



October 27, 2009

**DOCKET**

**09-RENEW EO-1**

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California Energy Commission  
Dockets Office, MS-4  
RE: Docket No. 09-Renew EO-01  
1516 Ninth Street  
Sacramento, CA 95814-5512

RE: Docket No.: 09-Renew EO-01  
Renewable Energy Executive Order  
Written Comment Regarding the Proposed Best Management Practices Manual:  
Desert Renewable Energy Projects

To Whom It May Concern:

Thank you for the opportunity to comment on the California Energy Commission's "Best Management Practices Manual: Desert Renewable Energy Projects". CalEnergy Company, Inc. would also like to take this opportunity to thank the commission for its efforts to provide a uniform framework through which to more efficiently navigate the complex permitting and approval process for renewable energy projects. While the draft manual serves as a starting point in the development of this framework, we feel that it is critical that the commission incorporate and acknowledge the following in the process of finalizing this document:

1. The manual is a guidance document. Although the draft manual references that it "...does not recommend changes to laws, regulations, or agency jurisdictions...", it will, absent thoughtful and consistent implementation, be adopted as de facto policy. Therefore, the "Introduction and Purpose Section" should specifically state: "No part of this manual should be interpreted or administered as policy or regulation. Rather, this manual is meant to be guidance for consistency in permitting renewable energy projects. All requirements developed in conjunction with permitting of a renewable project should thoroughly take into account environmental, technical feasibility, and cost considerations."
2. The manual implies that all potential impacts must be reduced to "net zero". While this is an admirable goal, impacts can seldom be economically reduced to this level. Therefore, the manual should be structured so as to incorporate specific criteria for reduction of impacts to "acceptable" levels.



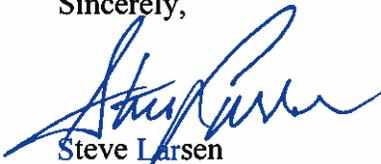
3. CalEnergy acknowledges that for involved agencies to process applications so as to meet the aggressive goals of California's renewable portfolio standard, applications need to be as complete as possible in terms of addressing practically identifiable issues. However, as voiced by a number of participants in the October 13, 2009 workshop in Victorville, involved agencies need to establish a common, consistent set of permitting and review criteria. This manual should, therefore, also serve as the basis for this agency consistency. As stated above, it is important to acknowledge the manual as guidance in no way replacing professional judgment for eventualities that may require analysis on a case by case basis.
4. The draft manual would require a number of activities to be completed prior to filing applications with lead agencies to include an executed power purchase agreement and a completed system impact study. CalEnergy acknowledges most agencies have limited resources and therefore the completeness of applications is crucial to an efficient review process. However, if prohibited from paralleling activities where appropriate, the overall permitting and approval process for most projects will be substantially lengthened.

Absent aggressive enforcement by the commission, the manual will not address the disparity that exists in permitting complexity between the state and local levels. Therefore, CalEnergy would urge the commission to use the manual as a mechanism to achieve the much needed parity between these two levels.

CalEnergy also sees the development of this manual as a unique opportunity to foster a joint industry, government stakeholder relationship in the future development of renewable energy. Accordingly, CalEnergy would like to assert to the commission we will allocate the necessary internal resources as appropriate to assist the commission in advancing this process to a successful conclusion. It is CalEnergy's similar expectation that the commission and other involved agencies will embrace valid concerns and comment. In order to do so and allow for necessary dialogue to accommodate this process, it is our hope that the commission exercise flexibility with respect to the December 31, 2009 deadline.

Our specific comments are attached. Please do not hesitate to contact us to discuss these. We look forward to continuing to work with REAT in this matter.

Sincerely,



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President  
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Formal Comment:

Docket No.: 09-Renew EO-01  
Renewable Energy Executive Order

Page 1, Lines 29-30: This line should be revised as follows: “b) assist developers in designing renewable energy projects that minimize environmental impacts through the incorporation economically viable and technically feasible mitigation measures”.

Page 2, Lines 16-18: Is it REAT’s intent to include areas believed to be suitable for geothermal development in its draft January, 2010 study?

Page 2, Line 19: This is not an activity as stated in lines 11 – 15. This line should be revised as follows: “Applications should include, where appropriate, technical and financial analyses supporting the preferred alternative for water supply for the project.” Revision of the text in this manner will also make it consistent with the language referencing water use on page 55, lines 2-3.

All references to the implied prohibition of fresh water use throughout the Manual should be revised and made consistent in their underlying intent which is, in fact, to minimize the use of fresh water. The Manual should be revised to include a specific set of criteria ensuring that the aforementioned analyses are both performed by the developer and reviewed by the involved agency(s) in a consistent manner.

Page 2, Lines 36-37: The sentence in these two lines should be revised as follows: “The developer will include documentation that the proposed project is consistent with uses established by Williamson Act contract, local zoning (including geothermal overlay or solar development ordinance), or General Plan Amendment.”

To specifically exclude development of renewable projects on lands under Williamson Act contract is inappropriate as certain counties such as Imperial have established that geothermal development on Williamson Act lands is a compatible use.

Page 2, Lines 40-43: It is inappropriate to require the completion of a system impact study (SIS) prior to initial submission of an application to a lead agency. Completion of an SIS often requires as long as 18 months to prepare and the schedule is frequently outside the control of the developer. Further, it is not uncommon for projects incorporated in an SIS to drop out requiring the system analysis to be revised incurring additional delay. Therefore, requiring this activity to be completed prior to submission of an initial application as opposed to concurrently with the regulatory review and permitting process will substantially delay the implementation of most projects.

Page 2, Line 44: Completion of a power purchase agreement (PPA) is often a protracted process. Therefore, requiring this activity to be completed prior to submission of an initial application as opposed

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to concurrently with the regulatory review and permitting process will substantially delay the implementation of most projects.

Page 3, Lines 1-3: The Preliminary Determination of Compliance (PDOC) is best developed in conjunction with the overall review of the project by the appropriate, involved agencies. In so doing, Commission technical staff can work in conjunction with the local Air Pollution Control District (APCD) to identify impacts and consistently establish required mitigation measures.

Page 5, Lines 29-31: Adoption of the Manual by December 31, 2009 is an admirable goal. However, given the importance of the Manual to the development of renewable energy projects, the REAT must allow for comprehensively addressing and, where appropriate, incorporating valid comment by stakeholders. Accordingly, the adoption process should not be driven solely by the December 31 date.

Page 8, Lines 2-43: This section is totally redundant of page 2, lines 11-44 and page 3, lines 1-3. Lines 11-44, page 2 and page 3, lines 1-3 should be omitted and manual users should be referred to lines 2-43, page 8. Note: same comments apply to lines 2-43 as referenced above to page 2, lines 11-44 and page 3, lines 1-3.

Page 10, Lines 1-3: CE agrees that it is appropriate to initiate discussions as early on in the project as is practical. However, the 24 month timeframe delineated is at best immaterial. This is because most utilities are experiencing proposed projects either requested to be added or dropped from their system analyses on a monthly basis. This goes to emphasize the concern set forth above in the comment referencing Page 2, Lines 40-43.

Page 10, Lines 4-6: CE agrees that it is appropriate to initiate discussions as early on in the project as is practical. However, the 18 month timeframe delineated is at best immaterial. This is because most utilities are experiencing proposed projects either requested to be added or dropped from their system analyses on a monthly basis. This goes to emphasize the concern set forth above in the comment referencing Page 2, Lines 40-43.

Page 11, Lines 28-30: Establishment and operation of a meteorological station proximate to a project for a year will unduly extend the permit development and approval process for projects. Further, the Manual does not delineate any clear criteria with respect to the method of collection and types of data. The time period to accomplish the proposed requirement will be further lengthened by having to both identify these criteria as well as appropriately site the monitoring location. Therefore, this proposed requirement should be omitted from the final draft of the Manual.

Page 11, Lines 31-33: Establishment and operation of a meteorological station proximate to a project for a year will unduly extend the approval process for projects. Further, the Manual does not delineate any clear criteria with respect to the method of collection and types of data. The time period to accomplish the proposed requirement will be further lengthened by having to both identify these

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criteria as well as appropriately site the monitoring location. Therefore, this proposed requirement should be omitted from the final draft of the Manual.

Page 12, Lines 10-15: This requirement, as proposed, does not adequately reference the statutory requirements of the New Source Review (NSR) and Prevention of Significant Deterioration (PSD) programs. The Commission has no statutory authority to require mitigation beyond the requirements of these two programs. The proposed requirement should, therefore, be revised as follows:

“If an analysis of emission potential (i.e. – Potential to Emit “PTE”) from the project’s stationary sources exceed the action thresholds in either New Source Review (NSR) and Prevention of Significant Deterioration (PSD), provide a detailed list of offsets that could be purchased or secured to offset the excess emissions.”

As a commentary note, the REAT should not lose sight of the fact that renewable energy projects by their very nature result in significantly lower emissions of criteria pollutants and greenhouse gases over their operation life compared to comparable fossil generation sources. As it is the underlying intent of California’s renewable Portfolio Standard for renewable generation to displace fossil generation, if offsets are required, the project developer should be allowed to generate offsets by calculating the per megawatt hour difference in emissions between the renewable source and a source burning fossil fuel meeting appropriate emission control criteria as required by regulation.

Page 12, Lines 16-19: The structure of this requirement is inconsistent with the similar requirement on page 3, lines 1-3. All references should, at the very least, be made consistent. Regardless, the Preliminary Determination of Compliance (PDOC) is best developed in conjunction with the overall review of the project by the appropriate, involved agencies. In so doing, the involved agencies can work in conjunction with the Air Pollution Control District (APCD) to identify impacts and establish required mitigation measures in a consistent manner.

Page 14, Lines 29-30: Text should be revised as follows: “(10) Use of evaporation or infiltration ponds for management of water other than stormwater runoff should be avoided.”

Page 14, Lines 40-42: Text should be revised as follows: “(11) If evaporation ponds described in (10) above are included in the project design,.....”

Page 16, Lines 14-17: It is inappropriate to require the completion of a system impact study (SIS) prior to initial submission of an application to a lead agency. Completion of an SIS often requires as long as 18 months to prepare and the schedule is frequently outside the control of the developer. Further, it is not uncommon for projects incorporated in an SIS to drop out requiring the system analysis to be revised incurring additional delay. Therefore, requiring this activity to be completed prior to submission of an initial application as opposed to concurrently with the regulatory review and permitting process will substantially delay the implementation of most projects.

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Page 16 Lines 21-22: System improvements determined as being necessary beyond the first point of interconnection are beyond the regulatory authority of the Commission. Therefore, the requirement to perform and submit a CEQA analysis for system improvements required beyond the first point of interconnection prior to submitting an initial application to a lead agency should be omitted.

Page 17, Lines 7-10: This blanket statement is inappropriate because certain counties such as Imperial have established that geothermal development on Williamson Act lands is a compatible use. The first sentence should, therefore, be revised as follows: "A project on agricultural land under a Williamson Act contract, unless included in an approved geothermal overlay zone, will significantly delay the siting process..."

Page 19, Lines 22-23: Requirement indicates taking soil samples in "many locations". Specific sampling criteria should be delineated so that this requirement is implemented consistently.

Page 19, Lines 24-27: The requirement states that analyses for "toxic metals" should be conducted on the fraction of the collected soil samples that is less than 38 microns. This would seem to be of little or no value for projects developed on "greenfields". Is it REAT's intent that this requirement be implemented in instances where projects are developed on brownfields? If this latter is the case, it would be appropriate to reword the requirement as follows:

"If the Preliminary Site Assessment performed for the site indicates that the potential for contamination exists, perform the appropriate sampling and analyses to determine the potential for exposure during construction and operation of the facility."

However, if the requirement's intent is to solely address metals, specify: 1.) Whether or not compositing is acceptable and, if acceptable, the number of aliquots per composited sample; 2.) Which metals are to be included in the analyses (RCRA metals?); 3.) The total number of samples required. Specific criteria should be delineated so that this requirement is implemented consistently.

Page 23, Lines 26-31: Most if not all steam turbine designs used in flash geothermal applications are incompatible with air cooled technology. This aside, Lines 28-31 appear to contain a redundancy referencing multiple "will serve" letters.

It is inappropriate for the Manual to imply a policy of "no fresh water use". More fittingly, the proposed requirement should be revised as follows: "Applications should include, where appropriate, technical and financial analyses supporting the preferred alternative for water supply for the project." All references to the implied prohibition of fresh water use throughout the Manual should be revised and made consistent in their underlying intent which is, in fact, to minimize the use of fresh water.

Page 23, Lines 45-46: This requirement is either unclear or the text is incomplete.

Page 24, Lines 4-42: The discussion in this section appears to directly contradict the inferred prohibition of fresh water use set forth on page 23, lines 26-31 and should, therefore, be made consistent.

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Page 25, Lines 1-28: The discussion in this section appears to directly contradict the inferred prohibition of fresh water use set forth on page 23, lines 26-31 and should, therefore, be made consistent.

Page 26, Lines 16-18: There is no statutory requirement to apply for and obtain DOGGR drilling permits more than a year in advance of project start-up. The development planning of a geothermal production field and associated injection field is, in fact, somewhat fluid and subject to change. This is because data about the field's geologic and geophysical structure are acquired as wells are drilled. These data may then be used to adjust the well field's configuration. Therefore, permit applications are generally submitted to the DOGGR on average one month to several weeks before a well is drilled. Applying for DOGGR permits for construction of all wells anticipated in a well field is thus inappropriate.

Page 26, Lines 19-21: CE's production lines carry brine under conditions of high temperature and pressure in a liquid state not steam, as do most flash geothermal plants.

Page 26, Lines 24-26: This is an unsupported requirement as no criteria are stated with respect to where buffer areas are appropriate and how these areas would be designed. All of the criteria: public access, noise, and air quality are addressed in the Commission's siting guidelines. Therefore, the indicated lines should be omitted.

Page 26, Line 27: Requirement should be reworded to indicate "prevailing" wind direction. However, this requirement should examine the minimum distance "downwind" where anticipated impacts are minimal as indicated by modeling. At this distance, this requirement would become moot.

Page 26, Lines 28-29: Generally, the approach indicated is preferable in terms of designing production and injection piping. However, CE uses high alloy piping for both of these applications which is extremely expensive on an installed, per linear foot basis. Therefore, value engineering often dictates alternate routing to maintain project economics. Disruption of agricultural operations is a component of this analysis.

Page 51, Lines 13-16: It is not physically possible to collect a geothermal brine sample from a single flash process for laboratory analysis. This fluid is under high pressure and approximately 450°F at the production well head. Similarly, after the first flash, the brine is still under conditions of high temperature and pressure.

Page 51, Lines 17-19: There may be instances where separate ownership and operation of the well field and power generation facilities is desirable. The Commission has no statutory authority to require common ownership of these facilities.

Page 51, Lines 20-25: The proposed requirement is both costly and unnecessary. As part of the demonstration for the Amendment Petition for Salton Sea Unit 6, odor impact modeling was completed using established criteria. The modeling data and results have been accepted by the Commission technical staff.

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Page 51, Lines 26-31: The use of chelated iron and sodium sulfite is not the preferred control method for H<sub>2</sub>S in geothermal condensate. The preferred method is the introduction of an oxidizer such as hypochlorite or hydrogen peroxide. Although this later has been determined to be cost prohibitive under most circumstances.

Page 51, Lines 35-36: A BACT analysis was performed in conjunction with the development of the Amendment Petition for Salton Sea Unit 6 which indicated no preference for liquid redox for control of H<sub>2</sub>S in an NCG stream.

Page 53, Line 44: Most if not all steam turbine designs used in flash geothermal applications are incompatible with air cooled technology. Applications should include, where appropriate, technical and financial analyses evaluating the feasibility of dry cooling. All references to the implied prohibition of fresh water use throughout the Manual should be revised and made consistent in their underlying intent which is, in fact, to minimize the use of fresh water.

Page 54, Lines 17-19: The requirement as stated is inappropriate as it makes the assumption that injection will cause tumescence. In fact this is very rare in geothermal fields and should be considered only on a case by case basis. Injection well strategy should not be dictated on a perceived or essentially improbable problem.

Page 54, Lines 20-21: The term "active fault" as used in this context is too all encompassing. More appropriately, the term "active fault" as used in this context should be referenced to faults identified by the Alquist-Priolo Earthquake Fault Zoning Act. DOGGR or BLM dictates what is an appropriate injection pressure and can give permission, from time to time, to "hydro fracture" or over pressure. Generally, both entities regulate well fields to avoid this situation. In point of fact, there is not a well defined "it happens every time" relationship between injection and seismicity. And "seismicity" needs to be separated from "micro-seismicity". As can be seen, this is a complex technical issue and the generalization as presented is wholly inappropriate. These lines should be omitted.

Page 54, Lines 22-25: This is already regulated by DOGGR and BLM for geothermal wells. Redundant and therefore should be omitted.

Page 54, Lines 26: The term "shallow depths" is vague and ill defined. This is already regulated by the DOGGR and BLM. Redundant and therefore should be omitted.

Page 54, Lines 27-29: Regulated by DOGGR and BLM. Redundant and therefore should be omitted.

Page 54, Lines 30-32: The first sentence is redundant. The second sentence restates an activity regulated by DOGGR and BLM. Both should, therefore, be omitted.

Page 54, Lines 33-34: Requirement as stated may be unfeasible from an engineering standpoint in a shallow groundwater environment such as the Imperial Valley. The requirement should be restated to address this eventuality.

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Page 54, Lines 35-37: This is already regulated by DOGGR and BLM for geothermal wells. Redundant and therefore should be omitted.

Page 54, Lines 38: This is already regulated by DOGGR and BLM for geothermal wells. Redundant and therefore should be omitted.

Page 54, Lines 39-42: This is already regulated by DOGGR and BLM for geothermal wells. Redundant and therefore should be omitted.

Page 55, 2-4: It is inappropriate for the Manual to imply a policy of "no fresh water use". More fittingly, the proposed requirement should be revised as follows: "Applications should include, where appropriate, technical and financial analyses supporting the preferred alternative for water supply for the project." All references to the implied prohibition of fresh water use throughout the Manual should be revised and made consistent in their underlying intent which is, in fact, to minimize the use of fresh water.

Further, the requirement as stated for "...impacts (are to be) mitigated..." is vague and ill defined. As written, there are neither examples of mitigation measures nor discussion as to the degree of mitigation.

Page 55, Lines 5-7: It is not possible to use geothermal fluid for cooling. It is possible to use condensate from geothermal fluids for cooling. As regards high efficiency fills in cooling towers, in most instances, the chemistry of the cooling water promotes the rapid accumulation of minerals and biological material on the fills. This results in blockage and substantially reduced cooling efficiency.

Page 79, Lines 4-7: The reference to hybrid cooling fails to both present and correlate the incremental capital and operating costs associated with the incremental water conservation. A cursory analysis of this technology was performed during the development of the Amendment Petition for Salton Sea Unit 6 which indicated in and of itself that this was grossly unfeasible from an economic standpoint.