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California Energy Commission
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RE: Docket No. 06-OII-1
1516 Ninth Street
Sacramento, CA 95814-5512

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DATE	JAN 23 2007
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Subject: Developing Statewide Avian Guidelines

Dear C. E. C. Staff,

I was quite impressed with the comprehensive, well-reasoned, and informative document that is your *Draft* Statewide Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (Guidelines). Through the combination of your careful review of the science to date and the organized and well-written presentation of your recommendations, you have ensured that the regulatory entities have the information they need to evaluate and mitigate, as necessary, impact to bats and birds from wind energy facilities. I have reviewed the entire document carefully, but my comments are limited mostly to sections on bats as this is where my greatest interest and expertise lies.

Scientific Advisory Committees. Though it is not a primary recommendation of this document, I support the formation of a state-wide Scientific Advisory Committee as proposed on page 7. As you know, expertise in the area of bird and bat impacts from wind energy development is limited. Thus, although well-intentioned, the notion of project-specific Scientific Advisory Committees seems unrealistic. Where would credible, expertise come from? A state-wide committee would be more effective and efficient, especially if one of the goals is to design pre-permitting and operations monitoring programs that are similar enough such that data from multiple facilities can be pooled to begin to compare levels of impacts statewide.

Sample points within a study. The guidelines specify the density of sites where bird use counts (BUC) should be conducted within a project area. However, the guidelines do not provide similar guidance for the number of acoustic monitoring devices that should be employed to adequately survey bat use. This topic is not well understood, though it is clear that bat activity is quite variable over space and time. The recommended densities of BUC areas: 1 per turbine in small projects, 40% in medium projects, and 30% in large projects (p. 14) are a reasonable estimate for the number of acoustic monitoring devices required to describe spatial patterns of bat activity within the site. Research, which sub-samples from a large number of acoustic monitoring devices, would help define appropriate densities for future projects.

Pre-permitting vs. operations monitoring. The guidelines recommend a full year of pre-permitting studies but two years of operations monitoring. The justification for 2 years of operations monitoring is to account for inter-annual variation (p. 39). This same rationale

should apply to pre-permitting surveys. For instance, if the single year of pre-permitting studies is atypical, by chance, then monitoring during operations may appear to indicate an impact, when in fact none has occurred. If the apparent impact is negative, it could result in project proponents being responsible for additional operations monitoring. A more straightforward and efficient approach would be to better understand patterns of use during pre-permitting.

Operations Monitoring after 2 Years. A *minimum* of two years operations monitoring is a reasonable level. However it is not clear that 2 years is enough time to determine “normal” impact levels. For instance if the number of fatalities increased between Year 1 and Year 2 of an operations monitoring program, what should we expect in Year 3? I recommend that every facility should conduct periodic (e.g. every 5 years) operations monitoring to verify that impacts continue to be within a range expected after 2 years of monitoring. For facilities where impacts are considered high after 2 years, more frequent monitoring (e.g. annually) may be necessary. .

Environmental co-variates. The Guidelines emphasize collection of bat and bird activity and mortality levels while de-emphasizing the collection of environmental or other potentially explanatory variables. The section on operations monitoring suggests that analyses evaluate correlations between mortality and environmental and turbine characteristics (p. 47). However, the manner in which it is presented has the effect of suggesting that these correlative analyses would somehow be “extra credit”. The importance of these covariates should be emphasized throughout the Guidelines. The stated goal of the Guidelines is reduction of bird and bat collisions with wind turbines. If bird and bat activity and mortality over time is the only information gathered, we will only understand the extent of impacts from the facility. If instead, we hope to both promote wind energy development and reduce impacts to birds and bats, we must gain a better understanding of the conditions under which mortalities occur; only then will be able to test methods for reducing impacts. A key first step is to generate a comprehensive list of environmental and turbine variables that may help explain collisions and recommend their regular collection at each project.

As stated in my introduction, I feel the Guidelines are an excellent piece or work. I would be satisfied if the Draft Guidelines were to become the Final Guidelines. Nevertheless, I hope you will consider incorporating my suggestions.

Respectfully,

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