

STATE OF CALIFORNIA
Energy Resources Conservation
and Development Commission

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In the Matter of:

The Application for Certification for the
Calico Solar Project

Docket No. 08-AFC-13

INTERVENOR DEFENDERS OF WILDLIFE

Opening Brief

August 23, 2010

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On August 5-8, August 18 and August 25, the Committee assigned to this proceeding held evidentiary hearings to receive evidence into the record regarding the Calico Solar Project (“Project”) Application for Certification (“AFC”). The Committee directed parties to file opening briefs discussing all matters in contention. Below, Defenders of Wildlife (“Defenders”) addresses the pertinent issues raised at the evidentiary hearing.

Statement of the Facts

Tessera Solar intends to develop an electric-generating facility with a nominal capacity of 850 megawatts (MW) using concentrated solar power. The Calico Solar Project would be constructed on an approximately 8,230-acre (ac) site in the Mojave Desert in San Bernardino County, California. The site is approximately 37 miles east of Barstow, 174 miles east of Newberry Springs, 57 miles northeast of Victorville, and approximately 115 miles east of Los Angeles (straight line distances). The Calico Solar site is located on BLM managed lands.

Argument

The State of California and the Federal government have developed very ambitious goals for the development of renewable energy resources. California for its part has a goal of achieving 33% of its electric energy from renewable sources by 2020 (*see* Executive Order S-14-08). These are important goals and ones that California is justified in pursuing, particularly considering the impending threat of catastrophic climate change. However, California must carefully plan for the sizable infrastructure that will deliver this substantial load of renewable energy, and it must plan well. In order to be successful in implementing the 33% goal, California will need a mix of both distributed generation and utility scale – or “central station” – infrastructure. Many of the utility scale projects are currently proposed for public land with high quality, often undisturbed habitat.

Perhaps nowhere is there a better example of an area with undistributed, high quality occupied habitat than at the Calico Solar Thermal site. It is home to an estimated 189 tortoises (see Second Errata to the Supplemental Staff Assessment, page 5), and has the largest number of individuals of this species that would be affected by any of the proposed renewable energy projects currently under permit review (see Exhibit 601). The site is a known movement corridor for the desert tortoises moving both in an east-west and potentially north-south direction under the railroad trestles and highway underpasses. The Project contains a substantial portion of the Pisgah population of White-Margined Beardtongue (*Penstemon Albomarginatus*), which is the last known occurrence of this species in California. Finally, the Project site provides important foraging habitat and movement corridors for bighorn sheep. Much of the foraging habitat and the entire movement corridor between the Cady Mountains and Rodman, Newberry and Ord Mountains would be destroyed or obstructed.

The Project is well-intentioned. It aims to provide renewable energy for California and to satisfy part of the State’s ambitious renewable energy goals. However, the significant biological impacts on this tract of over 6,000 acres of undisturbed, high-quality habitat simply are not justified. This is particularly apparent when one considers that this is a nascent and unproven technology. As Dr. Barry Butler stated in his testimony on the Sunrise Powerlink proceeding before the CPUC (*see* Exhibit 608), “the current ‘mean time between failure’ is a few hundred hours. This means a great deal of time, effort, and money must be spent on maintenance. This drives up the cost of operating a dish/Stirling Unit. The commercial viability of the Stirling system is unproven at this time.” The potential failure of the individual SunCatcher units and the unreliability of the technology at a utility

scale simply cannot be tolerated when considering the significant, irreversible and unmitigable biological impacts the project entails.

I. The Project Does Not Comply With CEQA.

The Staff Assessment (“SA”) and Supplemental Staff Assessment (“SSA”), staff’s primary exhibits in the hearing, do not identify adequate mitigation measures for significant impacts to biological resources. The California Environmental Quality Act (“CEQA”) requires that public agencies refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. *Mountain Lion Foundation v. Fish & Game Commission* (1977) 16 Cal. 4th 105, 134. Cal. Pub. Res. Code § 21002. The California Energy Commission’s (“CEC”) site certification program is a certified regulatory program, approved by the Secretary of the Natural Resources Agency, and implemented pursuant to CEQA. Cal. Pub. Res. Code § 21080.5. Agencies implementing certified regulatory programs must comply with the basic *substantive* policies established by CEQA, including the requirements to identify significant adverse environmental impacts and mitigation measures. *Sierra Club v. State Board of Forestry* (1994) 7 Cal. 4th 1215, 1236-1237. CEC staff has failed to adequately identify impacts to federally threatened desert tortoise, rare plants, and bighorn sheep, nor propose necessary mitigation measures to reduce those impacts to less than significant levels.

a. The Project Will Result in Significant and Unmitigable Impacts to Desert Tortoise.

The SA concludes that the The Calico Solar Project would have major impacts to the biological resources of the Newberry Springs/Ludlow area of the Mojave Desert, affecting many sensitive plant and wildlife species and eliminating a broad expanse of relatively undisturbed Mojave Desert habitat. SA, page B.2-11. These impacts include the permanent loss of over 6,000 acres of occupied desert tortoise habitat. Of serious concern is Staff’s inability to account for the number of tortoises inhabiting the site. The SA states that approximately 100 tortoises would need to be translocated outside of the Project site. SA, page B.2-12. The SSA states that approximately 57 tortoises would need to be translocated outside the project site (the decrease is apparently due in part to the reduction in Project size). However, the Errata to the SSA, released on August 17, again changes those numbers to 189 tortoises requiring translocation.

The bottom line is that translocation is still an unproven, experimental and risky method of minimizing the take of desert tortoises. Indeed the misconception that translocation is a “mitigation” measure, rather than a “take minimization” measure is a good starting point for understanding how the practice has been abused. Staff witness Chris Huntley stated in the August 18, 2010 hearing that he considers translocation a mitigation measure:

MR. HUNTLEY: Staff assessed -- this is Chris Huntley. One of the mitigation measures is translocation plan, yes it is (*see* August 18 hearing transcript, page 374).

In fact, translocation is not a mitigation measure, but a take minimization measure. If the Project were to be permitted, all of the tortoises on site would be considered “taken” by the U.S. Fish and Wildlife Service and the translocation would simply be a measure to ensure the impact to those animals is minimized. Translocation does not “mitigate” in terms of compensating for the take of the individual tortoises. The Ft. Irwin translocation is now beginning to yield data that shows unacceptably high mortality rates from translocation due to mortality and disease.

Obstructions to movement corridors for the desert tortoise are unmitigable. Although Tessera attempted to maintain a movement corridor in the washes on the northern portion of the site, Mr. Aardahl’s testimony (*see* Exhibit 601) shows that those washes are not sufficient for movement:

Figure 2.6-3 also reveals that the proposed project construction area would result in narrow constrictions of the hypothetical movement corridor due to terrain features of the toe-slope of the Cady Mountains at the eastern and north central portion of the proposed project. These constrictions have not been analyzed for their potential to limit Desert Tortoise movements. Furthermore, based on terrain features associated with north-south drainages on the bajada of the Cady Mountains, Desert Tortoise movements in an east-west direction would naturally be difficult or sometimes impeded depending on the wash depth and bank slope.

Indeed, CEC Staff explicitly stated that they had not conducted a terrain analysis to determine whether the washes in the northern portion of the site could facilitate desert tortoise movement (*see* August 5 hearing transcript, page 178).

MR. BASOFIN: Was there a terrain analysis performed in that area?

MR. HUNTLEY: As I've stated previously, we did not conduct a terrain analysis.

A terrain analysis is essential to showing that there is less than a 20% slope, which is necessary for tortoise movement. If the slopes are greater than 20%, tortoises are likely not able to cross them, and the “corridor” in the northern portion of the site would be non-functional. Indeed, the 1994 Desert Tortoise Recovery Plan states on page 48 that “blocks of habitat that are close together are better than blocks far apart. This arrangement facilitates dispersal of desert tortoises among habitat patches. Connecting habitat segments should be of medium to high quality and be wide enough to accommodate several desert tortoise home-range widths (several miles)...” With a proposed movement corridor of only 4,000 miles, tortoises will unlikely be able to achieve the movement that Staff and Tessera envision as a result of the 4,000 mile reduction.

Additionally, Mr. Aardahl testified that it is much more likely that movements of Desert Tortoises on the Calico project site occur in an east-west and west-east direction in the lower half across more flat terrain (*see* Exhibit 601). These areas, unlike the northern portion where the reduction area is located, actually may provide east-west movement opportunity for tortoises. However, they would be completely obstructed by the Project. Desert Tortoise movement studies within and adjacent to the proposed project have not been conducted. These studies would be essential to understanding movement of the tortoise in the lower half of the project.

Finally, as Mr. Aardahl pointed out in his testimony, not enough information is known about the characteristics of the Calico population of desert tortoise. The SA and SSA did not contain sufficient information concerning age, sex and health of the tortoises to determine how viable the population might be. However, Staff’s Second Errata to the Supplemental Staff Assessment shows that some 96 juveniles and 436 eggs may be present on site, most of which would experience mortality. This high number of juveniles and eggs shows, however, that the Calico population of desert tortoise may be a viable breeding population, which makes the impacts more significant and mitigation more unlikely.

b. The Project Will Result in Significant and Unmitigable Impacts to the White-Margined Beardtongue (*Penstemon Albomarginatus*)

Impacts to the White-Margined Beardtongue (*Penstemon Albomarginatus*) (“Beardtongue”) are significant and unmitigable. Tessera failed to survey and document Beardtongue seed bank in its surveys, which is a serious oversight. Mr. Andre testified that much of the Beardtongue population can persist as seed bank for a long time before germinating

into seedlings. Consequently, a difficult to measure fraction of *P. albomarginatus* genetic diversity remains buried for perhaps six or more years, based on 40% germination of 6-year-old seed stored air-dried at room temperature (see Exhibit 600, page 4). As Mr. Andre stated, because the majority of the population occurs underground, only a small portion of the overall viable distribution of the species onsite could be documented during surveys. The Applicant's surveys failed to consider soil seed bank and underground root/caudex dormancy in assessing the potential number and distribution of white-margined beardtongue individuals at the Calico site. The conclusions made in Tessera's survey reports and the SA that most if not all of the Beardtongue at the Calico site were documented during surveys are therefore significantly in error.

Not only has Tessera not correctly surveyed for Beardtongue, but the mitigation measure proposed is wholly inadequate. BIO-12 proposes avoiding project activities within 250 feet of any protected plant occurrences within project boundaries or adjacent to the site. As Mr. Andre stated in his testimony, "preserving intact habitat and connectivity with surrounding areas are inherent to the most basic principles of conservation biology. To maintain viable populations of whitemargined beardtongue it is crucial to preserve the intact nature of the current, pre-project condition with the rest of the undeveloped Calico/Pisgah sand system (see Exhibit 600, page 6)." The significant impacts to Beardtongue therefore remain unmitigated.

c. The Project Will Result in Significant and Unmitigable Impacts to Bighorn Sheep

As Mr. Aardahl stated in testimony, bighorn sheep in the Cady Mountains have expanded their population from an estimated 50 to over 300 individuals since approximately 1990 based on aerial surveys performed by the Department of Fish and Game. The Cady Mountain herd movements have not been studied through radio telemetry, so little is known about the movements of individual animals comprising the herd. Numerous culverts and bridges occur under I-40 in proximity to the proposed project, and many are of sufficient size to allow the movement of Bighorn Sheep and other species. No wildlife movement studies involving these engineered drainages were conducted as part of the environmental review of the proposed project. Without an understanding of how bighorn move over the railroad tracks and under the I-

40 underpasses, it is impossible to determine if the Project will obstruct an active bighorn movement corridor.

II. The Project Does Not Comply With CEQA or the Warren-Alquist Act's Mandate that the Project Be Capable of Operating Reliably

Tessera has not proven that it is capable of operating its SunCatchers – a Stirling dish/engine technology - reliably at a utility scale. CEC regulations state that the presiding member's proposed decision shall contain the presiding member's recommendation on whether the application should be approved, and proposed findings and conclusions, which include, in part, a conclusion regarding the safe and reliable operation of the facility. 20 CCR § 1752(2). Tessera's operation of the technology is limited to its Maricopa pilot facility, which has only 60 Suncatchers and a total capacity of 1.5 MW. This facility has been operated with mixed results. It has not proven that the technology can be operated at a utility scale without significant failure of the units, which greatly limits availability.

Tessera expert Mr. Reiff stated that the Maricopa facility had achieved 90 percent reliability:

MR. REIFF: Well, that's the benefit of Maricopa. We're learning a lot with regard to they had 63 units there and have been able to maintain 90 plus percent reliability in the first couple of months of operation. That's a pretty good track record.

Notwithstanding the statement of Tessera's consultants stated that the Maricopa plant achieved 90 plus percent reliability, there were also statements that somewhere around half of the 63 units at the Maricopa test facility *did* experience failure, but inexplicably the expert could not quantify the number:

STAFF COUNSEL HOLMES: How many of those 63 have experienced failure, and by failure I mean they did not operate when they were called upon to do so?

MR. VOTAW: There have been failures on a minority or a subset of the engines. The majority of the engines have been running in a steady state since March.

STAFF COUNSEL HOLMES: So 31.5 were left have experienced failure of some sort?

MR. VOTAW: Yeah. I haven't checked the exact number, but --

STAFF COUNSEL HOLMES: That's fine.

MR. VOTAW: -- well over half are running in steady state.

These statements simply do not mesh. If the Maricopa facility was experiencing 90 percent reliability, one would expect that *significantly* more than half of the units would not experience

failure. Tessera's inability to quantify the number of failures at the Maricopa plant is troubling and a sign that the project is still, as Dr. Butler stated, not ready for commercial implementation.

III. The Project Does Not Comply With LORS.

The CEC must ensure that the Project conforms to the Laws, Ordinances, Regulations and Standards ("LORS") applicable for this project. The LORS here include regulations and standards of the BLM. The West Mojave Plan Amendment to the California Desert Conservation Area Plan contains a provision limiting the development of occupied or suitable Beardtongue habitat to 50 acres (*see* exhibit 615). This restriction is applicable to the Project. The BLM California Desert Conservation Area Plan¹ was amended in 2006 through adoption of Alternative B of the West Mojave Plan. The amendment was approved and described in the Record of Decision ("ROD") published by the Bureau of Land Management. The ROD describes Alternative B as follows:

Alternative B: BLM Only. This alternative consists of those elements of Alternative A that are applicable to, and that could be implemented on, BLM-administered public lands. It is applicable to public lands only. This ROD approves Alternative B.

Several conservation measures, including those related to the Beardtongue, were indeed "elements of Alternative A that are applicable to, and that could be implemented on, BLM-administered public lands." Indeed, Table 2-1 of the West Mojave Amendment includes the following language:

Authorized Take of Species: White-margined beardtongue

Take would be allowed for maintenance of existing facilities within the BLM utility corridor and on private land within its range. Limited to 50 acres of occupied and potential habitat. All known occurrences in washes south of Cady Mountains. Known occurrences within the proposed Pisgah Crater ACEC (*see* table 2-1 of the West Mojave Plan).

The following provision regarding Beardtongue, which is in section 2.2.4 (species conservation measures), a section specifically adopted into Alternative B, is applicable to the project:

¹ Bureau of Land Management. 1980. The California Desert Conservation Area Plan. California Desert District, Riverside, CA.

2.2.4.10.23 White-margined Beardtongue

This species is a disjunct with a very limited range within California, all within the West Mojave. Incidental take would be limited to 50 acres of occupied and potential habitat.

As Mr. Andre stated in his testimony, much of the site exhibits potential habitat conditions for white-margined beardtongue and there is considerable evidence that there is far more than 50 acres of potential habitat for white-margined beardtongue on the project site (see Exhibit 600). Therefore, the Project is in violation of section 2.2.4.10.23 of the West Mojave Plan, which, as stated above, is applicable to the Project. This constrains the Committee from approving the Project as proposed.

IV. The Project Does not Meet the Criteria for a Statement of Overriding Considerations

There has been some discussion about a statement of overriding considerations for the unmitigable impacts of the Project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable. CEQA Guidelines, § 15093(a). A statement of overriding considerations must be supported by substantial evidence in the administrative record. *Koster v. County of San Joaquin* (3d Dist. 1996) 47 App. 4th 29, 32. The record here simply does not contain substantial evidence to justify a statement of overriding considerations. The Project is an unproven technology and its biological impacts will be felt for generations. However, considering the number of renewable energy projects (some with proven technologies) waiting in the queue on both public and private land, the Committee should not consider a statement of overriding considerations.

Conclusion

The Calico Solar Thermal project is well-intentioned. However, it has significant problems related to biological impacts and reliability. Of greatest concern among these problems are the significant and unmitigable impacts to desert tortoise, Beardtongue and bighorn sheep

and the unproven nature of the technology. Issuing a site certification for the Project requires a leap of faith that is just too far to jump for the evidence that has been submitted by Tessera.

DECLARATION OF SERVICE

I, Joshua Basofin, declare that on August 24, 2010, I served and filed copies of the Attached Opening Brief. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[www.energy.ca.gov/sitingcases/calicosolar]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

X sent electronically to all email addresses on the Proof of Service list;

X by personal delivery or by depositing in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

X sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

 depositing in the mail an original and 12 paper copies, as follows:

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I declare under penalty of perjury that the foregoing is true and correct.





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APPLICATION FOR CERTIFICATION

For the CALICO SOLAR (Formerly SES Solar One)

Docket No. 08-AFC-13

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(Revised 7/12/10)

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