# APWRA Repowering Program EIR SRC Presentation

June 9, 2014

# Purpose of Presentation

* Describe the Repowering program
* Outline the CEQA process
* Describe the biology approach and results
* Request SRC's input on the evaluation of the project's avian impacts, particularly comments regarding:
  * Assumptions used
  * Methodologies used
  * Mitigations proposed

# The Repowering Program

* 2007 Settlement Agreement required the development of an NCCP "or similar agreement"
* County initiated NCCP/HCP in 2008 - discontinued by 2012
* Focus shifted in 2012 to Program EIR
* The "program" is a series of connected actions – approval of future CUPs for repowering in the APWRA
* PEIR also addresses two projects at a project level:
  * Golden Hills – NextEra 88.4 MW (52 turbines)
  * Patterson Pass – EDF 19.8 MW (8-12 turbines)

# California Environmental Quality Act (CEQA) and Environmental Impact Reports (EIRs)

* CEQA is intended to inform government decision makers and the public about potential significant environmental effects of proposed activities

* EIR is an environmental evaluation and disclosure document

# EIR Process

* Notice of Preparation
* Notice of Preparation Public Comment Period (Scoping)
* Draft Environmental Impact Report
* **Draft Environmental Impact Report Public Comment Period**
* *Final* Environmental Impact Report (including Response to Comments)
* Mitigation Monitoring and Reporting Program
* Certification of Final EIR
* Project Approval or Denial

# Draft EIR Public Review

* CEQA-mandated review period of 45 days
* June 6 through July 21, 2014
* Public comment meeting - Thursday, June 26, 2014:
  * EBZA Workshop at 10:00 a.m.
  * Public comment meeting at 1:30 p.m.
    City of Pleasanton Council Chambers
    200 Old Bernal Avenue, Pleasanton

# Comments on Draft EIR

* Per State CEQA Guidelines (Section 15204), comments should focus on
  * EIR's sufficiency in identifying and analyzing the possible impacts
  * Ways to avoid or mitigate the project's significant effects, including alternatives
* EIR's adequacy is determined in terms of what is reasonably feasible
* Comments should be provided to the County in writing

# Responses to Comments

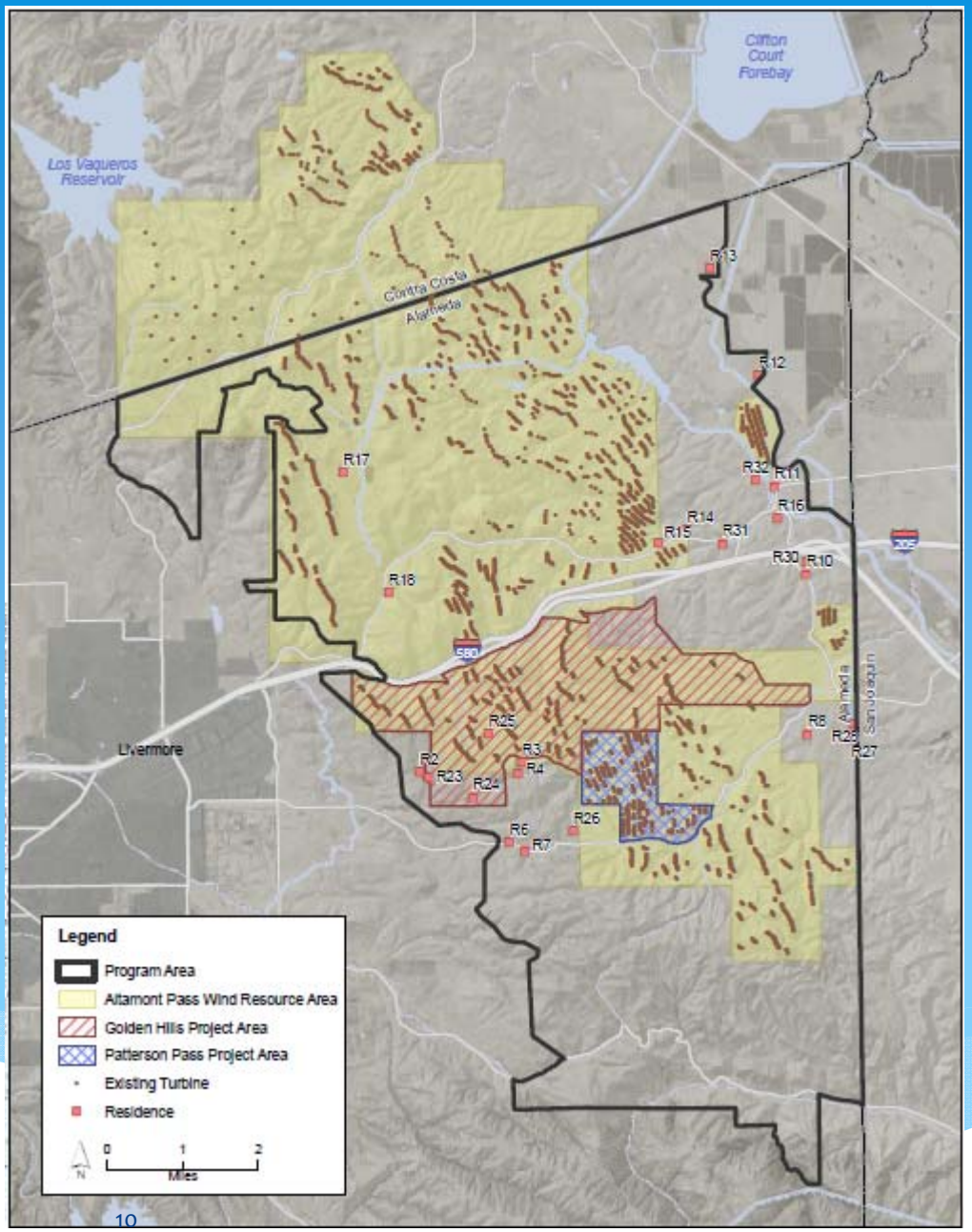
* Responses to comments on the Draft EIR will be provided in writing as part of the Final EIR

# Next Steps

* Public Review of Draft EIR – ends July 21, 2014
* Preparation of Final EIR and Responses to Comments – Fall, 2014
* Certification of Final EIR – Winter, 2014-2015
* Repowering construction begins – Spring, 2015

# Program Area

Fig 1-2 of PEIR



# Program and Projects Analyzed in EIR

* Program – a series of connected actions (the CUPs)
  * Program Alternative 1 – 417 MW (139 to 260 turbines)
  * Program Alternative 2 – 450 MW (150 to 280 turbines)
* Specific projects analyzed at a project level in the EIR
  * Golden Hills (88.4 MW)- NextEra- (52)
  * Patterson Pass (19.8MW)– EDF– (8 – 12 turbines)
* Other specific projects are listed in the document but analyzed as a part of the program alternatives
* Document Organization

# Alternatives Analyzed in EIR

* Two alternatives analyzed at equal level
  * Program Alternative 1 – 417 MW (139 – 260 turbines)
  * Program Alternative 2 – 450 MW (150 – 281 turbines)
* Other alternatives analyzed at a comparative level
  * No Project
  * No Repowering – full decommissioning
  * Fewer New Turbines
  * Avoid Specific Biological or Sensitive Areas
  * No New Roads

# Baseline for EIR Analysis

* Proposed project compared to baseline to assess impacts under CEQA
* Baseline is existing conditions when NOP was filed: August 24, 2010
* Avian Baseline is: Average annual estimates for bird years 2005-2011 from Monitoring Program Report (ICF 2013) x installed capacity (MW's) at the time of the NOP
  * Program – 329 MW
  * Golden Hills – 80.5 MW
  * Patterson Pass – 21.8 MW
* "Significance" is determined in the context of baseline, in consideration of commitments documented in the 2007 Settlement Agreement, and considering whether ongoing fatalities would be inconsistent with other laws and regulations.

# Biological Resources

* CEQA Requirements
  * Setting
  * Analysis Methods and Impacts
    * PEIR addresses terrestrial, avian and bat impacts
    * Focus here is on avian impacts
  * Mitigation Measures

# CEQA Requirements

* Setting
  * Regulatory Setting
  * Environmental Setting
  * Baseline
* Identification of Potential Impacts
  * Construction
  * Operations
* Mitigation Measures to Avoid or Reduce Identified Impacts
  * Required for significant (or potentially significant) impacts
  * Required even if mitigation measures won't reduce to impacts to less-than-significant

# Setting

* Biological Resources Chapter of the EIR Outline
  * Regulatory Setting
    * ESA, BGEPA, CWA, other laws and Acts
    * East Alameda County Conservation Strategy
    * Settlement Agreement (2007)
  * Environmental Setting
    * Land Cover Types
    * Wetlands
    * Special-Status Species (Plants and Animals)
    * Avian Mortality and Monitoring-page 3.4-45
    * Bat Mortality and Monitoring- page 3.4-46

# Identification of Potential Impacts

* Construction Related
  * Direct and indirect mortality
* Operational Related
  * Collisions with wind turbines
* Structure of the Presentation of Impact and Mitigation Measures
  * For each identified impact
    * Program Alternative 1 (417MW) presented first (a-1)
    * Program Alternative 2 (450MW) presented second (a-2)
    * Golden Hills project specific presented third (b)
    * Patterson Pass project specific presented fourth (c)

# Construction Related Impacts

* Impact BIO-8(a-c): Construction Related Disturbance on special-status and other migratory birds (3.4-85)
  * BMPs
  * Biological Monitoring in Sensitive areas.
  * Preconstruction surveys
  * Restoration of disturbed habitats
  * Measures to avoid and minimize impacts on nesting birds
  * Measures to avoid and minimize impacts on burrowing owl

# Construction Related Impacts (continued)

* Impact BIO-9 (a-c): Loss of occupied habitat for burrowing owl and foraging habitat for tri-colored blackbird and other special-status birds (3.4-89)
  * Compensation for loss of habitat
  * Restoration of disturbed habitats
  * Measures to avoid and minimize impacts on nesting birds
  * Measures to avoid and minimize impacts on burrowing owl
  * Compensation for the permanent loss of occupied habitat for western burrowing owl

# Operational Related Impacts

* Impact BIO-11 (a-c): Avian mortality resulting from interaction with wind energy facilities (3.4-98)
  * Operation of repowered wind energy facilities is expected to result in avian fatalities
  * Expected to be reduction in fatalities after repowering (for most species)
    * Diablo Winds
    * Buena Vista
    * Vasco Winds
  * PEIR outlines expected avian impacts after repowering

# Avian Fatality Analysis Methods

* Estimated fatalities for overall program (2 alts) and for 2 specific projects.
  * Existing baseline rate calculation
    * Fatality rate (birds/MW/year) x number of MW's (329 as of NOP for program)
    * Average of annual estimates from 2005-2011 bird years
    * Excludes Buena Vista and Diablo Winds turbines
  * Estimated repowered rate
    * Fatality rate (birds/MW/year) x number of MW's (Alts or specific projects)
    * Used rates from Buena Vista, Diablo Winds, and Vasco Winds
    * Calculated a range of estimated rates and fatalities

# Avian Fatality Analysis Methods (cont.)

## Table 3.4-10- (page 3.4-53)

| Species/Group | Nonrepowered[a] | Repowered | | |
|---|---|---|---|---|
| | | Diablo Winds[b] | Buena Vista[c] | Vasco Winds[d] |
| American kestrel | 0.59 | 0.09 | 0.15 | 0.30 |
| Barn owl | 0.24 | 0.02 | 0.00 | 0.03 |
| Burrowing owl | 0.78 | 0.84 | – | 0.05 |
| Golden eagle | 0.08 | 0.01 | 0.04 | 0.02 |
| Loggerhead shrike | 0.19 | 0.00 | – | – |
| Prairie falcon | 0.02 | – | 0.00 | – |
| Red-tailed hawk | 0.44 | 0.20 | 0.10 | 0.25 |
| Swainson's hawk | 0.00 | – | – | – |
| All raptors | 2.43 | 1.21 | 0.31 | 0.64 |
| All native non-raptors | 4.50 | 2.51 | 1.01 | 2.09 |

Notes: fatality rates reflect annual fatalities per MW. "–" denotes that no fatalities were detected. "0.00" signifies that, although fatalities were detected, the rate is lower than two significant digits.

[a] Average of 2005–2011 bird years.

[b] Average of 2005–2009 bird years.

[c] Average of 3 years (2007–2009).

[d] Values from first year of monitoring (2013).

# Avian Fatality Analysis Methods (cont.)

* PEIR acknowledges Biases
  * Baseline fatality rates obtained while management actions were being implemented to reduce fatalities (seasonal shutdowns, hazardous turbine removals)
  * Repowered fatality rates use Buena Vista and Diablo Winds rates, which are significantly smaller turbines than those that would be used in future repowering projects.
  * Likely to be considerable variation in collision risk across the APWRA
  * Variation in detection probability among studies.

# Avian Fatality Analysis Methods (cont.)

* Estimated Annual Avian Fatalities are Presented in PEIR (beginning on page 3.4-99)
* Focal Species (and other special-status species) are presented, as well as totals for all raptors.
  * American kestrel (baseline is 194 fatalities/year for APWRA)
    * 38-124 fatalities/year (417MW Alt 1) = 36-81% decrease from baseline
    * 41-138 fatalities/year (450MW Alt 2)= 31-79% decrease from baseline
    * Golden Hills: 8-26 fatalities /year (88.4 MW)= 45-83% decrease from baseline
    * Patterson Pass: 2-6 fatalities/year (19.8MW)= 54-86% decrease from baseline

# Avian Fatality Analysis Methods (cont.)

* Burrowing owl (baseline is 255 fatalities/year for APWRA)
  * 30-350 fatalities/year (417MW Alt 1) = 92% decrease from baseline to a 37% increase from baseline
  * 23-378 fatalities/year (450MW Alt 2)= 91% decrease from baseline to a 48% increase from baseline

  * Golden Hills: 4-74 fatalities /year (88.4 MW)= 91% decrease from baseline to a 19% increase from baseline
  * Patterson Pass: 1-17 fatalities/year (19.8MW)= 2-94% decrease from baseline

# Avian Fatality Analysis Methods (cont.)

* Golden Eagle (baseline is 27 fatalities/year for APWRA)
  * 4-17 fatalities/year (417MW Alt 1) = 44-84% decrease from baseline
  * 5-18 fatalities/year (450MW Alt 2)= 32-83% decrease from baseline

  * Golden Hills: <1-4 fatalities /year (88.4 MW)= 45-83% decrease from baseline
  * Patterson Pass: <1 fatality/year (19.8MW)= 56-89% decrease from baseline

# Avian Fatality Analysis Methods (cont.)

* Red-tailed hawk (baseline is 146 fatalities/year for APWRA)
  * 42-103 fatalities/year (417MW Alt 1) = 29-71% decrease from baseline
  * 45-111 fatalities/year (450MW Alt 2)= 23-69% decrease from baseline

  * Golden Hills: 9-22 fatalities /year (88.4 MW)= 35-75% decrease from baseline
  * Patterson Pass: 2-5 fatalities/year (19.8MW)= 49-79% decrease from baseline

# Avian Mitigation Measures

* MM BIO-11a. Prepare a Project-specific Avian Protection Plan (P3.4-104)
* MM BIO-11b. Turbine Siting to Minimize Impacts
* MM BIO-11c. Use Turbine Designs that Reduce Avian Impacts
* MM BIO-11d. Use Avian-safe practices in infrastructure
* MM BIO-11e. Retrofit existing infrastructure
* MM BIO-11f. Discourage Prey for Raptors
* MM BIO-11g. Implement Post-construction Monitoring
* MM BIO-11h. Compensate for the Loss of Raptors
* MM BIO-11i. Implement an adaptive management program

# Avian Mitigation Measures (cont.)

* MM BIO-11a. Prepare a Project-specific Avian Protection Plan (p 3.4-104)
  * Specify measures and protocols consistent with the mitigation measures in the program EIR
* MM BIO-11b. Site turbines to minimize potential impacts (p 3.4-104)
  * Micrositing to reduce risk using behavior data, modeling, etc.
  * Document efforts in the APP

# Avian Mitigation Measures (cont.)

* MM BIO-11c. Use turbine designs that reduce avian impacts (p 3.4-104)
  * Maintain at least 29 meters (95 feet) from blade tip (at the 6:00 position) to ground surface .
  * Use designs that limit or eliminate perching and nesting potential (avoid external ladders, railings, etc.)
  * Lighting on the fewest number of turbines possible (while still meeting FAA requirements)

# Avian Mitigation Measures (cont.)

* MM BIO-11d. Incorporate avian-safe practices into turbine related infrastructure (p 3.4-105)
  * Avoid the use of guy wires on permanent meteorological towers or when using guy wires use visible wires with bird deterrent devices
  * Do not light meteorological towers unless required by FAA
  * Bury all powerlines to the extent possible.
  * Comply with Avian Power Line Interaction Committee guidelines to prevent electrocutions
  * Focus lighting downward and minimize skyward illumination.

# Avian Mitigation Measures (cont.)

* MM BIO-11e. Retrofit existing infrastructure to minimize risk to raptors (p 3.4-105)
  * Retrofit existing infrastructure that will be retained to make it raptor safe (APLIC standards).
* MM BIO-11f. Discourage prey for raptors (p 3.4-105)
  * Place boulders at least 200 yards from any turbine
  * Place gravel around foundations to prevent burrowing near turbines.

# Avian Mitigation Measures (cont.)

* MM BIO-11g. Implement Post-construction avian fatality monitoring (p 3.4-106)
  * Required for all repowering projects
  * Minimum of 3 years
  * Additional years if first 3 years indicate that baseline fatality rates are exceeded (to assess the effectiveness of adaptive management measures- MM BIO-11i)
  * Additional 2 years of monitoring starting at year 10
  * Technical Advisory Committee (TAC)-to oversee monitoring program and consult on adaptive management measures

# MM BIO-11g (cont.)

* TAC will comprise representatives from the County, wildlife agencies, representatives of operators, and additional members (landowner, representative from Audubon, etc.)
* TAC will be a voluntary and advisory group that will support decisions by the County
  * Review project documents (i.e., APP) to ensure mitigation measures in PEIR are appropriately applied.
  * Review monitoring documents (protocols and reports)
  * Review and monitor implementation of adaptive management plans.

# MM BIO-11g (cont.)

* Monitoring program for each project will include the following components.
  * Avian use surveys
  * Carcass surveys
  * Detection probability surveys
  * Annual monitoring reports.

# MM BIO-11h

* MM BIO-11h. Compensate for the loss of raptors, including golden eagles, by contributing to conservation efforts (p 3.4-107)
  * Requires compensatory mitigation for raptors in 10 year increments.
  * Requires mitigation for estimated raptor fatalities
    * Based on Vasco Winds estimates (raptors/MW/year) extrapolated to specific projects
    * Or based on updates in project-specific EIR for future projects.

# MM BIO-11h (cont.)

* Several Mitigation Options
  * Electrical Pole Retrofitting
    * Suitable for golden eagle, REA required
  * Measures outlined in an approved ECP and BBCS
    * If measures are deemed by County to be comparable and equally protective of avian species.
  * Contribute to raptor recovery efforts
    * California Raptor Center contributions
  * Contribute to raptor conservation efforts
    * EBRPD, etc. for the benefit of raptors and raptor habitat
  * Contribute to regional conservation of raptor habitat
    * Determined through REA or other acceptable method, subject to approval by County
  * Other Conservation Measures Identified in the Future

# Resource Equivalency Analysis (REA)

* Example REA is provided as an appendix to the PEIR (Appendix C3)
  * Driven by the need for transparent method to determine required mitigation.
  * Method used by USFWS (eagles) and NOAA (natural resources) to determine compensatory mitigation.
  * Method accounts for environmental "debits" and "credits" with respect to impacts and mitigations.
  * Example includes an adjusted USFWS model which applies to raptors and the conservation and enhancement of lands as compensatory mitigation.

# REA (cont.)

* REA example assumes a typical 80MW project in the APWRA
* Example provides inputs and results for red-tailed hawk, burrowing owl, and American kestrel
* Inputs to the model include life history information (maximum lifespan, age of first reproduction, productivity, age distribution of birds killed, productivity of mitigation, etc.), number of projected fatalities, and assumptions regarding the number of benefit years for the mitigation.
* Model generates the total lost bird years from the impact and the relative productivity of the mitigation.
* Metrics are used to calculate the compensatory mitigation requirement (credit that is equal to the debit for the expected take)

# REA (cont.)

* Results indicate that an 80MW project with projected annual fatalities of 22 (RTHA), 5 (BUOW), and 26 (AMKE) would require 113 acres of mitigation (lands conserved and enhanced) every 10 years.
* REA example is intended to be used as a framework, guide, and planning tool to estimate compensatory mitigation.
* Model can be updated over time as new information becomes available (spreadsheets available from Alameda County upon request)

# MM BIO-11i

* MM BIO-11i. Implement an avian Adaptive Management Program (p 3.4-110)
  * Adaptive Management Triggered if fatality rates exceed baseline rates.
  * Several thresholds triggering additional measures.
  * Measures in consultation with the TAC
    * Visual modifications
    * Anti-perching measures
    * Contribution to research
    * Curtailment
    * Cut-in Speed Study
    * Real-time curtailment

# EIR Conclusions and SRC Input Requested

* Repowering is expected to reduce impacts to most avian species when compared to baseline.
* Ongoing impacts to avian species are expected to continue after repowering.
* Impacts to avian species from operations are considered *significan*t and unavoidable in the Draft PEIR for the program and specific projects, considering the commitments of the 2007 Settlement Agreement, and ongoing impacts which may be inconsistent with other laws and regulations.
  * Mitigation measures are available to reduce, but not eliminate, the significant impact.

* Request SRC's input on the evaluation of the program and project specific avian impacts, particularly comments regarding:
  * Assumptions used
  * Methodologies used
  * Mitigations proposed

# Comments or Questions?