batcon.org
BAT CONSERVATION INTERNATIONAL

February 23, 2015

California Energy Commission Dockets Office
MS-4 Docket No. 09-RENEW EO-01
516 Ninth Street Sacramento, CA 95814-5512
docket@energy.ca.gov

To whom it may concern,

Bat Conservation International (BCI) appreciates the opportunity to provide input on the the Desert Renewable Energy Conservation Plan/Environmental Impact Statement (DRECP/EIS). BCI's mission is to conserve the world's bats and their ecosystems to ensure a healthy planet. The DRECP provides habitat for nearly half of the 45 bat species known from the U.S. and Canada. BCI has had a Memorandum of Understanding with the BLM for almost two decades and we continue to work with the BLM's National Office and State and Field Offices to integrate bat conservation and BLM resource stewardship goals.

In general, in order to ensure the continued viability of bat populations in the DRECP planning area, there are two primary categories of effects from the development of wind and solar facilities that need to be evaluated. The first category is impacts to bat habitat, especially roosting habitat, foraging habitat, and drinking habitat (water sources). The second category is direct impacts to individuals, in this case direct mortality from collisions with wind-turbine blades. The bats selected to be "Covered Species" under the draft DRECP; the pallid bat, California leaf-nosed bat, and Townsend's big-eared bat, all non-migratory, subterranean or cavity-roosting bats with agency sensitive species status and are all sensitive to habitat impacts, but are rarely killed by wind turbines. In contrast, the hoary bat, a migratory tree-roosting species evaluated but not selected as a Covered Species earlier in the DRECP planning process (ISA 2010, ISP 2012) has no special state or federal status, but is the primary bat species killed at wind farms in California and nationwide. The western red bat, another migratory tree-roosting bat found in the DRECP planning area is a BLM and Forest Service Sensitive species and California Species of Conservation (CSC) that has been recorded as killed at California wind energy developments. For this reason, we will focus the majority of our comments on Avoidance and Minimization Conservation and Management Actions and Monitoring and Adaptive Management programs for Covered Activities that can be strengthened in the DRECP/EIS to address direct fatalities to these and other migratory bats.

First and foremost, we recommend adding the hoary bat, *Lasirus cinereus*, and the western red bat, *Lasiurus blossovelli*, both migratory species, and the latter a California CSC, to the Proposed Covered Species List, Table 1.3-1 and Preferred Alternative Table II.3-2. An estimated 1.7 million bat fatalities were associated with wind energy development in the U.S. and Canada between 2000 and

2011, and the great majority of these included hoary bats and red bats. We feel that the single biggest stressor and threat to bats posed by the management actions across all alternatives in the DRECP/EIS is direct mortality to migratory bats from wind turbines. Even without the Biological Goals and Objectives, Conservation and Management Actions, and Compensation for the Impacts of Covered Activities Operations on Covered Birds and Bats, the impacts to all three of the currently designated proposed Covered Species of bats from the Covered Activities would likely be less than the cumulative impacts of wind turbines on migratory bats, none of which are currently proposed Covered Species.

The most effective way to reduce the impact of wind energy development on bats in all of the natural communities in the Plan Area would be to implement the following Plan Wide CMA's, Plan Wide Landscape Level Avoidance and Minimization Conservation Actions (AM-PW, AM-LL), Standard Practices, and project-specific bird and bat operational actions for Covered Species and MAMP during the planning, construction, operations, retrofitting or repowering, and decommission of wind power facilities, regardless of location within the DFA's and Plan Area.

1) During the siting process:

i. Use available data from state and federal wildlife agencies, NGOs, and pre-construction surveys to avoid high risk areas for bats.
ii. Features that may attract high bat concentrations include, but are not limited to: forests or woodlands, wetlands, riparian zones, playa lakes and other water bodies, exposed cliffs, caves, karst formations, abandoned mines, abandoned buildings and connectivity between habitats.
iii. Avoid siting near bat hibernacula, breeding colonies and maternity roosts, migration corridors, commuting and foraging areas.

2) Reduce, to the greatest extent practicable, the direct and indirect impacts to bats during all phases of development and operations

a. Limit the amount of disturbed areas during construction, including roads, power lines, infrastructure, and wind turbines.
b. Site turbines to avoid separating Covered Species and CSC from their daily roosting, commuting and foraging areas. For example, avoid placing turbines between roosting areas and major water sources.
c. Minimize lighting at operations and maintenance facilities within a half mile of wind turbines to limit attracting insects.
    i. Use lights with motion or heat sensors to keep lights off when not required. This includes adding safety measures to prevent internal turbine lights from being accidently left on.
    ii. Lighting for operating and maintenance buildings should be hooded downward and directed to minimize horizontal and skyward illumination.
    iii. Limit high intensity lighting or steady burning lights, such as sodium vapor, quartz, halogen or other bright spotlights.
d. Wildlife habitat enhancements or improvements, such as ponds or other water sources should not be created or added to the wind energy facility. These enhancements may attract bats thus increasing their risk of interacting with the wind turbines. If necessary, they should be sited as far away from turbines as possible.

3) Conduct scientifically-credible monitoring studies during all phases of development.
    a. Assess species presence, activity levels, and patterns of activity prior to construction. Methods for pre-construction monitoring may include acoustic detectors, radar, mist-netting, and colony counts at known roost sites.
        i. Conduct a minimum of 1 year of pre-construction monitoring.
        ii. The timing of surveys should coincide when bats are active in the area or year round if there is limited data for an area.
        iii. Deploy monitoring stations among different habitats across the proposed project area to assess differences in habitat selection among species and time of year. Multiple stations per habitat type is preferable to increase replication of sample sites.
        iv. When using acoustic detectors, position microphones at ground level (at least. 1 to 2 meters above ground level) and within the rotor-swept zone. Microphones should be mounted on existing structures, such as meteorological towers within the proposed project area.
        v. Relate bat activity (i.e., and if possible, species specific bat activity) to weather conditions (e.g., temperature, wind speed, barometric pressure, etc.).
    b. Examine the impact of turbines on bats once the facility is operational. Methods for post-construction monitoring may include, fatality searches, acoustic detectors, radar, and thermal imaging.
        i. Conduct a minimum of 2 years of post-construction monitoring.
        ii. The timing of surveys should coincide when bats are active in the area or if data are limited, surveys should occur year round.
        iii. For fatality monitoring, select turbines at random or via a systematic random approach.
        iv. Fatality monitoring should be conducted at a minimum of 30% of turbines at the facility. If the facility contains less than 30 turbines, monitor at least 10 of the turbines.
        v. Establish a search plot at least ½ the height of the turbine with at least part of the plot extending out to the height of the turbine
        vi. Using a GPS, define the searchable area and identify the different visibility classes within each plot.
        vii. Delineate transect lines, within the plot, no further than 6 m apart.
        viii. Search turbines at least on a 3-day interval. More frequent searches may be required if the carcass removal rate is high, or if required by the proposed study objectives. Daily searches also may allow for the greater recovery of ‘fresh’ (i.e., determined to have died the previous night) carcasses, which can be related to weather patterns, thus providing data to help understand risk and refine minimization strategies.
        ix. Conduct searcher efficiency and carcass removal bias trials in different visibility classes.
        x. Calculate the density-weighted proportion of carcasses.
        xi. Account for biases and density-weighted proportion in fatality estimation.
        xii. Relate turbine operation and weather patterns to fresh fatalities.

2) Feather blades below the manufacturer’s cut-in speed (i.e., the speed at which turbines begin generating electricity) during periods when bats are active.

3) Implement scientifically-proven minimization strategies, such as operational minimization during periods of high risk to reduce bat fatalities and the potential take of sensitive species at wind turbines.
    a. Consult with BCI, or state and federal agencies to determine the best minimization strategy for the species occurring in the area.

4) Disseminate all data and reports to the public to assist with large-scale regional analyses and/or to help refine future BMPs.
    a. Submit data to existing databases (e.g., American Wind Wildlife Institute's Research Information System, and reports to the Bats and Wind Energy Cooperative's website.

In addition, in Vol. II on page II.3-59, Bat Covered Species (BAT), AM-DFA-BAT-1, "Wind Projects will not be sited within 0.5 mile of any occupied or presumed occupied maternity roost." The distance should not be set at .5 miles, but should be based on an average foraging or commuting distance for the species in question, based on research conducted on the same species, in similar habitat.

Regarding a MAMP for the bat Covered Species (II.3.1.3.4), I have attached an appendix that describes a new USGS-led, interagency bat population monitoring effort, NABat. NABat is the first ever statistically rigorous, continental bat monitoring effort to detect local, regional, and continental trends in bat populations. In addition to local colony counts, this will allow DRECP natural resource managers to effectively implement effectiveness monitoring for bats.

Thank you again for the opportunity to provide input during the public comment period for the DRECP/EIS and we look forward to continued involvement.

Sincerely,

Daniel Taylor
Director, Public Lands Program
Bat Conservation International
4579 Louisiana Street
San Diego CA 92116
dtaylor@batcon.org

Appendix 1. North American Bat Monitoring Program: NABat

Background: Bats are the second most diverse group of mammals and are critically important to the maintenance of healthy ecosystems. Bats are voracious predators of insects, many of which are important agricultural insect pests. It has been estimated that bats provide approximately $23 billion worth of insect pest control in the U.S. per year. In addition to consuming huge amounts of insects, bats are also important pollinators and seed dispersers and serve as important models in medical research and aerodynamics. Bat populations have been declining for decades but recent threats such as White-nose Syndrome (WNS) and wind energy development have accelerated the declines in the U.S. It has been estimated that at least 5 million bats have died from WNS since 2006, but it is difficult to document the extent of these declines and their impacts on agriculture and forestry because there is no coordinated program to monitor bats in North America. Therefore, scientists and statisticians from the several federal agencies and academia are currently developing a bat population monitoring program (NABat) that can be used to monitor trends in bat populations on state and national forests, parks, refuges, and private lands and provide trend data at the state, regional, and continental levels.

Objectives: 1) Provide the architecture for coordinated bat monitoring to support local, regional and range-wide inferences about trends in bat distributions and abundances in response to WNS, climate change, wind energy, and habitat loss. 2) Provide managers and policy makers with the information they need on bat population trends to effectively manage bat populations, detect early warning signs of population declines, and estimate extinction risk.

Progress to Date: Experts from state and federal agencies, academia, and non-governmental organizations in the U.S., Canada, Mexico, and the U.K have helped members of a core team develop a draft sampling design that can be used to monitor bats at the local, state or regional, scales through a series of three workshops. A database to house the data, the USGS Bat Population Data (BPD) Project has been developed in concert with the design of NABat. Input and comments on the draft plan and BPD have been solicited from members of the bat community at recent meetings including the International Bat Research Conference and the WNS Workshop. A pilot study to test some of the assumptions of the plan and assist in determining the most appropriate statistical analyses was initiated this summer and will continue in 2014. A document detailing the sampling design and the protocols to be used is currently being drafted.

Implementation of NABat: We envision that a Bat Monitoring Laboratory will be established that will be staffed by an International Coordinator, a statistical analyst, a database manager and perhaps a Citizen Science Coordinator, as well as administrative support. The Bat Monitoring Lab will provide guidance and support to state, federal, and tribal agencies as they establish their monitoring programs, house the data, and produce annual and multi-annual *State of North American Bats* reports.

Funding: Funding to develop NABat has been provided by the Landscape Conservation Cooperatives, the National Institute of Mathematical and Biological Synthesis (NIMBioS), and the U.S. Fish and Wildlife Service. Other support has been provided by the U.S. Forest Service, U.S. Geological Survey, and Bat Conservation International. Additional long-term funding will be required to staff and support the Bat Monitoring Lab.