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May 4, 2007

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 06-OII-1  
1516 Ninth Street  
Sacramento, CA 95814-5512

<b>DOCKET</b> 06-OII-1	
<b>DATE</b>	MAY 04 2007
<b>RECD.</b>	MAY 10 2007

To Whom It May Concern:

Below are EDM's comments to the California Energy Commission and California Department of Fish and Game draft guidelines for evaluating wildlife impacts from wind resource area (WRA) development. In general, the document is very well thought out and presented, and outlines reasonable guidelines for studying potential wildlife impacts. Based on our review, however, the following edits are suggested.

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Bird Use Counts and the Morrison Avian Fatality and Risk Protocol: Recording data and determining zones as in the Morrison protocol (Morrison 1998) is invaluable for smaller sites, but maybe not practical for larger sites; there is some minimum number of visits to each turbine that are necessary to provide data for the ANOVA tests required with the Morrison protocol.

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Spacing of Bird Use Count Observation Points: The recommended spacing 5200 feet is somewhat arbitrary and makes assumptions about WRA size and configuration. These assumptions may be compatible with large WRAs that have a good viewshed, but may not be suitable for areas with more varied topography or for smaller WRAs where following this guideline may mean that only one observation point is used. When possible, every turbine location should be observed; it is not possible to determine passage rates through various zones as in the Morrison protocol when multiple turbine locations are being observed. In these situations the best that can be done is to classify birds by flight height, which removes the possibility of evaluating micro-siting based on location-specific data, although micro-siting could possibly still be extrapolated based on height and topography as in Smallwood and Thelander (2004). These spacing recommendations be modified to remove specific distance recommendations and make the guidelines more generally applicable to preconstruction surveys on all potential WRAs.

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Detection functions and Sample Size: The guidelines recommend at least 100 observations for distance sampling analysis; Buckland et al. (2001) recommend 60-80. It is important to mention, however, that species that are observed individually but also occasionally in large flocks are problematic and may require a larger sample size than either you or Buckland et al. recommend to fit a reasonable detection function. These species cannot be analyzed in distance as flocks, because many observations were of individuals, yet the flocks cannot be ignored as they represent too large a proportion of the data. The distance histograms for these species have heaps and gaps, and larger sample sizes may be required to "smooth out" such anomalies in the data.

Thank you for the opportunity to comment on the draft guidelines. Your efforts to provide needed guidance to wind developers, consultants, and regulatory bodies are greatly appreciated.

Sincerely,

A handwritten signature in black ink, appearing to be 'JB' with a stylized flourish extending to the right.

Jon Belak

References:

Buckland, S.T., Anderson, D.R., Burnham, K.P., Laake, J.L., Borchers, D.L. and Thomas, L. 2001. Introduction to Distance Sampling: Estimating Abundance of Biological Populations. Oxford University Press, Oxford, UK.

Morrison, M., Avian Risk and Fatality Protocol, National Research Energy Laboratory, Golden, Colorado, NREL/SR-500-24997, November 1998. Available at <[www.nrel.gov/docs/fy99osti/24997.pdf](http://www.nrel.gov/docs/fy99osti/24997.pdf)>.

Smallwood, K. S., and C. G. Thelander, Developing Methods to Reduce Bird Mortality in the Altamont Pass Wind Resource Area, California Energy Commission Public Interest Energy Research Program final project report, CEC-500-2006-114, prepared by BioResource Consultants, August 2004. Available at <[www.energy.ca.gov/pier/final\\_project\\_reports/500-04-052.html](http://www.energy.ca.gov/pier/final_project_reports/500-04-052.html)>.