

Background for SRC on 50% Avian Mortality Reduction Determination

Produced by the Center for Collaborative Policy
Dec. 1, 2012

This memo provides background information and context for the SRC's determination on whether a 50% reduction in avian mortality has or has not occurred.

Origin of this Requirement: The Adaptive Management Plan (*Exhibit G-1 Addendum Adaptive Management Plan Adopted 3-10-11 (S32)*) adopted in March 2011 sets out the requirement that the SRC make the determination as to whether, by September 30, 2012, a 50% reduction in raptor mortality has been achieved.

Impacts of SRC 50% Determination:

1. If a 50% Reduction is Determined to Have Been Achieved:

Such a determination would eliminate the potential need for AES/SeaWest (turbines now owned by FloDesign/Forebay Wind) and enXco (now known as EDF Renewable Energies) to remove additional turbines in coming months. How the determination would impact the level of effort of the Monitoring Program going forward is not clearly laid out in the Adaptive Management Plan; Alameda County is in discussion with the Settling Parties on this issue.

2. If a 50% Reduction is Determined Not to Have Been Achieved:

- The Adaptive Management Plan sets out that, if by September 30, 2012, a 50% reduction in raptor mortality is not achieved, SeaWest and enXco shall cease by February 15, 2013 operation of 25% of Applicable Turbines and permanently remove them. The determination would not impact NextEra or AWI.
- Under the Adaptive Management Plan, the SRC is to use its best efforts to prioritize additional adaptive management measures by the end of 2012 to update the Adaptive Management Plan.
- By April 1, 2013, the settling parties will propose Plan updates to Alameda County. The County will then consult with the SRC and make Plan updates by the end of June 2013.

Specifics on Measuring the 50% Reduction:

In 2010, the SRC and Monitoring Team developed a rolling average method of measuring the 50% reduction (see SRC AMP recommendation in *P170_SRC Meeting Summary June 2010* and *July 2010 M55_New Baseline Memo*):

The SRC would recommend shifting the methodology to measure 50% reduction for the purposes of this monitoring program. The 50% reduction should be evaluated annually by comparing mortality estimates between:

- 1) a recommended new baseline defined using the first 3 years of the current monitoring program (bird years 2005-06, 2006-07, 2007-08), and

2) A running average based on the last 3 years. For example, at the end of 2010, the average of bird years 2007-08, 2008-09, and 2009-10 would be compared with the recommended new baseline.)

SRC Decision-Making:

As noted in your Charter, the SRC strives for consensus in all of its decision-making, meaning all members support or can live with the decision or overall direction. In some cases, a member may “stand aside” by verbally noting disagreement, yet allowing the group to reach consensus without him or her if the decision keeps the SRC moving forward. If 100% agreement among all five members cannot be reached after thorough discussion of all interests and options, the SRC will forward its recommendation with a full explanation of the area of disagreement to the Planning Director.

Document Language Related to 50% Determination

A. Adaptive Management Plan (S32, Exhibit G-1)

Requirement for SeaWest and enXco to remove 25% of their turbines if 50% is not achieved comes from the Adaptive Management Plan (S32, Exhibit G-1) adopted in March 2011:

“6. Repowering, Including Careful Siting of Turbines

....

(ii) SeaWest. If and only if by September 30, 2012, a 50% reduction in raptor mortality is not achieved, SeaWest shall have ceased operation of and permanently removed 25% of its Applicable Turbines by February 15, 2013. The denominator for this equation is the number of Applicable Turbines on the date of the CUPs (2005) and does not include turbines or towers located on the Santa Clara site. Any Applicable Turbine removed since the date of the CUPs counts toward the 25% reduction required under this provision.

(iii) enXco. If and only if by September 30, 2012, a 50% reduction in raptor mortality is not achieved, enXco shall have ceased operation of and permanently removed 25% of its Applicable Turbines by February 15, 2013. The denominator for this equation is the number of Applicable Turbines on the date of the CUPs (2005). Any Applicable Turbine removed since the date of the CUPs counts toward the 25% reduction required under this provision.

(e) The SRC shall make the determinations in this Section 6 as to whether a 50% reduction in raptor mortality has been achieved by the dates specified above.

7. UPDATE OF ADAPTIVE MANAGEMENT PLAN

(a) Updates to this Adaptive Management Plan will be implemented if a 50% reduction in raptor mortality is not achieved by September 30, 2012. The SRC will prioritize adaptive management measures, including an evaluation of management measures that have not reduced raptor mortality at the expense of energy production, after analyzing field monitoring data. The SRC shall use its best efforts to achieve it prioritization of management efforts by January 1, 2013.

(b) By April 1, 2013, Settling Wind Power Companies and Audubon will propose updates to this Adaptive Management Plan to the County for review pursuant to Condition 7 of the CUP. Unless the Settling Parties agree upon and establish a new metric, the updates will be designed to achieve a 50% reduction in raptor mortality with the least impact on energy production, and may include the elimination or reduction of seasonal shutdowns. If the Settling Wind Power Companies and Audubon are not able to agree upon updates to the Adaptive Management Plan, they shall submit separate update proposals to the County by April 1, 2013.

(c) After receipt of the update proposal or proposals, the County shall consult the SRC and, after considering the SRC’s recommendations, the County shall act (pursuant to

Condition 5 of the CUPs, as necessary) on the updates to this Adaptive Management Plan by July 1, 2013.”

SRC Agreements Related to 50% Reduction Determination

(Items in reverse chronological order)

Baseline for Avian Mortality Analysis

(July 2010 Meeting Summary P182)

[M55_New Baseline Memo](#)

Assumptions for Measuring SRC-Recommended Baseline

The SRC reviewed the Monitoring Team's memo on approaches to measuring the SRC-recommended new baseline (M55 New Baseline Memo). The SRC supported the memo's approach with the following changes:

- Develop an approach to representing baseline installed capacity that gives credit for significant changes on the ground through hazardous turbine removal, attrition and repowering, to most accurately represent the pre-management action baseline environment. Turbine removals to be accounted for would be the Flowind turbines, Buena Vista, Howden and Kenetech turbines....
- To address refinement of the 3-year-average baseline, the SRC recommended a process, modeled on Shawn Smallwood's methodology used for the Tres Vaqueros turbines, and suggested that the settling parties identify which operating groups would be the focus of credit actions. SRC recommends patching best available rates for the larger groups only: Flowind, Buena Vista, Kenetech, and Howden.

(June 2010 Meeting Summary P170, and P167, SRC Consensus Recommendations on Adaptive Management Plan Proposal)

Adaptive Management Proposal

Methodology for Measuring 50%

The SRC would recommend shifting the methodology to measure 50% reduction for the purposes of this monitoring program.

The 50% reduction should be evaluated annually by comparing mortality estimates between:

- 1) a recommended new baseline defined using the first 3 years of the current monitoring program (bird years 2005-06, 2006-07, 2007-08), and

2) A running average based on the last 3 years. For example, at the end of 2010, the average of bird years 2007-08, 2008-09, and 2009-10 would be compared with the recommended new baseline.

The 50% reduction should be evaluated separately for the four focal species.

The recommended new baseline (2005-2008) is considered to have had similar fatality conditions as the original baseline period (1998-2003), and the recommended new baseline does not rely on assumptions about the uneven sampling in the original baseline study. To the extent possible, the recommended new baseline will be adjusted upward to offset reductions from mitigations occurring between 2003 and 2008, for the purpose of better representing the baseline period.

Each year that the 50% reduction is not met, then the SRC will recommend management actions determined to most effectively reduce fatalities, at a level commensurate with the remaining difference. In order to inform the SRC's recommendations, the County should provide complete information on the management actions conducted to date (i.e. when, where, and which turbines removed or relocated).

The SRC recommends that the metric for measuring a 50% reduction be scaled by bird abundance, as soon as bird abundance data are available.

(Oct 2009 Meeting Summary P139)

Suitability of Baseline

The SRC does not think the "1300" settlement baseline is suitable to measure a 50% reduction. Among the reasons are:

- The 1300 number was defined in the Settlement Agreement as being for **all** raptors, while the current study focuses on 4 focal raptor species.
- The baseline study used a different methodology for calculating mortality.
- 1300 was the upper end of a range of estimates in the study at that time, not a point estimate.

(Oct 2009 Meeting Summary P139)

Criteria for Including Strings in the 50% Fatality Reduction Analysis

1. Length of monitoring is greater than or equal to one year's worth of contiguous data
2. That period spans at least each of all four seasons
3. At least six searches per bird year
4. Average search interval is 0-60 days

SRC Consideration of Installed vs. Permitted Capacity

A question was raised at the November 19, 2012, conference call meeting about whether the fatality analysis is to be conducted with both an installed capacity and permitted capacity metric. The Center reviewed SRC meeting summaries and documents to clarify the SRC's direction on this issue.

The SRC's direction for the 2005-2009 Monitoring Report, which compared the current study period with the baseline study period, was that the Monitoring Team would develop estimates for both permitted capacity and installed capacity during the baseline period (*P181_SRC Call Notes 6-29-10*). (The report, *M21_Monitoring Report*, ended up using only permitted or "nameplate" capacity for the analysis, stating that "The uncertainties regarding the timing of some turbine removals made mortality rates based on maximum nameplate capacity a better metric than installed capacity for assessing changes in total fatalities between the two study periods.")

Then, at its December 2010 meeting, the SRC again took up the question of installed vs. permitted capacity metrics for per-string analysis and expansions used in future monitoring reports. The Monitoring Team made a presentation that described the various biases of different approaches and described an example of bias using permitted capacity (see M63 for PowerPoint presentation). The SRC did not reach 100% consensus; three SRC members indicated support for using only installed capacity for both calculations in future reports. One SRC member supported the previous SRC recommendation to use both approaches. Another SRC member indicated support for showing both ranges to illustrate that different approaches would produce different biases in possibly opposite directions (*P196_SRC Meeting Summary December 2010*). Since that time, monitoring reports (*M73_2005-09 Monitoring Report*, *M87_2010-11 APWRA Final Bird Fatality Report*) have used installed capacity.

Excerpt from meeting summary P196:

Jesse Schwartz of the Monitoring Team sought a recommendation from the SRC on whether to use nameplate (also referred to as "addresses," "full nameplate," "permitted" or "permitted built capacity") versus installed capacity for two analyses, the fatality per megawatt calculated on a per-string basis and the expansion of fatality data from monitored turbines to the full Altamont Pass Wind Resource Area to develop an estimate of avian mortality for the entire area.

"Nameplate" is defined as full capacity assuming that all the permitted turbines are present and functional. He referred to a table in the PowerPoint presentation that lays out potential biases for each approach, and advocated for using installed capacity for both calculations, because this represents most closely the real situation on the ground. He provided an example using Contra Costa turbines, which showed that using addresses would result in a bias because no turbines that were monitored were removed, while a large number of non-monitored turbines were removed.

Three SRC members indicated support for using installed capacity for both calculations in future reports. One SRC member supported a previous SRC recommendation to use both approaches. Another SRC member indicated support for showing both ranges to illustrate that different approaches would produce different biases in possibly opposite directions.