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REPORT OF CONVERSATION

Siting, Transmission, and Environmental Protection Division

FILE: 11-AFC-2

PROJECT TITLE: Hidden Hills SEGS

☒ **Email**		☐ **Meeting Location:**	
NAME:	Mike Monasmith	**DATE:** 8/07/12	**TIME:** 16:48
WITH:	Chris Huntley, Staff Biologist		
SUBJECT:	Desert Tortoise Mitigation ratios – BrightSource Energy's PSA Comments, Set #1		

Monasmith, Mike@Energy

Subject: FW: Preliminary Staff Assessment Comments, Set 1 for the Hidden Hills Solar Electric Generating System (11-AFC-2). Desert Tortoise Mitigation Compensation Analysis.

From: Chris Huntley
Sent: Tuesday, August 07, 2012 4:48 PM
To: Monasmith, Mike@Energy; Knight, Eric@Energy (Eric.Knight@energy.ca.gov); Watson, Carol@Energy (Carol.Watson@energy.ca.gov); Carolyn Chainey-Davis; Ratliff, Dick@Energy (Dick.Ratliff@energy.ca.gov); Willis, Kerry@Energy (Kerry.Willis@energy.ca.gov)
Subject: Preliminary Staff Assessment Comments, Set 1 for the Hidden Hills Solar Electric Generating System (11-AFC-2). Desert Tortoise Mitigation Compensation Analysis.

Based on information provided by Bright Source Energy (BSE) in the AFC, supplemental reports, and reconnaissance levels surveys of the site by staff, the PSA concluded that impacts to desert tortoise would be significant absent mitigation. To reduce these impacts the PSA recommended a series of conditions of certification including the acquisition of compensatory mitigation lands. Section 5.2.9 (Mitigation Measures) of the AFC proposed a mitigation ratio of 1:1 to compensate for the loss of desert tortoise habitat which could be further reduced if the applicant obtained high quality desert tortoise mitigation lands. However, staff concluded that in order to fully mitigate impacts to desert tortoise higher mitigation ratios were warranted for the proposed project site.

Staff based the mitigation ratios on a number of factors including but not limited to desert tortoise sign, the distribution of desert tortoise on the project site, habitat condition, and the sites geographic location. Based on these considerations staff recommended a mitigation ratio of 1:1 for areas mapped as shadscale scrub and a 3:1 ratio for areas mapped as creosote bush scrub. During the June 2012 workshop conducted in Bishop CA, BSE indicated these mitigation ratios were excessive and did not reflect conditions on the site. BSE informed staff that a supplemental desert tortoise habitat assessment would be submitted to the Energy Commission for their consideration in the assessment of mitigation ratios for the proposed project. Staff indicated at the workshop that they concurred that portions of the site were disturbed and that some areas may have been mapped at a course mapping scale.

On or about July 13, 2012 BSE docketed Preliminary Staff Assessment Comments, Set 1 for the Hidden Hills Solar Electric Generating System (11-AFC-2), Desert Tortoise Mitigation Compensation Analysis. In summary BSE suggests that the habitat quality on the site is relatively low value compared to many areas of the desert and that the current mitigation approach identified in the PSA is excessive and not warranted for this site. BSE identifies in the Desert Tortoise Mitigation Compensation Analysis that a number of factors reduce the habitat value at the site including but not limited to the presence of silty soil types, the surficial geology, the relatively flat topography, existing vegetation patterns, and the presence of weeds. In addition, BSE contends that the number of desert tortoises identified by staff in the PSA is too high and provides a refined estimate in the Desert Tortoise Mitigation Compensation Analysis. BSE further states that language in the PSA indicating that mitigation ratios for the proposed project are consistent with other Energy Commission projects may be oversimplified and suggests a lower mitigation ratio may be more appropriate for the proposed project site. Based on these factors BSE suggests that the site has a low value to desert tortoise and recommends that mitigation ratios should range from between 0.5:1 to 1.5:1 for the proposed project site.

Staff reviewed the Desert Tortoise Mitigation Compensation Analysis provided in Comment Set 1 and conducted supplemental field investigations on August 1st and 2nd, 2012 to further evaluate the site. These investigations were conducted by a wildlife biologist and botanist and included two biologists from the CDFG. As a result of the site visit staff has concluded that the current approach recommended in Comments Set 1 is not supported by the conditions in the field and recommends the Energy Commission does not adopt the proposed mitigation ratios identified by BSE. A concise summary of staff's rationale for rejecting the current proposal is provided below.

- BSE Comment: The Desert Tortoise Mitigation Compensation Analysis suggests that the existing soils, surficial geology, and relatively limited topographical relief limit burrowing sites and forage which reduce the carrying capacity of these areas for desert tortoise. The Map provided in Figure 3 of the Desert Tortoise Mitigation Compensation Analysis classifies these areas as various Holocene alluviums and provides a vegetation map based on soils that identify areas either as shadscale or Creosote bush scrub.

    - Staff Response: Staff acknowledges that areas supporting these general physical features and associated plant communities (often including various alliances of salt bush (*Atriplex* spp.), wolfberry (*Lycium* sp.), and other more salt tolerant plants generically classified as shadscale scrub) often have lower densities of desert tortoise compared to areas supporting more structured soils, complex topography, and associated vegetation types (i.e., creosote bush scrub and others). Published literature also states that soil characteristics (i.e., the ability to maintain a burrow) are important factors in supporting the desert tortoise life histories. In addition, staff concurs that portions of the site where ponding water is present often limits or restricts where desert tortoise may burrow. However, staff considers the Desert Tortoise Mitigation Compensation Analysis to over rely on soil mapping as a key factor in evaluating desert tortoise habitat. Desert tortoises are known to occur in a variety of scrub communities and soil types across their range including various saltbush scrub communities. Desert tortoise are document to occur in areas dominated by saltbush and shadscale communities in a variety of locations including the project site, the northern edge of the Desert Tortoise Natural Area, the northwest edge of the Fremont Kramer critical habitat unit, portions of Cuddeback Dry Lake, and south of Fremont Peak (Dr. K. Berry, USGS Personal Communication August 6, 2012).

      Provided the site supports annual forage and areas that support suitable soils for burrowing these areas cannot be discounted as habitat for desert tortoise. Staff contends that soil conditions on the project site would not preclude burrowing in many areas. In addition, low levels of desert tortoise sign were identified in the areas characterized by poor soil development in the Desert Tortoise Mitigation Compensation Analysis. This included several desert tortoise burrows and a single scat. While the density may be low and there are areas with limited to no sign desert tortoise are present on the site and the area should be considered habitat for the species.

Staff also noted that the Desert Tortoise Mitigation Compensation Analysis identifies large areas of the site as supporting shadscale. Staff believes the vegetation maps identified in Table 3 are reliant on broad scale soil data and do not reflect the actual large areas dominated by creosote bush scrub. This is described further below.

- BSE Comment: The Desert Tortoise Mitigation Compensation Analysis suggests that the existing patterns of vegetation (as a factor of the soil types present on the site) and the presence of weeds limit the value of the site for desert tortoise. The Map provided in Figure 3 of the Desert Tortoise Mitigation Compensation Analysis provides a soil based approach to vegetation mapping and identifies areas either as shadscale or creosote bush scrub. Weed maps were included as part of the AFC and are common in many portions of the project site. BSE indicates that habitat across the site is degraded by the presence of weeds and suggests the functional capacity of the site to support desert tortoise is compromised.

    - Staff Response: Staff considered the site conditions, vegetation structure, and presence of weeds in the evaluation of impacts to desert tortoise in the PSA. In addition, staff acknowledges that the vegetation maps in the AFC appear to be broad and course in scale and likely over represented the creosote bush scrub communities that are present on the proposed project site. The PSA also recognizes that the distribution and detection of desert tortoise and their sign varies between these plant communities and mitigation ratios in the PSA take into consideration these differences. As noted in the PSA the recommended mitigation ratios were 1:1 for areas characterized as shadscale scrub and 3:1 for areas mapped as creosote bush scrub. Refining the maps to better reflect these plant communities is recommended and would be considered in the FSA. However, the revised maps presented in Table 3

appear to under represent creosote bush scrub communities in at least two areas. While portions of the revised mapping appear to more accurately define where creosote bush scrub and shadscale communities intergrade, several large areas appear to have been mapped incorrectly. Ground truthing by staff identified large areas (i.e., approximately 200-300 acres) of vegetation incorrectly mapped as shadscale scrub in the southern portion of the project site and a thin polygon located at the north eastern portion of the project site. Vegetation in these areas was identified as creosote bush scrub by the staff botanist. Staff recommends that BSE revise the maps to better reflect the existing vegetation communities rather than rely on soils based vegetation maps.

- The PSA also acknowledged that invasive species are known to degrade desert tortoise habitat. Similarly, the PSA identified that weeds are common in many areas of the proposed project site. However, staff considers much of the project site to support relatively intact desert tortoise habitat. Weeds are common across most of the range of desert tortoise and the weed densities on the project site, while local dense in many areas (i.e., along roads and some fields), are not abundant in large areas characterized as creosote bush scrub. Despite the presence of weeds, botanical surveys conducted by BSE on the project site, reported a wide variety of annual and perennial plant species. Similarly, the wide distribution of sensitive plant species and biotic crusts that occur across the project site suggests that large portions of the site still retains a relatively high percentage of intact habitat.

- Weeds by themselves do not displace desert tortoise provided they do not form a complete monotypic cover and the site retains an adequate composition of annual plants for foraging. Much of the site still retains areas dominated by native cover with relatively intact soils. While there are areas on the site where local infestations reduce forage value the site still retains habitat for desert tortoise. In addition, desert tortoise burrows were mapped by the applicant in the AFC and staff noted additional burrows not previously recorded in the AFC in both shadscale and creosote bush scrub communities supporting various densities of weeds.

- BSE Comment: BSE contends that the number of desert tortoises identified by staff in the PSA is too high and provides a reduced estimate in the Desert Tortoise Mitigation Compensation Analysis.

  - Staff Response: The information used in the PSA to estimate the number of desert tortoise that may occur on the proposed project site was obtained in Appendix 5.2 F (Desert Tortoise Survey Report) of the AFC. This range was based on the USFWS predictive model and included desert tortoises that were found within 150 meters of the proposed project site. Staff utilized these numbers as a base for extrapolating the expected levels of adult, sub-adult, and juvenile desert tortoises and their eggs based on the calculations of Turner et al (1985). As presented in the PSA the preliminary data provided by the applicant indicated that between 6 and 33 adult and subadult desert tortoises may occur on the project site and within a 150 meter buffer. Staff concurred with the original assessment provided by BSE that tortoise found within 150 meters of the project boundary may include portions of the project site as part of their home range. Therefore staff included this data in the PSA analysis as the project has the potential to result in direct and indirect impacts to those animals.

    As described in the PSA the USFWS is a predictive model used to provide estimates of desert tortoise numbers that may occur on the project site. It is not a definitive tool and cannot predict the actual number of desert tortoises that may use a given site. Staff considers the failure to include animals that are immediately adjacent to a site to pose the risk of under representing the realized density of animals on the proposed project site. Conversely, animals counted on a site, particularly on the margins may only include portions of the site for their home range and may be not be detected during later surveys. While staff understands the approach taken by BSE for evaluating potential desert tortoise numbers on the site, staff considers the values presented in the PSA to be valid with the caveats included in the assessment.

Staff also disagrees with the statement made on Page 10 of the Desert Tortoise Mitigation Compensation Analysis that indicates "These results appear to be interpreted by the CEC to suggest that the project may support more tortoises than would be reasonably expected to occur in the compromised site". BSE has not provided any evidence to suggest the existing numbers and distribution of desert tortoise on the project site are currently limited or the site has reached its theoretical carrying capacity. Desert tortoise densities vary widely in the Mojave desert and includes areas supporting weedy invasive plant species. In addition, as stated in the PSA there are any number of factors that affect the distribution of desert tortoise on the project site. These include historic disturbance, weeds, illegal collection, disease, grazing, dogs, and drought. While staff concurs that tortoise density appears more concentrated on the eastern portions of the project site there is no data to suggest the population is currently limited by existing habitat conditions. It is just as possible that the population on the project site is recovering and may expand over time; however the current data does not provide for this analysis.

- BSE Comment: BSE states that the language in the PSA indicating the mitigation ratios in the PSA are consistent with other Energy Commission projects is oversimplified and suggests a lower mitigation ratio may be more appropriate for the proposed project site.

    - Staff Response: Staff agrees that the text in the PSA reading "This mitigation ratio is consistent with past Energy Commission mitigation requirements for projects with impacts to desert tortoise (for example, High Desert Power Plant Project, Calico Solar Energy Project, and the Victorville 2 Hybrid Power Project), and with Incidental Take Permits issued by CDFG for other non-Energy Commission jurisdiction projects in the region…" is oversimplified. However, BSE also fails to accurately characterize the rationale for each of the projects identified in Table 4 of the Desert Tortoise Mitigation Compensation Analysis. As with the proposed project staff conducted an individual site assessment and impact analysis for each of the projects identified in Table 4. Mitigation ratios were then assigned based on factors including but not limited to the site location, the size of the project, the type and composition of habitat present, number of desert tortoise present on the site and their distribution in the region, how the site impedes or constrains regional or local movement, and cumulative impacts. In addition, some projects were sited on historically and active agricultural lands and abutted areas with diminished habitat values. Similarly, other projects such were confined by development.

      For the proposed project site the PSA analysis concurred with the 1:1 mitigation ratio originally suggested by BSE in the AFC for all areas supporting shadscale communities. The PSA analysis found that a 1:1 ratio for areas supporting creosote bush scrub, where higher densities of tortoise were detected, warranted a mitigation ratio of 3:1.

- Conclusions: Desert tortoise and their sign have been detected in varying densities across the majority of the project site with the exception of the southwestern corner of the site. Desert tortoises are known from the region and occur to some degree in areas surrounding the site. Large areas of relatively intact habitat border the site with the exception of the community of Charleston View. Staff acknowledges in the PSA that portions of the site are degraded and likely support few desert tortoises. However, both staff and CDFG consider most of the project site to still be characterized as desert tortoise habitat. Based on the existing data, distribution both on and adjacent to the site staff does not consider the Desert Tortoise Mitigation Compensation Analysis to provide a reasonable mechanism to fully mitigate impacts to desert tortoise. Staff does recommend that the vegetation maps me revised and resubmitted to more accurately reflect vegetation communities and disturbed communities on the project site.