

Defenders of Wildlife
Natural Resources Defense Council
Sierra Club
Center for Biological Diversity

December 13, 2010

Karen Douglas, Chair
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814
(Via Email to: publicadviser@energy.state.ca.us)

Re: Best Management Practices and Guidance Manual: Desert Renewable Energy Projects

Dear Ms. Douglas:

Thank you for the opportunity to provide comments and recommendations on the recently published report entitled Best Management Practices and Guidance Manual: Desert Renewable Energy Projects (“Manual”).¹ These comments and recommendations are submitted by the Defenders of Wildlife (“Defenders”), Natural Resources Defense Council (“NRDC”), Sierra Club and the Center for Biological Diversity. We are providing you with our comments and recommendations on this Manual in advance of and for consideration during the scheduled business meeting of the California Energy Commission on December 15, 2010.

Defenders is a national environmental organization with more 950,000 members and supporters in the U.S., 145,000 of who reside in California. Defenders is dedicated to protecting all wild animals and plants in their natural communities. To this end, Defenders employs science, public education and participation, media, legislative advocacy, litigation and proactive on-the-ground solutions in order to prevent the extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

NRDC is a non-profit environmental organization with 1.3 million members and online activists, more than 250,000 of whom live in California. NRDC uses law, science and the support of its members and activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things.

The **Sierra Club** is a national nonprofit organization of approximately 1.3 million members and supporters (approximately 250,000 of whom live in California) dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's

¹ Renewable Energy Action Team (California Energy Commission, California Department of Fish and Game, U.S. Department of Interior Bureau of Land Management, and Fish and Wildlife Service). *Best Management Practices and Guidance Manual: Desert Renewable Energy Projects*. California Energy Commission, Siting, Transmission and Environmental Protection Division. REAT - 1000 - 2010 - 009.

ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club's concerns encompass protecting our public lands, wildlife, air and water while at the same time rapidly increasing our use of renewable energy to reduce global warming.

The **Center for Biological Diversity** is a national nonprofit of approximately 315,000 members and on-line activists. At the Center for Biological Diversity, we believe that the welfare of human beings is deeply linked to nature — to the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, we work to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law and creative media, with a focus on protecting the lands, waters and climate that species need to survive. We want those who come after us to inherit a world where the wild is still alive.

We have serious concerns about nature and content of the Manual, especially because its use by the permitting agencies and renewable energy project applicants is only voluntary; and its primary purpose is to reduce the permit processing time rather than to provide meaningful and protection to the remaining significant natural and cultural resources in the California Desert. Our specific comments on the Manual follow.

From the Executive Summary, pages 1-4:

1. **Intent (Manual, page 1):** The intent of the Manual is to: provide recommendations to renewable energy developers, and federal, state, local, and tribal governments for improving the efficiency of the regulatory process in California and **protecting environmental and cultural resources**, and human health and safety. (Emphasis added in bold).

Comment: The Manual simply provides recommendations and is voluntary on the part of applicants and permitting agencies. Absent concrete changes in the manner in which the BLM, FWS and CEC accept and process applications for permits for large-scale solar and wind energy projects, the continued practice of BLM accepting right of way applications throughout the California Desert that involve relatively undisturbed public lands having significant biological resources and values will likely result in continued loss of these resources, and incremental and significant impacts to the integrity of the significant resources within the California Desert. The “lessons learned” from the initial round of “fast-track” projects appear to be few, if any, and there is no indication that the agencies are placing meaningful requirements on the location of “next-generation” solar and wind energy projects as a means of avoiding or substantially minimizing impacts. Indeed, the whole focus of this manual is on avoiding extended reviews of projects without acknowledging that the agencies actually possess the authority to deny poorly sited projects.

Comment: At the CEC Business Meeting held in Sacramento, California, on October 28, 2010, you commented on the then proposed Calico solar project located approximately 37 miles east of Barstow, California: “...some sites are easier than others to permit, and it’s absolutely in the interest of the State that we encourage Applicants and push Applicants, and continue pushing to go to the sites with fewer impacts in the first place, so we don’t have to do as much mitigation.” With regard to lessons learned with analyzing and considering “fast track” solar projects, you stated, “...the next round of projects has to

learn from this round, it has to bring us projects that don't require Commissioners to spend days and days and days and evidentiary hearing on impacts that might be avoided with different project proposals."

Recommendation: The Manual should include interim restrictions on the location of projects, and such interim restrictions should be consistent with the siting criteria recommended by numerous national environmental organizations (Manual, Attachment V). Interim restrictions are essential in maintaining the biological integrity of the California Desert pending completion of the Desert Renewable Energy Conservation Plan (DRECP). Interim restrictions are also essential to ensuring that projects with low resource conflicts can be permitted expeditiously and constructed with minimal controversy, thus establishing a foundation for broad public support for the DRECP and the federal solar program/Programmatic Solar Environmental Impact Statement (hereinafter "solar PEIS").

2. Exceptional desert resources (Manual, pages 1-2): "Exceptional and rare plants, wildlife, and habitat exist in the deserts. Many desert areas have culturally significant resources including rock outcroppings, vistas, Native American sites, and the dry remains of ancient lakes, which sometimes had prehistoric settlements near the shorelines. **Laws, regulations, and government policies protect these resources and human health and safety from development related adverse and unacceptable effects.**" (Emphasis added in bold).

Comment: "Lessons learned" from our experience with the "fast-track" projects in the California Desert indicate that current laws, regulations and government policies as implemented do not provide adequate protection of significant biological, cultural and scenic resources and values. Federal and State environmental analyses for numerous projects reveal that significant impacts will occur and that mitigation measures alone are insufficient to reduce the level of impact to less than significant. The CEC members often rely on "overrides" of required compliance with the fully-mitigated standard of CEQA because they found that impacts associated with many of the fast-track solar projects cannot be reduced to less than significant through mitigation.

Comment: Mitigation measures to minimize impacts to at-risk species and their habitats, such as the Desert Tortoise, Mojave Fringe-toed Lizard, Flat-tailed Horned Lizard, Golden Eagle and Desert Bighorn, are speculative in their ability to achieve meaningful reduction in impacts to these keystone species. Compensating for habitat loss due to projects, at ratios of 1:1 to 3:1 result in a net loss of habitat and, ultimately, populations of the targeted species. Ratios alone also fail to address or incorporate important habitat connectivity issues. Connectivity issues have also been regularly ignored in the permitting processes. There is no research or published study demonstrating effectiveness of habitat loss compensation as a means of achieving meaningful minimization of impacts. In fact, published literature indicates that habitat loss compensation as mitigation fails to achieve the desired goals. Furthermore, the level of habitat enhancement on acquired compensatory habitat required to minimize or offset impacts is unproven in the desert environment. The Manual needs to include a requirement that the agencies conduct an independent evaluation to determine if- sufficient and appropriately located compensatory habitats exist and can be acquired in a timely manner.

3. **Strategic actions (Manual, page 3):** Strategic actions to facilitate efficient and timely processing of applications for renewable energy projects include a number of recommendations by the members of the Renewable Energy Action Team (REAT). The foremost and most effective strategy is, “The renewable energy project is proposed to be located on land identified by the REAT and/or BLM as suitable for renewable energy development.”

Comment: The agencies have not identified any public lands in the California Desert as suitable for renewable energy development based on criteria that would minimize impacts to important biological, cultural or scenic resources. Since approximately 2006, BLM has accepted approximately 130 such applications covering nearly one-million acres in the California Desert, and also informed Defenders staff that approximately 4.3 million acres are available for right of way applications for renewable energy project consideration that are located outside of designated wilderness and wilderness study areas. National environmental groups have repeatedly urged the agencies and BLM in particular, both in writing and orally, to adopt screening criteria based on environmental considerations for use along with the economic criteria that have already been developed and used, but to no avail.

From the full report:

1. **Intent (Manual, page 7):** “The guidance is intended to apply to project development related applications, rather than to applications for pre-project resource and facility location assessments.”

Comment: The Manual does not address the most pressing, fundamental need: criteria to guide the location of renewable energy projects to areas of least environmental conflicts during the interim period pending completion of the DRECP and Solar PEIS. Absent such criteria, there can be no assurance that proposed renewable energy projects will be located in environmentally suitable areas and will avoid significant impacts on biological, cultural and scenic resources. Because of these shortcomings, permit applications cannot be processed in an expedited manner and further delays in the implementation of much needed renewable energy projects will be the outcome. We offer the Calico solar project as one example of a fast-track project that was located in an inappropriate area; was noted for its significant adverse impacts on at-risk plants and animals; faced significant public opposition and concern; and was the subject of significant time delays and costs due to a complex and difficult environmental review necessitated with legal and regulatory compliance procedures of the BLM and CEC.

Comment: Defenders has compared the “fast-track” projects with “next-generation” projects located on public lands under BLM management. “Fast-track” projects included six solar facilities located on 24,000 acres with a combined power output of 3,650 MW. (All three fast-track wind projects were dropped from expedited review and permitting due to significant land use and biological resources concerns – these projects were Tule, Daggett Ridge and Granite Mountain). “Next-generation” projects include eight solar and four wind projects involving 57,000 acres with a combined power output of approximately 4,000 MW. The proposed locations of the “next-generation” projects do not appear to have been selected based on environmental criteria designed to avoid or minimize significant impacts to significant biological, cultural and scenic resources. Thus, we anticipate that permitting processes for these proposed projects will involve extended regulatory review timeframes, with greater likelihood that project approvals will be publically opposed and legally challenged.

Recommendation: As in our previous recommendation, all currently proposed renewable energy projects should be located in areas having minimal biological, cultural or scenic resources and values. The recommended siting criteria developed by national environmental organizations should be **used** to screen projects and potential development zones for conflicts and controversy. That is the best way to ensure that permitting is efficient and sound projects are approved.

2. **“Sound” renewable energy projects (Manual, page 8):** “The REAT agencies are working with other agencies, local communities, tribes, environmental organizations and the renewable energy industry in authorizing sound renewable energy projects. The guidance and BMPs in this manual will assist these interests in addressing effects of such development on the resources described above.” (Those resources are identified as “The Joshua tree, barrel and prickly pear cacti, and pinyon pine trees highlight the desert landscape. Prairie falcons, golden eagles, burrowing owls, desert tortoises, rosy boas, desert horned lizards, collared and leopard lizards, Mohave ground squirrels, kangaroo rats, bobcats, kit foxes, mountain lions, and bighorn sheep...”).

Comment: “Sound” renewable energy project development envisioned under the Manual require that effective guidance criteria be used to identify zones where renewable energy projects could be considered for permitting that would not entail significant impact to the biological resources identified above, and also significant cultural and scenic resources and values. “Sound” project development necessitates that interim zoning under a “no regrets” approach be used for all currently unpermitted projects pending the completion of the DRECP.

3. **Project categories (Manual, page 8):** “Renewable energy projects addressed in this manual include 1) energy development technologies eligible for State of California RPS certification, 2) utility or large-scale energy generation, geothermal extraction, digester, biogas, and biofuel refinery (biorefinery) facility projects, and 3) the associated roads, construction laydown areas, pipelines, geothermal wells, steam lines, and transmission lines to the first point of interconnection with the electric transmission system.”

Recommendation: The Manual should contain constraints on the size of utility or large-scale solar energy projects and facilitate the development of appropriately-sized projects that can be located on smaller land areas that have been degraded by previous uses or that are adjacent to or surrounded by existing developments including roads, abandoned or fallow agricultural fields, and other commercial or industrial development. We strongly encourage the REAT to develop additional criteria that would maximize the opportunities for multiple, smaller-scale projects located on lands having marginal or low resources and values. Again, we believe an interim strategy embraced by the Manual should include zones identified through the use of recommended siting criteria developed by national and regional conservation organizations. These organizations applied these criteria and identified potential solar development zones in the California Desert on a map, which was submitted to the REAT agencies and Department of the Interior (see attachments).

4. **Strategic actions (Manual, page 11):** See comment #3 from executive summary, above.

5. **Strategic actions (Manual, page 12):** “A developer’s failure to address and resolve readily known and predictable issues associated with a project before applications are filed will likely require additional permitting agency application processing time. Project developers should propose appropriate project design features and mitigation as part of an AFC to the Energy Commission, a ROW application to BLM, and/or an application with another appropriate lead agency (such as the U.S. Environmental Protection Agency [USEPA], California State Lands Commission [SLC], or local government).”

Comment: We are concerned that the burden for resolving issues is to be borne entirely by the project proponent, and based on “readily known and predictable issues associated with a project before applications are filed...” We believe it is the responsibility of the REAT agencies to develop and adhere to siting criteria that would guide renewable energy projects to areas that lack appreciable biological, cultural and scenic resources due to location and previous disturbance, or are substantially affected by adjacent land uses that have resulted in appreciable degradation of habitats and disruption of habitat linkages. It is apparent from our experiences with the “fast-track” renewable energy projects that biological and cultural resources and their values on public lands are insufficiently understood by project proponents and the agencies and, therefore, the strategic criterion that calls for “resolving readily known and predictable issue” is rather meaningless. The significant issues associated with a number of the “fast-track” projects have demonstrated that existing information on natural and cultural resources is clearly inadequate to predict their occurrence and significance on individual project sites that are located on large expanses of land that are in a relatively undisturbed condition. Prime examples of these problems are represented by the resource conflicts at Ivanpah, Calico, Blythe and Imperial solar projects; and the three proposed wind projects (Tule, Daggett Ridge and Granite Mountain) that have been postponed due to biological resources issues, and primarily due to proximity of Golden Eagle nesting and foraging territories.

The Manual at page 12 also states: “There is inadequate time in an accelerated project review process to systematically address and resolve readily known and predictable issues associated with a project after filing an application.”

Comment: We agree that this observation is true of the fast track projects. In fact we saw that the fast track process was so rushed that such issues could not be “systematically address[ed] and resolve[d]” to the detriment of the environmental review process and significant public resources. The failure to do so renders projects legally vulnerable. It also calls into question oft-asserted claims that all legal requirements would be met in processing these projects and that corners would not be cut. The agencies would do well to ensure that going forward such issues **are** resolved, rather than continue to elevate speedy processing and approval of projects over statutory responsibilities.

Comment: The Manual recommends that pre-application consideration of proposed project location and resources issues be identified and resolved in order to reduce permit processing time, and not necessarily to minimize or avoid significant impacts to public land resources. The subject of alternative project locations as a means of avoiding or minimizing significant impacts to at-risk species and their habitats, significant cultural resources and scenic areas, needs stronger emphasis. Based on our experience with “fast-track” projects involving significant impacts to at-risk species such as the Desert Tortoise, Mojave Fringe-toed Lizard, Flat-tailed Horned Lizard and Golden Eagle, alternative locations for certain proposed

projects, including lands in a degraded condition, would have potentially avoided or minimized many of the impacts and allowed for reduced permit processing time. Although alternative project locations were “considered” by the permitting agencies, in most instances they were summarily dismissed from analysis and consideration because they would not meet the BLM’s purpose and need, namely to respond to an applicant’s right of way application for a specific project at a specific location. NEPA and CEQA require federal and state agencies to analyze a reasonable range of alternatives. Any range of alternatives should include at least one disturbed land site, particularly because the Renewable Energy Transmission Initiative has identified private degraded land as a priority for renewable energy siting.

Unfortunately this Manual also takes a dismissive approach to alternatives. For example, at page 22, it states that “[i]f a project is changed or modified after applications are filed, past experience indicates that significant application processing delays are likely and would hinder the ability of the BLM, Energy Commission ... to process permits in a timely manner.” Again, this is what happened in the fast track process, but the whole purpose of the environmental review process is to **improve** projects through information obtained and input provided in that process. This statement is inconsistent with the purpose of environmental reviews and again reveals or suggests that the CEC and other permitting agencies are elevating speedy processing and approval of applications over their legal responsibilities.

6. Initiating Permitting Processes – Early consultation, #9 (Manual, page 15): “Initiate discussions with FWS and DFG at least 12 months before filing power plant applications with the Energy Commission and BLM; include BLM and Energy Commission in the discussions.”

Comment: We are pleased the Manual recommends that potential applicants initiate early consultation with the FWS and CDFG as a means of identifying “...potentially suitable areas for development or conservation, potentially affected plant and wildlife species and habitats, and possible mitigation and alternatives with agencies and local governments early in the project planning and development process.” We stress the importance of this early consultation with all of the regulatory agencies. Consideration of a full range of alternative locations and identifying those that would have minimal potential conflicts with at-risk species and their habitats is perhaps the most important recommendation in the Manual. Additionally, applicants should collect as much survey information on biological resources as possible in preparation for consultations. Acquisition of such information will greatly aid consultation.

7. Initiating Permitting Processes – Early consultation, #16 (Manual, pages 16-17): “Meet with interested community, recreational, and environmental groups six to twelve months before filing applications with the appropriate lead agencies to involve the community leaders during early stages of project planning and development and inform them of the project and its potential benefits and impacts. Obtain stakeholder input and begin identifying issues.”

Comment: We strongly support this recommendation and welcome early and frequent discussions with project developers as a means of identifying significant issues and areas that would be potentially suitable for renewable energy development. Identifying potentially suitable locations for project development that have minimal biological, cultural and scenic resources needs to be done well before project developers file applications with the permitting agencies.

Comment: We urge the CEC to encourage project developers to refrain from entering into power purchase agreements with utilities until potential project locations having minimal biological, cultural and scenic resource issues are identified and are the subject of permit applications. Project developers should tailor the size of power generation facilities to potentially suitable sites having minimal resource conflicts, thereby increasing the likelihood that proposed projects will be permitted.

8. Biological Resources Guidance (Manual, pages 22-27): Biological Resources Guidance contains measures that would potentially minimize impacts to sensitive species of plants and animals, and their habitats, and maintain habitat linkages.

Comment: All habitats supporting appreciable populations of at-risk species should be identified as areas to avoid through early consultation with permitting agencies and stakeholder environmental organizations. For example, there are large areas outside of designated critical habitat that support significant populations of threatened Desert Tortoises that should be avoided. To date, the number of Desert Tortoises encountered on project sites during required surveys was much higher than anticipated due to general lack of information about the occurrence and abundance of this species throughout its range in the Mojave Desert.

Recommendation: We strongly recommend that the REAT agencies develop interim siting criteria based on existing information for Desert Tortoise occurrence and abundance outside of designated critical habitat, the USGS Desert Tortoise Habitat Model, and other sources so that significant Desert Tortoise populations and their important habitats are avoided in all renewable energy projects considered for permit processing pending completion of the DRECP.

Comment: Guidance regarding wildlife movement and connectivity corridors (page 24, f) simply indicates that these essential habitats should not be “severed.” We consider this to be much too weak, and strongly recommend that all projects avoid these habitats entirely.

Recommendation: Guidance (page 26, item 13) discusses areas to avoid in siting projects. Avoidance areas should also include BLM-designated Wildlife Habitat Management Areas and Unusual Plant Assemblages. As in our comment above, projects should not be sited within known wildlife habitat movement corridors or habitat linkages, and we do not believe that impacts to these special habitat areas can be adequately mitigated.

Comment: Desert Tortoise translocation is an experimental procedure that has not been proven effective in minimizing harm and mortality to individuals removed from project sites and those existing on receiving sites. The most appropriate means of minimizing harm and mortality is to locate renewable energy projects to areas of low habitat suitability that do not support appreciable numbers of this species. The REAT agencies should use existing information, combined with targeted field assessments, to identify areas that unsuitable for consideration of renewable energy projects pending completion of the DRECP.

9. Biological Resources Best Management Practices (BMPs) (Manual, pages 27- 40)

- a) **Bald and Golden Eagles (Manual, pages 36-37):** “Avoid, to the extent needed to comply with state and federal requirements, siting project facilities and infrastructure in a location or manner that would cause bald and golden eagle mortality, injury, and/or disturbance; i.e. locate facilities outside of eagle breeding home ranges as well as important breeding, wintering, and dispersal foraging areas, migration stopovers and corridors, and areas used by eagles for thermal or orographic lift.”

Recommendation: REAT agencies should identify zones based on identified Golden Eagle nesting and foraging territories where renewable energy facilities are not considered compatible with the protection provisions of the Bald and Golden Eagle Act and its implementing regulations published by the FWS in November 2009. Large-scale renewable energy projects, both wind and solar, have the potential to cause direct mortality through collisions with structures or incineration from concentrated sunlight associated with heliostats focused on central heat-receiving towers; whereas others may cause indirect disturbance and eventual mortality due to loss of foraging habitat associated nesting territories. We strongly believe interim no-project zones should identified and mapped using existing information pending completion of the DRECP.

Comment: Placing the responsibility for avoiding locations that would cause Golden Eagle mortality or harm on project applicants does not seem appropriate to us. A project proponent typically becomes aware of Golden Eagle nesting and potential foraging habitats after filing permit applications and conducting field surveys. The agencies should bear the responsibility of identifying no-development zones so that projects are not proposed in areas that would ultimately be considered essential for conservation of Golden Eagles. This is especially needed in the Mojave Desert where Golden Eagle abundance and reproduction are low.

Comment: Several of the fast-track solar and wind projects, both individually and cumulatively, pose high degrees of risk or harm to Golden Eagles, and some of these projects have been authorized in the absence of an Eagle incidental take permit, or have been placed on hold pending resolution of potential Golden Eagle take issues by the agencies. Based on our understanding of the regulation implementing the Bald and Golden Eagle Protection Act, and the associated NEPA analysis and decision by the FWS, it appears highly uncertain that incidental take permits for Golden Eagles would be allowed for any activity that would pose harm, including substantial loss of foraging habitat within nesting territories. If our interpretation of the regulations is correct, then interim restrictions on where renewable energy facilities could be considered and where they would be prohibited are even more important pending completion of the DRECP.

- b) **Desert Bighorn Sheep (Manual, pages 37-38):** “Retain a qualified biologist, approved by the DFG, FWS, and permitting agencies, to conduct preconstruction surveys for Peninsular and Mojave bighorn sheep (*Ovis canadensis nelsoni*). Due to low detection probabilities, use: data relative to historic ranges of bighorn sheep; known and potential wildlife corridors (such as, those identified in the BLM Mojave and Colorado deserts land use plans); point location data; and existing literature when evaluating potential projects impacts to the species. If California desert region bighorn sheep or their migration routes exist, are known or likely to occur on or in

the vicinity of the project site, and may be affected by project - related activities, consult with DFG, FWS, and other stakeholders, as appropriate, regarding avoidance, minimization, compensatory mitigation, or site abandonment.”

Comment: It appears this BMP for Desert Bighorn Sheep would be largely ineffective in avoiding or minimizing impact to this species. As written, projects would be located, engineered, analyzed and potentially approved for construction before surveys for this species would be required. It is imperative that Desert Bighorn habitats, including known or likely linkage habitats been mountain ranges, remain intact and not subject to habitat loss and fragmentation due to renewable energy projects. Thus, pending completion of the DRECP, interim project avoidance zones that would promote the conservation of this species need to be developed, and implemented through REAT agency policies.

Comment: We strongly recommend the REAT agencies, and BLM and CDFG in particular, obtain the services and expertise of leading Desert Bighorn Sheep biologists in identifying habitats and linkages necessary to ensure conservation of this species. The CDCA Plan and its amendments for the various planning areas may not be sufficient in this regard. Dr. John Wehausen is under contract with the CDFG to prepare Desert Bighorn Sheep management plans for the metapopulations comprising the known, core populations in the central and eastern Mojave and Sonoran Deserts of California. Drs. Clinton Epps and Vern Bleich and the Peninsular Bighorn Sheep recovery team should also be consulted in this effort.

- c) **Mohave Ground Squirrel (Manual, page 38):** “Retain a Mohave ground squirrel qualified biologist, approved by DFG and other permitting agencies, to complete a Mojave ground squirrel pre - construction survey in areas subject to construction disturbance no less than 30 days before initial ground disturbance activities start. Refer to *Mohave Ground Squirrel Survey Guidelines, Attachment I*, and confer with DFG for up-to-date guidance on presuming presence of the animals, conducting surveys and survey protocols.”

Comment: This BMP would be ineffective in minimizing impact to Mohave Ground Squirrels caused by habitat loss. The goal here should be to avoid siting of renewable energy projects and solar projects in particular, within high quality habitat for this species as well as habitat linkages necessary to ensure connectivity between various known populations within its range.

Recommendation: The BLM-designated Mohave Ground Squirrel Wildlife Habitat Management Area should be avoided to the maximum extent possible, and project applicants and REAT agencies need to be aware that habitat loss within this management area carries a 5:1 compensation requirement that would be the responsibility of the project proponent. We recommend the REAT agencies incorporate the analysis of the Mohave Ground Squirrel occurrence and habitat assessment in the West Mojave Plan amendments to the CDCA Plan that was published in 2006. In addition, connectivity areas have been identified within and outside of the management area for this species, and projects should not be allowed within these key areas.

10. **Water Supply and Quality Guidance (Manual, page 66, item 1):** “Given scarce water resources in the desert region use of dry cooling technologies for power plant cooling is encouraged and preferred.”

Recommendation: This guidance should be revised so that dry or air cooling technology is the **only** method that will be considered in the California Desert region as a means of conserving naturally occurring groundwater, both fresh and brackish.

11. **Climate Change Adaptation:** The Manual only briefly mentions the importance of maintaining habitat linkages and opportunities for species movements in light of climate.

Comment: The Manual should address potential direct, indirect and cumulative impacts of renewable projects on the ability of desert species to adapt to expected climate change stressors. According to the Intergovernmental Panel on Climate Change, the southwest deserts of the United States are a climate change “hotspot.” Based on climate change scenarios, permitting agencies in concert with the Department of Fish & Game and U.S. Fish and Wildlife Service have an obligation to develop thresholds of significance for adaptive capacity of species related to these project impacts, and to require that adequate landscape-level species movement areas be off limits to renewable development in order to ensure preservation of options to address this issue in the DRECP (please see “California Climate Change Adaptation Strategy” 2009, p. 61). Interim protection of these essential movement areas needs to be ensured through provisions in the Manual.

This concludes our comments and recommendations on the Manual. They are intended to strengthen the effectiveness of that document in guiding renewable energy planning and development in the California Desert in the most expeditious and environmentally responsible manner. Please contact us if we can provide additional information or answer questions.

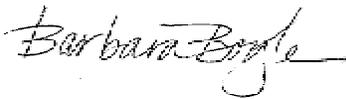
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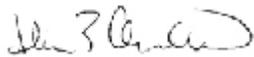
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