NOTES | 5/8/2007 Conference Call
Altamont Pass Wind Resource Area Scientific Review Committee
Reviewed and Final SRC Approval on 12 June 2007

Follow-Up from 24 April Board of Supervisors Meeting

The Board approved funding for one additional year of the three-year monitoring program (the Board previously funded 6 months of monitoring). The SRC discussed concerns about only funding one year of the remaining 2.5 years of monitoring. The SRC is concerned that if funding is curtailed, a gap in monitoring could occur or no one will be available to analyze the data. The potential implications for stopping the monitoring are significant.

The contract will run May 2007 to May 2008. The settling parties will begin exploring additional funding sources immediately and hope to have funding in place prior to the end of the one year contract to ensure continuation and continuity of the three-year monitoring program. The parties are considering Prop 84 and the CEC. Although the PIER program doesn't fund monitoring, the burrowing owl and American kestrel or the pylon study might be eligible.

- ✓ **November 2007** marks the end of year one of the settlement.
- ✓ **December 2007** would be the six-month mark into the one-year monitoring budget.

Public Comment
Joanne Stewart: Please continue to share ideas for funding sources.

Pylon Study Details

In discussion with the SRC, Joanne Stewart has begun investigating the cost of installing pylons to conduct a behavioral study to determine if pylons act as a flight deterrent. End-row turbines are associated with a higher risk of bird fatality. The concept is that birds would fly around the pylon placed at the end of a turbine string causing them to fly safely, further from the turbine string. While developing the cost estimate, Stewart located some recommendations on pylon placement in the CEC Smallwood & Thelander August 2004 Study (page 344).

The SRC and Joanne Stewart, FPLE, confirmed the following assumptions for determining the cost estimate.

Assumptions for Cost Estimate for Pylon Construction

- Pylons both 80 and 100-feet tall
- Assume they will be paired on the existing pads, or closer to the turbine if the slope permits
- The top of the pole would have a cone to prevent perching
- No guy wires
- Assume two poles at each location
- 4, 10 and 20 sites

Study Factors

The SRC discussed many factors of the potential study without coming to conclusion on many of them. They are discussed here and will be considered again in the future.

Height

- 60 foot tower and 30 foot blade at 12 o'clock = 90 foot
- 80 or 100 feet above the ground depending on the slope or elevation of the pad relative to the turbine next to it.
- FACTOR-Does the SRC recommend hub height or to the tip of blade. If close to the turbine, hub height might be acceptable. If further away, pylon may need to be blade height so birds notice it.

Location

The pylons would be built in a location in which a tower has been removed. In these sites, a flat pad and a road to the site exist, which will make construction easier. Although notes from the April 2007 SRC meeting said the pylon would be ideally placed one turbine spacing away, the CEC August 2004 Study (page 344) recommended that poles be placed 5-10 meters from the turbine just beyond the rotor plane. The pylons should go in areas where birds are commonly present for the purpose of the experiment. The location does not have to be in areas with known fatalities although mortality is an indicator of bird presence.

The SRC and the companies will have to work out the details of the location of the pylons.

- FACTOR- Location will vary based on the slope.
- FACTOR-CEC 2004 study was criticized for lack of randomization. If the pylon study goes forward, the SRC and companies may want to initially select multiple potential sites throughout the wind resource area and then randomly select those used for the study.
- INFO REQUEST- Stewart would like locations to be identified with assistance of the SRC.
- FACTOR- How close would the two poles be together? The CEC August 2004 report recommends 5-10 meters apart.
- FACTOR- May want to intersperse the treatment so an observer can see multiple sites. Another cautioned that if strings are nearby each other, the observer will be documenting the same birds.

One or Two Pylons per Site

The SRC discussed briefly whether the same effect would be realized with one versus two pylons and that it might be good to test two pylons in one place and have one in other spots. For now, the SRC is considering two pylons per site for the initial study.

Sample Size

The SRC discussed different issues with the sample size and how to determine how many pylons to include in the study. The SRC discussed the possibility of starting with a preliminary study to indicate an effect. This would involve a small number of locations with concentrated behavioral observations. One suggestion was to have a grad student do the study all day for a few days a couples times per week to get a sense of behavior and then decide how to proceed.

The downside of this approach is that the preliminary study could result in pseudo replication because the observer would be documenting the same birds. Another concern is that the observer may not get enough data to evaluate behavior changes.

Brainstorm
The SRC brainstormed, but did not reach a conclusion, on options for the sample size, including:

- 3 sites, which provides some replication, but which also may be considered a 'pilot' study to assess the effectiveness of the program before installing additional pylons.
- 4 sites, two in proximity to one observation point – also discussed as an initial pilot study.
- 12-20 sites
- 10-15 sites
- 10 sites
- Consider the number of hours observed as a component of sample size

The SRC also discussed examining existing behavioral data for 30 minute and 60-minute observations to evaluate the frequency of birds going around or through a turbine string.

Action Item: Shawn Smallwood to Evaluate Crossing Frequency by May 29

- Crossing frequency data. Recognizing that data are limited to a certain degree because the study was for a different purpose.
- Number of observation hours.
- Variance for each site (i.e. if talking about multiple 30-minute observation sessions, how much does the number of crossings vary across observation sessions. There may be an average of 3 crossings per session and then periodically there are 10 crossings.)

FPLE Credits

At the April SRC meeting, the SRC reviewed additional data that FPLE presented (P24a-c) as part of its request for credits for removing turbines prior to the settlement agreement in exchange for a settlement term requiring removal of Tier 1 & 2 turbines. The SRC was unable to reach consensus on granting credit. Three SRC members supported granting the credit with agreement from FPLE to remove an additional 9 Tier 1 turbines, 6 of which were associated with known fatalities. One SRC member supported granting credit with linkage to an additional management action (installation of pylons at 2 or 3 locations). And, one SRC member was unable to support the credit because he was concerned about achieving the 50% mortality reduction and because he was concerned about the technical basis for the selection of turbines that were shut down or moved.

Upon further examination, the SRC had some additional questions with regards to how FPLE applied its criteria to remove the turbines and the dates of shut down and removal. One SRC member recommended that everyone review in detail the map provided by FPLE to see where FPLE removed turbines. FPLE's removals in the middle of a string ultimately created 2 additional end-row turbines or gaps. Another SRC member noted that if FPLE had removed the Tier 1 & 2 turbines, this removal would have also created 2 gaps. One SRC member raised the question about the benefit of removing end-row turbines because removal ultimately creates another end-row turbine. Smallwood, who co-authored the tiered classification document, clarified that removing the high risk turbine often reduces the slope and the risk. The intent of the tiered classification was to serve as guidance in conjunction with applying professional judgment on which turbines to remove to avoid creating additional high risk end-row turbines.

FUTURE AGENDA ITEM. The SRC might be able to provide some guidance on applying the tiered removal, explaining the judgment in advance about the approach.

Follow-Up: Facilitator Gina Bartlett will work with the SRC to identify additional questions on the FPLE credit and forward them to Sandra Rivera who will then communicate them to FPLE. The SRC would like to discuss this again on May 29 if FPLE has the additional information available.

Potential June SRC Agenda Items

The SRC is planning a June 11-13 meeting and identified the following topics as discussion items:

- Data analysis from first 6 months of monitoring
- Blade painting proposal
- Pylons study
- Lindsay Museum follow-up
- Repowering evaluation—Year 2 Data for Diablo
- Possible mitigation measures: Winter shutdown (timing of shutdown / habituation (check with Wally). which months and how long). Rock piles. Association data.
- Siting: arrangements & clustering (spatial statistical models (Yee to provide literature)). Fatality data and behavior data, in CEC August 2004 Study, behavior chapter
- Update on funding
- Reconsideration of Tier Classification / Risk Assignment
- Power output data (what's available)
- Revisit field protocols; report on how data's being collected-Brian Walton. Choosing new observation points.