PPM Energy
A ScottishPower Company

DOCKET	
06-OII-1	
DATE	Oct 3 2006
RECD.	Oct 04 2006

October 3, 2006

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

Subject: Docket No. 06-OII-1: Developing Statewide Avian Guidelines—Post-Construction Monitoring

Dear Commissioners and Staff:

PPM Energy (PPM) appreciates the opportunity to comment on Docket # 06-OII-1, Guidelines for Reducing Bird and Bat Impacts from Wind Development in California. As one of the most active owners and developers of wind projects in California and other states, we have both direct interest in the outcome of the proceeding as well as relevant experience from project development in other parts of the country.

Many of our general concerns have been addressed via comments from the Center for Energy Efficiency and Renewable Technologies, which PPM has had a role in drafting. This letter focuses on a specific technical issue which has come up in the last two workshops—the value and scope of post-construction bat and bird mortality monitoring.

PPM recommends consistent post-construction mortality monitoring that can be used to compare projects within California and in other regions. It is ironic that fewer wind projects in California have conducted post-construction monitoring using the current monitoring protocols than in other states. We believe that regularly conducting post-construction avian and bat monitoring at new projects will help develop a database of wind project wildlife impacts for California, and we hope, will help (1) build the case that in most locations, wind energy's impacts on birds and bats is low and (2) help us develop knowledge that will allow us to reduce wildlife impacts even further.

PPM has conducts post-construction monitoring at most of our projects, and has therefore gained some experience with the range of approaches and costs for such monitoring. I reviewed the scopes and budgets of seven monitoring programs at PPM projects in California, the Pacific Northwest, the Midwest, and Northeast. For those seven projects, sample size ranges from 25% to 100% of the

turbines. Frequency ranges from monthly to twice a month (plus one project, our Maple Ridge project in New York, where various subsets of the turbines are being sampled at intervals ranging from once a month to daily, in order to evaluate optimal survey interval). All monitoring programs address bird and bat mortality, and include searcher efficiency and carcass removal trials. The duration of the monitoring program varies from one year to three years.

For those seven monitoring programs, annual costs range from approximately $65,000 to approximately $415,000 for various sized wind projects. Standardized to "cost per 100 MW," costs range from approximately $43,000 to approximately $207,000 per 100 MW per year. Clearly, post-construction monitoring can be a very significant project cost, and the range of possible costs is directly related to key monitoring program variables.

Key variables affecting cost and confidence in monitoring results include:

- Sample size (the number of turbines sampled)
- Sample frequency (weekly, biweekly, monthly, or some mix of frequencies)
- Plot size (normally this should cover a circular (or squared-off) area with a radius equal to blade tip height
- Number of searcher efficiency and carcass removal trials

The intensity of monitoring (that is, sample size, frequency, etc.) should be a function of the type of question that the monitoring aims to address. The most basic question--overall project avian/bat mortality--can be addressed with a fairly modest level of monitoring. Teasing out factors contributing to mortality, such as mortality by avian group, or mortality compared to weather or turbine location, requires more intense monitoring. An irony of statistical sampling is that the lower avian/bat mortality is expected to be at a site, the larger the required sample size to gain equivalent confidence in the results.

At most recent projects around the country, avian mortality has been relatively low—substantially lower than the raptor and all-bird mortality observed at Altamont. While bat mortality has proved to be higher at some Northeastern sites, bat mortality numbers have been low at sites for which mortality monitoring has been completed at sites in the Pacific Northwest and at the High Winds site in Solano County (the only site in California that I am aware of for which results are available from bat mortality studies using current protocols). Because we expect bird and bat mortality to be relatively low at most new sites, PPM recommends that most new projects be required to provide a year or two of bird/bat mortality monitoring at a fairly basic level, to confirm low mortality. By "basic," we mean sampling ¼ to ½ of the turbines, on a biweekly or monthly basis (and of course, conducting carcass removal and searcher efficiency trials). If this initial survey indicates that mortality is unexpectedly high, more focused surveying could be required, potentially requiring greater sample frequency and size.

For projects located in areas where avian/bat mortality monitoring has been conducted for nearby projects in similar habitats, and has shown low bird/bat mortality, post-construction monitoring for new projects (if required at all) should be limited to no more than a year or two of monitoring to confirm that the new project is consistent with past results.

Some stakeholders have expressed concerns that major mortality events may be associated with rare weather or migratory events that happen only every few years. They argue that formal monitoring should continue for several years in order to cover such rare events. PPM suggests an alternative, more cost-effective approach to these possible rare events. At all our projects, we will train our wind project operators to record and report all avian and bat mortality that they observe at the project. This on-going "incidental" monitoring will continue for the life of the project, and will identify any significant mortality events or mortality of individual birds protected by state or federal Endangered Species Acts.

We appreciate the opportunity to comment on what is an important, but also potentially quite expensive, element of wind project development.

Sincerely,

PPM Energy, Inc.

Andy Linehan
PPM Energy Wind Permitting Director