California Energy Commission
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Committee on 245 Million Acres
7143 Gardenvine Avenue
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January 23, 3013

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Commissioner
California Energy Commission
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Sacramento, CA 95814

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California Energy Commission
Documents Office, MS-4
Docket No. 09-RENEW EO-01
1516 Ninth Street
Sacramento, CA 95814-5512

Re: DRECP Description and Comparative Evaluation of
Draft DRECP Alternatives

Dear Commissioner and Directors:

The founders of the Committee for 245 Million Acres greatly appreciate the opportunities afforded for involvement in development of the DRECP.

Unknown or nonexistent Energy Commission hard copy policy

We are fairly new to the DRECP process. Our initial efforts were in 2012.

It is with dismay that we find the Commission is not making hard copies of the Description and Comparative Evaluation of Draft DRECP Alternatives (DACE) documents available to the public as we requested December 30, 2012. We recognize that this obstacle to public involvement is consistent with our experience of Commission practices. After some difficulty finding the Public Adviser's office in spite of directions (e.g, no signs on the double doors) and assistance from someone in a cubicle on the second floor, followed by finding the door to the office closed, we were redirected to the office again from the front desk. The adviser's office starting April 25, 2012, held out some hope of providing hard copies of other requested DRECP documents, but they don't materialize, so we have not requested the help of that office to obtain hard copies in this case. We have been unfamiliar with this kind of public impediment in our many years of experience or when the Commission's work is compared to other state agencies such as the state and regional water boards or DTSC.

We ask if one of the other three offices to which this letter is addressed can remedy this problem and provide us with copies of the current DACE alternatives draft, and other documents as they are considered

The January 23 comment request deadline should be extended for a reasonable period of time after DACE document hard copies are made available.

Identification of DACE Alternatives without necessary consideration of scientific factors

Addressing critical scientific issues affecting identification of Alternatives in CEQA/NEPA documents would come too late and would be insufficient.

The reviews of the 2010 and 2012 DRECP Independent Science Advisers Panels demonstrate that wholly insufficient consideration has been given to the science that is essential to prepare the plan, including identification of Development Focus Areas, Reserve areas, and all other plan components. E.g., Section 4.2, page 42 of the ISP 2012 November 2012 Final Report.

Biological Soil Crusts (BSCs)

The DACE Alternatives January 9, 2013 webex meeting presentation indicates that "Geology and Soils" are "not Presented but to be included in public review Draft DRECP and EIS/EIR."

About 10 years ago,, "…well over 3,000 publications now available on the biology, ecology, and ecophysiology of soil-crust communities and their components, as well as on applied aspects such as landscape level hydrology and management" were available. Belnap abd Lange, Eds, Biological Soil Crusts: Structure, Function and Management (Springer, 2013 paperback, referred to here as Belnap & Lange)

BSC publication has grown in the meantime, and BSC papers have been part of scientific panels such as at to 2012 Ecological Society of American Conference in Portland, Oregon, and the 2012 conference of the North American Society for Conservation Biology in Oakland, California. I attended both conferences and have a B.S. in Forestry and Conservation including classroom and field course work in ecological theory, practice and field methods.

DRECP BSCs are not only a CEQA/NEPA factor, they are a fundamental component of the DRECP and other arid lands of the world. BSC's cover perhaps 70% of some desert surfaces (Belnap & Lange, V) or sometimes up to 100% of desert surfaces between plants, and total coverage may exceed that of higher plants (Belnap & Lange, 263; DACE page 3.1-21).

BSCs have major influences on terrestrial ecosystems:

- BSCs in North America are characteristic of many of the arid and semiarid vegetation types in western North America. While the heavily pinnacled crusts of the Colorado Plateau are the most visible among ecoregions, soil crusts are a major component of most western North American habitats. Belnap & Lange, 47.
- They contain extremely long-lived organisms. Consequently, BSCs can offer ecosystem services continually through time in spite of conditions often limiting other soil-surface protectors. Belnap & Lange, 479.
- On a landscape scale, variation and limitation of BSCs are mainly related to precipitation, soil chemistry and texture, topography, cover of phanerogamic vegetation, and disturbance. Belnap & Lange, 204.
- Research in the 1960's documented the ability of BSC components to fix nitrogen and influence hydrologic processes such as water runoff and infiltration rates. Belnap & Lange, V, 356, 475.
- Autotrophic BSC components create carbon compounds for desert soils via reduction of CO2, Belnap & Lange, VI.
- The seemingly bare desert surface is actually covered by photosynthetic machinery somewhat like a giant leaf. The maximal photosynthetic capacity of this "leaf" is similar to that of phanerogamous plants growing in the same area. However, metabolic activity of the poikilohydric autotrophs is restricted to the short periods of time when the crusts become hydrated by high humidity, snow, dew, or rain. Nevertheless, a substantial stream of carbon is delivered from the crust autotrophs to the ecosystem,

contributing to soil and humus formation and carbon availability to the soil heterotrophs. Belnap & Lange, 474.

- They can influence the germination and establishment of vascular plants. Belnap & Lange, VI, 476.
- They reduce wind and water erosion. Their presence in water-limited areas can be crucial in reducing soil loss from plant interspaces and in maintaining vegetative productivity. Belnap & Lange, VI, 477.
- Breaking through the BSC cover decreases resistance of the soil surfaces to wind and water erosion. Subsequent invasion of exotic annual plants into native perennial communities can cause dramatic changes in soil crust flora. Such invasions, along with disturbance, can lead to substantial alterations in carbon and nitrogen inputs. Thus, land managers in arid and semiarid areas need to understand the role of crusts, and the impact of different uses, in different ecosystems. Belnap & Lange, VI.
- The largest threat to BSCs is the changes caused by land-use change and invasive species. Belnap & Lange, 425.
- They can be used as indicators of ecological health (such as disturbance history) and are not greatly influenced by short-term environmental factors.
- It is essential that the condition of BSCs be monitored where anthropogenic activities are continually recurring. Belnap & Lange, VI. 478.
- They may play a substantial role in the CO2 fluxes between the ground and the atmosphere. Discussion about the causes of the present global increase in atmospheric CO2 concentration, and possible mitigation measures, need to include the role of biological soil crusts during their different successional stages. Thus, future measurements and modeling work need to include large-scale estimates of how BSCs contribute to the global carbon budget. Belnap & Lange, 475.
- The ability of remote sensing to detect and map the distribution of BSCs offers the opportunity to extend site-specific ecological studies of crusts to a regional scale, thus reducing the time and costs associated with ground surveys. Belnap & Lange, 431.

<u>The DRECP is not a desert plan without incorporating use of BSCs in the plan itself</u>

A DRECP that does not map BSCs and make use of the best available BSC management science for plan development, land use designations, adaptive management, and so on, is akin to a forest plan that does not identify forest and plant vegetation communities or makie use of forest science.

3.0 Affected Environment, 3.1 Biological Resources, 3.1.3.3, and 3.1.3.4, give cursory treatment of BSCs as part of two paragraphs (DACE, pages 3.1-20-22). This suggests that BSCs have no role in consideration of or in designation of land uses, whether through DRECP recognition, use or anything else.

4.0 Draft Analysis of DRECP Alternatives, 4.1 Biological Resources, confirms this inattention to or absence of recognition of BSCs (pages 4.1-1 et seq.). Forests, Grasslands, Riparian and other categories are listed, but not BSCs. The "Rocky, Barren, Unvegetated" section, page 4-1.30 likely includes major BSCs, but they are not mentioned. BSCs are not recognized and used as the significant component and extent they likely have in the Scrub and Chaparral (page 4.1-31-32), Woodland (page 4.1-34) and other areas.

This absence of recognition and use suggests grievous absence of knowledge or attention, or both, to basic desert science as well as to what is in the deserts in question.

Unfamiliarity with key NCCP requirements is also suggested.
California NCCPs require (department refers to DFW):

> 2820. (a) The department shall approve a natural community conservation plan for implementation after making the following findings, based upon substantial evidence in the record:
>
> (1) The plan has been developed consistent with the process identified in the planning agreement entered into pursuant to Section 2810.
>
> (2) The plan integrates adaptive management strategies that are periodically evaluated and modified based on the information from the monitoring program and other sources, which will assist in providing for the conservation of covered species and ecosystems within the plan area.
>
> (3) The plan provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of covered species appropriate for land, aquatic, and marine habitats within the plan area.
>
> (4) The development of reserve systems and conservation measures in the plan area provides, as needed for the conservation of species, all of the following:
>
> (A) Conserving, restoring, and managing representative natural and seminatural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.

We have met all written comment requirements in the Public Meeting Notice of December 17, 2012.

Sincerely,

/s/

Michael N. Garabedian
Co-founder
916-719-7296

cc: Public Adviser