysis of the significant impacts of the combined activities of decommissioning the 73 existing turbines, and construction and operation of the shrouded turbines. For the Full Repower, the DEIR provided a program-level analysis (i.e., less detailed), because the siting of the individual additional turbines has not been determined, pending the outcome of the Avian Validation Study. However, the DEIR determined that the impacts of the Full Repower would be similar to the Initial Repower on the same topic areas, but with substantially greater magnitude due to the larger number of shrouded turbines involved. Among the various individual impacts, many could be reduced to less than significant levels after mitigation is implemented, while others would remain significant and unavoidable. Many of the impacts are temporary, limited to the period of construction and shortly thereafter, while others are considered long-term.

In particular, the unavoidable significant environmental impacts included substantial adverse effects on scenic vistas, the existing visual character or quality of sites and their surroundings, temporary, but cumulatively considerable net increases of certain criteria pollutants during the construction period (ozone precursors and greenhouse gases, in excess of quantitative thresholds), direct impacts on special-status avian species, traffic impacts on local and regional routes in the project vicinity during construction that would exceed local standards and congestion management program level-of-service standards, and potential increases in hazards due to construction-related traffic. Impacts were identified in the following topic areas, for which short summaries are provided below:

Aesthetics. The Initial and Full Repower would have substantial adverse effects on scenic vistas, scenic resources along a designated scenic highway, and may degrade the existing visual character or quality of

the site and surroundings. These effects were determined to be significant and unavoidable. In addition, increased light and glare could result on a temporary basis if construction were to occur during the nighttime and used high-voltage lighting. However, the effects on light and glare could be reduced to a less than significant level by limiting construction to the daytime.

Air Quality. The construction of the Initial and Full Repower phases would require a level of truck trips, excavation and machinery that would result in emissions of certain criteria air pollutants, including greenhouse gas and ozone precursors. Fugitive dust levels could be reduced to less than significant levels with identified mitigation measures; however, levels of nitrogen dioxide emissions would exceed allowed thresholds, and although some reduction by mitigation measures can be achieved, the impact would remain significant and unavoidable, although on temporary basis occurring during each of the two phases of the project. An analysis of toxic air contaminants determined that there would be no significant cumulative increases in the emission of fine particulates or other hazardous air pollutants.

Biological Resources. The construction activities associated with the Initial and Full Repower could adversely affect certain special-status plant and animal species that are likely to be present on the project sites, the latter including, among others, red-legged frog, California tiger salamander, Western burrowing owl, golden eagle and San Joaquin kit fox. The impacts on the special-status plants and terrestrial animal species can be reduced to less than significant levels through a combination of general avoidance and minimization measures, which have been identified in the *East Alameda County Conservation Strategy* (EACCS), use of biological monitors, post-construction grassland restoration steps, and compensation for habitat loss if certain resources or habitats are encountered and require disturbance for project construction. Significant impacts on wetlands are anticipated, which would require preparation of wetland delineations meeting federal guidelines; combined with other identified procedures, the impacts on wetland habitats and related species would be reduced to a level that is less than significant.

Impacts on avian species are expected to be significant and unavoidable. The Applicant has proposed certain *voluntary* mitigation measures (identified as Applicant Proposed Measures or APMs), to provide firstly (APM 1), for monitoring of avian species' mortality in the third and remaining year of the Avian Validation Study and if necessary continue the monitoring beyond for up to an additional two years to determine if the fatality rate resulting from the shrouded turbines is higher than, or substantially less than the baseline rate of mortality associated with the existing turbines. Depending on the resulting fatality rate, APM 2 would implement a winter-season shutdown (November 1 to the following February 15th) of the shrouded turbines. More specifically, if red-tailed hawk fatalities decrease by less than 50 percent below the baseline, the Applicant would either continue monitoring or implement the seasonal shutdown, although for burrowing owls, a decrease of less than 25 percent below the baseline fatality rate would trigger either the seasonal shutdown or additional years of monitoring (independently of impacts on the other focal raptor species, including red-tailed hawk, golden eagle and American kestrel). A decrease of less than 30 percent in the fatality rate of American kestrel would initiate the mitigation, and for golden eagle, the threshold is nearly zero, such that if any golden eagle deaths are attributed to the shrouded turbines, the Applicant would initiate the shutdown or continued monitoring.

These measures are hypothesized to reduce avian mortality due to wind turbine operations, but because the effects of the new turbine technology on avian behavior are generally unknown, the APMs may not avoid significant impacts on avian species, so other mitigation measures are identified by the EIR authors, including changes to the design of infrastructure such as meteorological towers and overhead power lines, potential habitat conservation compensation for burrowing owl, and retrofitting electrical power lines in the area in the event of golden eagle fatalities. For the Full Repower, a number of other mitigation measures were identified such as modified technology, micro-siting to avoid or reduce hazards, or use of conventional large scale turbines, the application of which would be determined based on the results of the Avian Validation Study.

Cultural Resources. The excavation required for decommissioning and construction of new turbine foundations would have the potential to disturb unknown archaeological resources or buried human remains; however, procedures to stop work and notify appropriate parties would reduce the impact to a less than significant level.

Geology, Soils and Paleontological Resources. Fault ruptures, strong earthquake shaking and ground failure due to landslides would pose a potentially significant impact, for which preparation of site-specific geotechnical reports is expected to reduce to less than significant levels. Significant damage to paleontological resources that could occur, could also be avoided by retaining a suitably qualified monitor, educating the construction crews about fossil materials, and requiring appropriate procedures to preserve and/or recover valuable resources.

Hydrology & Water Quality. The construction activities associated with the Initial and Full Repower would disturb earth and soil in a potentially adverse way for water quality. Implementation of Best Management Practices and compliance with requirements of a site-specific stormwater pollution prevention plan (SWPPP) would serve to reduce the impacts to less than significant levels.

Noise. The operation of the new shrouded turbines under the Initial Repower would generate noise in excess of 55 L_{dn} (a day-night average) at some locations, which exceeds an EPA noise level standard for residential land uses (of which there are a few near the project sites, mainly along Midway Road); however, noise levels expected to be generated by the shrouded turbines would be less than existing noise levels, and therefore the noise impact, including all locations, would be less than significant. However, for the Full Repower, noise levels are expected to exceed existing baseline noise levels as well as County standards based on the EPA guidelines for residential uses. These impacts could be reduced to less than significant levels with measures to ensure compliance such as siting turbines further from residences, operational modifications of the turbine including nighttime shut down or limited operations. A full acoustic evaluation of the project area and siting design of the Full Repower by a qualified noise professional would be required.

Construction noise would not include high-impact activities such as pile-drivers, or take place in close proximity to any residence, so related ground-borne vibration would not be significant. However, construction noise would exceed some Alameda County Noise Ordinance standards and existing ambient noise (which includes existing wind turbine operations), resulting in potentially significant impacts. Mitigation measures to manage use, location, technology and time of use would reduce the impacts to less than significant levels.

Transportation and Traffic. The Initial and Full Repower phases of the project may result in potentially significant increases in hazards due to construction-related traffic, including temporary disruption of annual bicycle sporting events. In addition, traffic generated by construction activity may exceed the County's Congestion Management Program level-of-service standards, bicycle routes and also increase hazardous conditions due to construction-related vehicles. The potential impact of inadequate emergency access could also be significant during construction. These impacts could be reduced to less than significant levels on regional routes by implementation of a construction traffic control plan; however the impact during peak construction periods would remain significant and unavoidable on local routes, such as Altamont Pass, West Grant Line and Mountain House Roads. Following construction, the operation of the shrouded turbines in either the Initial or Full Repower phases would have no significant traffic impact, primarily because work crew levels would not substantially change from requirements for the existing turbines.

Other Issues. The DEIR determined that impacts on agriculture would be less than significant, along with effects on odors, implementation of regional air quality plans, special-status bat species, potential for loss

of topsoil, plans and policies to reduce the emission of greenhouse gases, use or release of hazardous materials, conflict with emergency evacuation plans, wildland fires, risk of blade throw, interference with microwave, radar and telecommunications signals (as a public safety concern), depletion of groundwater or aquifers, permanent increases in noise, and secondary environmental effects of new utility or service system infrastructure (e.g., water lines, wastewater pipelines or treatment facilities). For some issues related to those immediately above, it was determined that there would be no recognizable impact. The DEIR also indicates that certain topic areas are not addressed in its text except in the Initial Study Checklist (incorporated into the Notice of Preparation, in the Appendices), for which the project would have no potential for adverse effects, including land use and planning, mineral resources, population and housing, public services and recreation.

Alternatives. The DEIR, in compliance with the requirements of CEQA to identify alternatives that would avoid or lessen the significant effects of the project and that would feasibly attain the fundamental objective and most of the secondary project objectives. These included the No Project alternative, in which the existing turbines are assumed to be operated until about 2018, after which another company is expected to acquire the assets and replace them with conventional, current generation large-scale turbines. The other alternatives evaluated were: 1) a Reduced Avian Validation Study Alternative – in which only 10 shrouded turbines would be built in the Initial Repower, but with the same maximum buildout of 340 shrouded turbines for the Full Repower; 2) the Conventional Turbines Alternative – for which only the Full Repower phase would be changed to use current generation conventional turbines to replace only the existing nameplate capacity on the project sites (about 25.5 MW); 3) a High Risk Avoidance Alternative – which would modify the Full Repower deployment of the shrouded turbines to exclude sites with recognized higher risks to avian species; and 4) the Seasonal Avoidance Alternative, in which all the shrouded turbines, developed in the same phases as proposed, would be shut down during the winter season. The DEIR identified the Reduced Avian Validation Study Alternative as the environmentally superior alternative, on the basis that during the Initial Repower, ground disturbance and impacts on terrestrial species and from construction on other resources would be substantially reduced.

KEY ISSUES IN FINAL EIR

As required by CEQA, a Final EIR/Response to Comments document was prepared, containing the comments received on the Draft EIR during the 45-day comment period that ended on Monday, December 23, 2013, and responses to each comment. Consistent with the intent of the CEQA Guidelines for both wide public involvement and agency consultation, the Draft EIR was made available at the County offices, at the Livermore Library, and compact discs containing the entire document were mailed to interested parties, the BZA members, the members of the APWRA Scientific Review Committee (SRC), as well as the U.S. Fish and Wildlife Service and the California State Clearinghouse in the Office of Planning and Research, who distributed copies to various state agencies.

Comments received included letters from two public agencies, the Contra Costa Water District and the California Department of Fish and Wildlife (Bay-Delta Region), Save Mount Diablo, a non-profit environmental advocacy organization, and from the APWRA SRC, based on its telephone conference, which yielded both consensus comments, and comments from its individuals members. Other comments were received from Andrew C. Bell of Downey Brand LLP on behalf of Ogin, Inc. (on behalf of New Dimension Energy Company, LLC or NDEC, another operating entity of Ogin, Inc., which is the parent company of the Project Applicant, Sand Hill Wind LLC), and area residents (near Mountain House Road and the Griffith & Brockman parcels), Adrian and Suzanne Dykzeul. Some of the main issues raised by each of the commenters are highlighted as follows, along with a very general summary of how the County has responded to the issues raised:

Contra Costa Water District. The District was primarily concerned with potential effects of the Project on its own designated conservation lands near the Project site, and certainty that they would be advised if any Project activities would disturb such properties. An evaluation of the Project activities indicates that there is no expectation of any activities on District conservation properties or that would adversely affect those properties. However, the District would be advised as a condition of approval.

California Department of Fish and Wildlife (Bay-Delta Region)(CDFW). The Department of Fish and Wildlife indicated it was concerned that take of special-status plant and animal species could occur in spite of mitigation measures identified in the EIR. The Draft and Final EIRs acknowledge such a potential, and state that the Applicant will be required under the California Endangered Species Act (CESA) to consult with the CDFW on such potential effects (as well as with the US Fish and Wildlife Service for take of federally-protected species), and obtain an incidental take authorization (ITA) under CESA and the federal Endangered Species Act (ESA) if required. The Department recommended that the County require the Applicant to obtain ITAs for potential take of California tiger salamander, San Joaquin kit fox and Swainson's hawk. The letter states the EIR inaccurately reported the absence of fatalities of Swainson's hawk, and that one such fatality was detected in the 2005-06 survey season. However, in the Final EIR, the County has determined that based on the record of a virtually undetectable mortality rate for Swainson's hawk out of many, many years of monitoring and research, the potential for Swainson's hawk to collide with the new turbines would be extremely remote, and not a potentially significant impact of the Project. Nonetheless, it is observed in the Final EIR that CDFW has jurisdiction over the take of Swainson's hawk under CESA, such that the Applicant would be required to consult with the Department on any potential take.

Additionally, the Department notes that the EIR indicates that up to three years of observation (under the APMs) to obtain final results, and although it suggests that for this reason the County should find there is potential for a Swainson's hawk take, a potential impact and the necessity of additional mitigation, it is further the County's view that the evidence does not support such a finding, and that mitigation cannot be reasonably required for a potential impact that is in effect highly speculative. The Final EIR response to the comment reiterates that the CDFW has jurisdiction over the Project through CESA, but that the EIR's identification of impacts, mitigation measures and resulting mitigation monitoring and reporting program (MMRP) is fully compliant with CEQA.

The CDFW also noted the need for the applicant to obtain a Lake and Streambed Alteration Agreement (LSAA), that will use the Project EIR for its consideration, and therefore requested a full evaluation of potential impacts to stream and/or riparian resources, and provide adequate mitigation measures. The County considers the EIR to adequately recognize such impacts and provide appropriate mitigation.

APWRA Scientific Review Committee (consensus comments, obtained from a telephone conference). The SRC was primarily interested in additional information regarding the selection, definition and rationale behind Alternative 1 (an Initial Repower of only 10 shrouded turbines), and its selection as the environmentally superior alternative. The SRC also asked for additional clarifications about the methodology and assumptions, such as staging of construction areas, use of APWRA Monitoring Team data and data from the contributing researcher, Shawn Smallwood.

The County responded in the EIR that Alternative 1 was intended to serve the CEQA requirement for a range of alternatives, and that it was based on the Applicant's original concept of a smaller study of the technology. While Alternative 1 would yield some useful results, the study was recommended by both the SRC and others in the scientific community to be expanded to 40 or more shrouded turbines to provide more robust or informative statistical data. It was identified by the EIR as the environmentally superior alternative based on its much smaller footprint in the Initial Repower phase and directly related impacts on the full range of environmental resources. An Errata chapter is included in the Final EIR which

includes additional explanation of how Alternative 1 was selected, and which responds to the SRC's questions about methodology and assumptions in the EIR.

An explanation of why the Avian Validation Study used separate baseline data from Dr. Smallwood is provided in both the Response to Comments chapter and in the Errata chapter; the general reason is that a distinctive baseline for the *high risk* turbines on the Project sites needed to be established. None of the changes to the text in the Errata affect the determinations of the EIR regarding the significant impacts of the Project, including the Initial and Full Repower phases.

SRC Members. Members of the SRC were also invited to submit focused comments and questions on the methodology, assumptions and proposed mitigation measures related to avian safety as presented in the Draft EIR. Some primary comments of each member, and the County response are summarized below:

- *Joanna Burger:* Although Ms. Burger found the objectives of the Project to have been clearly stated in the EIR, some details were unclear, especially some of the assumptions made, the overall change in the density of turbines with the two phases of repowering and how impacts were assessed. Additional comments sought a wide range of additional detailed information on methods, definitions, mitigation measures and the effects of stockpiled materials on burrowing owls. The Final EIR provides responses and changes to the text (in the Errata chapter) that are expected to adequately address these concerns.
- *Jim Estep:* Mr. Estep expressed interest in supplementing the BACI analysis with a comparison of the shrouded turbines with other (i.e., non-shrouded) repowering projects in the APWRA, and indicated an expectation that the analysis (the Avian Validation Study) would provide that comparison. He indicated a desire to see more analysis of biological resources under the no project alternative in the final EIR, more information on how the 157 control (non-repowered) turbines were selected, and additional assessment of biological resource impacts under the Full Repower. He also asked about the assumptions used to project avian fatalities, and had questions with regard to the APMs and the potential to end monitoring after only one year after construction if the mortality rate is below the baseline. He also suggested the winter time shut down should use the results of the BACI study, and stated that acquisition of replacement lands or off-site mitigation bank credits are no longer considered sufficient to offset avian mortality impacts from the operation of wind turbines. The Final EIR provides responses and text changes that address these concerns.
- *Michael L. Morrison:* Dr. Morrison expressed an opinion that Alternative 1 would invalidate the objective of the Avian Validation Study, and BACI-type studies of this kind would be compromised by low sample numbers and lack of replication. He objected to the Draft EIR's contradictory statements that the 10-turbine alternative might be sufficient, followed by a statement that it would be inadequate. He cited appendices in the Avian Study Design and an inquiry to the study's author, Dr. Smallwood, to further illustrate the inadequacy of a 10-turbine Initial Repower (Alternative 1). Furthermore, he noted the impacts of the Initial Repower were limited to the immediate vicinity of the currently operating turbines, and made additional arguments against the selection of Alternative 1. The Final EIR provides responses and changes to the text that address these issues.
- *Sue Orloff:* Ms. Orloff's focus was on the methodology of the Avian fatality (or Validation) Study as explained in the EIR, which appeared confusing and contradictory. She began by questioning if the results of the study, based on the turbine density under the Initial Repower, would be applicable to the evidently higher turbine density under the Full Repower, and noted fatality rates may be directly linked to turbine density. Various specific questions regarding the methodology were raised, and noted that the EIR does not compare the new shrouded turbines with other repowered turbines, but only to the old generation turbines. Ms. Orloff also observed that the red-tailed hawk (RTH) target reductions (or threshold percentages) seemed arbitrary or high, and that seasonal shutdowns could increase rather than decrease fatality rates for burrowing owl (BUOW). Lastly, Ms. Orloff expressed

concern with the differences in mean fatality rates between the methodologies used by PIER (the Public Interest Energy Research unit of the CEC) and ICF (the Monitoring Team and EIR authors), and the use of multipliers to derive baseline fatality rates. The Final EIR contains responses and an Errata chapter with changes to the text that address these comments.

- *Julie Yee:* Ms. Yee focused her questions on the identification of significant avoidable impacts on avian species based on existing baseline mortality rates, whereas determination of such impacts would require using a baseline of zero fatalities, although the baseline established in the EIR was established as 15.5 total focal species fatalities each year. She questioned how the APMs were applied to determine impacts on avian species, as it appeared that significant impacts could only result if the baseline were defined as zero fatalities, which did not appear to be the intent. With regard to the analysis of Alternatives, she considered it counter-intuitive that the No Project Alternative was determined to have *increased* avian mortality impacts compared to the Project, instead of *reduced* impacts, given that the Project impacts would be significant. She felt the finding that the proposed project would have significant and unavoidable¹ impacts was not consistently applied to the analysis of the Alternatives, or correctly reported in Table 4-1. It also appeared to her that the analysis of Alternative 1 did not account for the effects of the continued operations of the unrepowered 3 MW, and the limitations on how the Environmentally Superior Alternative could be selected were not clear.

Ms. Yee also provided comments on certain assumptions about the methodology for assessing avian impacts, including assumed direct proportionality between cumulative installed generation capacity and avian mortality, secondly, the assumption of similarity between new and existing turbines, and thirdly, the number of remaining existing turbines under Alternative 1. On the topic of proposed mitigation measures, Ms. Yee commented on the mitigation benefit of the BACI method, which the DEIR described as a form of avian impact mitigation, would be seriously reduced with the selection of Alternative 1. Lastly, she questioned if the compensatory land preservation mitigation (BIO-11b) for burrowing owl would provide a reasonable amount of the area, based only on the total swept area, a ratio of 1:1, and a total of 1.4 hectare. The Final EIR contains responses to these comments, as well as an Errata chapter with changes to the text that address her concerns.

Save Mount Diablo (a non-profit environmental advocacy organization). The letter from SMD stated that it was concerned about inadequacies in the draft EIR, particularly regarding proposed mitigations, reduced fatality rates for golden eagles, and the implications for the full Repower in the event reduction targets identified in the EIR are not met. In particular, SMD expressed a concern that although it is stated that the Applicant does not intend to proceed with the Full Repower until reductions from baseline rates for all four focal species have been documented and accepted by the County, there is no explicit assurance provided in the EIR that absolutely no wind turbine construction beyond Initial Repower will be permitted if reduction targets are not met. The letter requested the EIR include provisions to guarantee that neither the Initial or Full Repower be completed unless the avian fatality reduction target rates are met, including a specific reduction of at least 80 percent in golden eagle fatality rates. However, a subsequent comment in the letter states that SMD supports the experimental approach to investigating the potential impacts of the shrouded turbines, and therefore does not suggest changes to the Initial Repowering phase. Other major comments by SMD included:

- Request for clarification of existing and proposed total swept area and turbine heights, as the Full Repower would appear to increase the total rotor swept area by between 24% and 137% over the swept area of the old turbines. This comment is related to a concern that the net increase in total

¹ Ms. Yee's comments cite the determination in the DEIR that the proposed project would have "significant and *avoidable*" impacts on avian mortality (emphasis added); this is presumably a typographical error, because the DEIR actually characterizes the impacts as "significant and unavoidable" (emphasis added).

swept area with the Full Repower would offset (or cancel out with increased avian mortality) the reductions in avian mortality due to the improved technology.

- In general terms, the letter asks if there a direct correlation between changes in numbers of turbines and blade swept area and expected reductions in avian mortality, and if so, if the Full Repower should not be limited to fewer new shrouded turbines, in order to ensure the target reductions in avian mortality are maintained or sustained. The letter compares the substantial reductions in the numbers of turbines, by percentage, for other repowering projects – 77 to 89 percent reductions in turbine numbers – and suggests the Full Repower should have a similar – 80 percent at minimum – reduction in the number of new shrouded wind turbines to be installed if post-Initial Repower monitoring data indicates that avian fatality rates (especially that of golden eagle) are not significantly reduced by the shrouded turbines technology.
- Recommendation to use hazard-based micro-siting of turbines (per Mitigation Measure Bio-11d) as a requirement for the Full Repower and not an option to depend on the results of the Avian Validation Study. If expected reductions in fatality rates are not met, Alternative 3 (the High Risk Avoidance Alternative, to exclude sites with higher risks to avian species) should be the adopted alternative. The letter included that a graphic illustrating areas with high risk, and low risk of golden eagle collisions and potential locations that should be avoided.
- The letter states that it is recognizes it would be difficult to determine when a reduction of 80% in avian mortality will have been achieved, especially when based on the conservative assumption that avian fatality rates would not be reduced, but remain at baseline levels, the Full Repower would result in no more than an estimated two golden eagle fatalities per year.

The County responded to these comments in the Final EIR in both the Response to Comments chapter and in the Errata chapter with changes to the text that address these concerns.

Andrew C. Bell of Downey Brand LLP on behalf of New Dimension Energy Company, LLC (also Ogin, Inc., and the applicant, Sand Hill Wind, LLC). The extensive letter from Downey Brand covered a wide range of topics, the most important of which are highlighted below:

- The name change of FloDesign Wind Turbine Corp. to Ogin, Inc.
- Clarifications of the objectives and description of the “Applicant Proposed Measures”.
- Using rough proportionality principles for compensatory mitigation, with regard to the proposed 2:1 ratio of compensation for impacts on special status plant species, that should instead be 1:1.
- Characterization of how fatality rates with shrouded turbines will compare to existing baseline levels, and the certainty or expectation that the APMs would not eliminate increases in fatality rates over existing levels.
- Revising mitigation measure BIO-11d to require additional specified measures to reduce avian mortality, if the results of the Avian Validation Study show the Full Repower will exceed the *existing baseline rates* for the four indicator raptor species, and *not* be triggered if the mortality rates exceed the Initial Repower “performance standards” identified for the APMs (e.g., 0.562 birds/MW/year for American kestrel; 3.126 for burrowing owl, etc.).

The Final EIR addresses these concerns, in the Response to Comments chapter, and in an Errata chapter with changes to the text that address these issues.

Adrian and Suzanne Dykzeul (area residents on Mountain House Road near the Griffith & Brockman parcels). The Dykzeul’s report that they built their home with the view of the valley to the east foremost in their minds, and accepted the view of the existing turbines, but believe that the new turbines will

obstruct their view as well as adversely affect their property value. They suggested relocating some of the turbines on the southernmost portion of the Arnaudo property further to the northeast would reduce the adverse effect on the view. The County acknowledges these comments in the Final EIR, but notes that the Avian Validation Study had particular focus on the siting of three shrouded turbines in that location, for comparison with existing high risk turbines in the same location. As a result, such a relocation would compromise some essential components of the Study.

As required by CEQA (Section 21092.5), the final EIR was made available at least 10 days prior to certification. A Draft Resolution is included with this staff report for the EBZA to certify the final EIR, adopt findings of significant effects, adopt a Mitigation Monitoring and Reporting Program, and adopt a Statement of Overriding Considerations. Separate attached Exhibits are provided for each of those three required components of the Resolution to certify the EIR as being in compliance with CEQA. The Findings of Significant Impacts (Exhibit A of the Resolution) includes separate sections listing the significant and unavoidable impacts, those effects that can be avoided or reduced to less-than-significant levels, and impacts that were less than significant and did not require mitigation measures. The Findings of Significant Impacts acknowledge that the visual, temporary air quality (including GHG emissions), avian species and traffic impacts of the Project would be significant and unavoidable; however, it is worth noting that each of the Alternatives analyzed in the EIR may be expected to have similar unavoidable impacts on avian species, air quality and traffic.

The Statement of Overriding Considerations puts these effects in the context of the vital importance of other essential state, regional and local goals and objectives, to increase (and maintain) the generation of renewable electric energy, reduce carbon dioxide and other GHG emissions, provide (or maintain) employment and further investment in infrastructure, and lastly – and perhaps most critically – investigate a new technology with substantial potential to reduce the rate at which birds are injured or killed by wind turbine operations in the Altamont area of Alameda County.

Furthermore, it should be recognized, as it is noted in the Exhibits to the Draft Resolution, that the Applicant has proposed a series of measures and thresholds for making future decisions, defined as its Applicant Proposed Measures (APMs), to voluntarily – independently of the impacts defined in the EIR and the Mitigation Measures proposed therein – initiate changes to operations and the timing of its Full Repower phase. These Measures will provide a substantial service to the County to inform how future decisions by the BZA on the Full Repower can be made. More broadly speaking, decisions on the Project at the present time should be primarily focused on the Initial Repower phase.

A separate Resolution to approve the CUP for the Initial Repower is also attached, which includes draft conditions of approval that address the overall authorization for the use and broad obligations (e.g., insurance, bonds, liability, etc.), required permits and authorizations from other governmental agencies and departments, the implementation of the Mitigation Monitoring and Reporting Program, review and reporting procedures, site restoration and expiration after a period of thirty years.

RECOMMENDATION

The Board should receive a staff presentation, take public comment on the Final Environmental Impact Report and on the proposed Project, review the Mitigation Monitoring and Reporting Program (MMRP), then certify the Final EIR by adoption of a draft Resolution for the purpose of CEQA, and lastly, approve the Project by adoption of the second Resolution and proposed draft conditions.

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