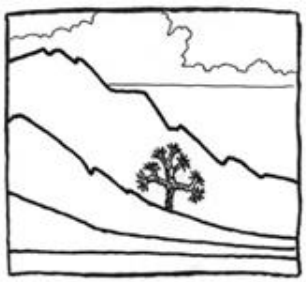

Basin and Range Watch

July 21, 2012,

To: Mike Monosmith
Project Manager
Sitting, Transmission and Environmental Protection (STEP) Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814
E-mail: mmonasmi@energy.state.ca.us

Dear Mike,

We would like to submit the following comments for the Preliminary Staff Assessment (PSA) for the California Energy Commission staff's independent analysis of the proposed Hidden Hills Solar Electric Generating System (HHSEGS). CEC-700-2012-003-PSA DOCKET NUMBER 11-AFC-02.

Basin and Range Watch is a group of volunteers who live in the deserts of Nevada and California, working to stop the destruction of our desert homeland. Industrial renewable energy companies are seeking to develop millions of acres of unspoiled habitat in our region. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems and open spaces.

Alternatives:

The PSA fails to analyze a full range of reasonable alternatives. Missing from the PSA are alternatives that would consider private lands outside of the area.

An off – site alternative should be considered in areas like the Central Valley of California or other disturbed or degraded lands.

The US Environmental Protection Agency has identified over 15 million acres of degraded lands or "brown-fields" in the United States that would be appropriate for large scale renewable energy development. http://www.sustainablebusiness.com/index.cfm/go/news.display/id/23646

While siting the project outside of the area may not be financially feasible for BrightSource, many exceptions have been made in both the NEPA and CEQA review process for their Ivanpah project to expedite construction. This favors the goals of the developer, but over-rides the concerns of those of us who oppose these projects.

The CEC fails to analyze the distributed generation alternative which is a win/win energy situation for all of us. The justification is for the convenience of BrightSource. The CEC reviewed the DG alternative for other projects including Ivanpah, Genesis and the now bankrupt but approved Imperial Project.

Distributed generation in the built environment should be given much more full analysis, as it is a completely viable alternative. This project will need just as much dispatchable baseload behind it, and also does not have storage. But environmental costs are negligible with distributed generation, compared with this project. Distributed generation cannot be "done overnight," but neither can large transmission lines across hundreds of miles from remote central station plants to load centers. Most importantly, distributed generation will not reduce the natural carbon-storing ability of healthy desert ecosystems, will not disturb biological soil crusts, and will not degrade and fragment habitats of protected, sensitive, and rare species.

Alternatives should be looked at that are in load centers, not closest to the project site. There is a need to consider the "macro" picture, the entire state, to look at maximum efficiency.
A master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources on public lands. A list of assumptions should be included detailing the plan for integrating various fuels mixes and technologies into each utility's plan, an overall state plan, and a national plan. Loads should be carefully analyzed to determine whether additional capacity is needed for peaking, intermediate, or baseload purposes. Unit size, which impacts capital and operating costs and unit capacity factors, has a direct bearing on the relative economics of one technology over another. A plan might recommend that smaller units built in cities and spaced in time offer a less risky solution than one large unit built immediately.

Right now there is no utility plan, no state plan, and no national plan. Large-scale central station energy projects have been sited very far from load centers out in remote deserts, with the only criterion being nearness to existing transmission lines and natural gas lines. Very little thought has been given to the richness of biological resources, the cumulative impacts on visual scenery to tourists, the proximity to ratepayers, or the level of disturbance of the site.

There will be a need to build many new efficient natural gas peaker or baseload plants to back up the renewable projects planned. Instead, the renewables should be distributed generation in load centers, which will provide much more efficiency, rather than inefficient remote central station plants that reduce biodiversity and require expensive transmission lines. This reduces the risk, as distributed generation is a known technology and has been proven in countries like Germany where incentive programs have been tested. Incentive programs can be designed in an intelligent manner to vastly increase distributed generation. Incentives for large remote projects are unproven to lower risk and may actually raise debt levels with runaway costs associated with poor sighting and higher-than-anticipated

operating and maintenance costs. Many renewable project developers have failed to consider reasonable or viable alternatives that could serve as solutions that everybody could live with. In the case of this particular project, conflicts with endangered species, cultural resources, storm water drainage erosion, viewscapes from National Parks and wilderness areas could all be avoided with a distributed generation alternative.

The CEC rejects a smaller project footprint alternative because "The applicant concludes that a smaller plant "would not feasibly accomplish most of the basic objectives of the project and would not avoid or substantially lessen one or more of the significant effects. Furthermore, a smaller plant may result in an inefficient use of the land by failing to fully realize the solar potential of the area."

It appears that the CEC rejected this alterative for the benefit of BrightSource. The people who oppose this project are not concerned with the problems of feasibility and solar potential for BrightSource. Alternatives that are not feasible for the applicant should still be considered. If the applicant cannot meet the objectives of these alternatives, it could be a justification for No Action or considering another application. Such alternatives could still be considered for potential future applicants.

Visual Resources: Even though the project would be built on private lands, the massive horizontal and vertical scale of the project will have three-dimensional cumulative visual resource impacts that could have damage view-sheds over 50 miles away. We agree with the statement on page 4-13-2: "Project impacts, in combination with existing and foreseeable future solar and other development projects within the greater Pahrump Valley, including both California and Nevada, would contribute to a perceived sense of industrialization of the open, undeveloped desert landscape and impact views of scenic resources in the Pahrump Valley viewshed, having the potential to be significant and unavoidable."

All of the viewsheds that could be potentially be impacted by HHSEGS should be viewed under BLM Class One VRM standards due to the immense size of the project foot print. Just about every acre of the project has the potential to impact the view from surrounding wilderness and residential areas. BLM VRM analysis are often insufficient to review projects spanning 3 to ten square miles.

The KOP Visual simulations are incomplete. There are not enough simulations representing upper bajada or mid-elevations from wilderness areas. There are not enough simulations from high elevations from BLM and Forest Service Wilderness Areas. There is no simulation of night lighting. There are no KOP simulations of flash-glare events. There are no KOP simulations of dust plumes that would occur from construction.

The below photo was taken looking towards the project site from Bonanza Peak, about 9,500 feet up in the Mt. Charleston Wilderness Area, in the Toiyabe National Forest, Nevada. Glare from the towers and the heliostats will be visible from this view. A KOP representing high elevations is needed.

Flash Glare from heliostats can occur from many different locations at different times of day at different times of year. It will be more likely to occur and be seen from mid -bajada to mountain top locations. We would like to see at least 4 KOP simulations of flash glare from different elevations around the project area.

The below photo is actual flash glare from the Nevada Solar One plant near Boulder City, Nevada. While this is a different technology, it still incorporated the reflective use of sun. Similar events can be expected from the HHSEGS Project.

More KOP simulations should be made of the Stump Spring Area of Critical Environmental Concern (ACEC). Because part of the conservation management objective for this ACEC is to maintain the historic quality of the area for the Old Spanish Trail, we believe the visual impacts will be particularly impossible to mitigate. Not only would the power towers and heliostat flash glare impact the ACEC, but the Valley

Electric Transmission Project will be sited right next to Stump Spring. Efforts to mitigate the visual impacts with planted trees will not be effective because the towers and the powerlines will be very tall. Planted trees will look unnatural and require too much water to maintain. It is not likely that they will all survive. Efforts to mitigate visual impacts by building interpretive signs and a visitor center will also be ineffective. Again, there is no way that these efforts can hide such large industrial visual intrusions. It is a value call by the agencies to determine that a visitor center would somehow offset a visual intrusion. It is not a value that makes sense to us.

Below is a view from Stump Spring looking towards the location of the proposed 550 KV Valley Electric Transmission Line. A KOP simulation of the transmission line should be provided from this view:

We believe the following Key Observation Points should be analyzed and added:

1. More from the 5,000 foot elevations from adjacent wilderness areas such as the Nopah Range Wilderness.
2. KOP simulations from higher elevations from the Spring Mountains National Recreation Area
3. Dark Sky and night lighting KOP simulations
4. More simulations from the Stump Spring Area of Critical Environmental Concern.
5. Multiple simulations depicting flash glare events from different locations.
6. Simulations of worst case scenario dust plumes during construction.
7. There should be one KOP depicting browning or dying vegetation at Stump Spring to simulate the worst case scenario of water draw down and how it may impact the spring. Water draw-down at Stump Spring can be considered a visual impact as well as an ecological impact.

Cultural Resources: We agree with the conclusions in the PSA that the Hidden Hills Project and the proposed Valley Electric Transmission Project will have adverse impacts to the Old Spanish Trail.

Dust from construction, noise from construction, flash glare events from the project, very bright receiver towers, and flashing night time aviation lights will all degrade the remote and historical feel of Stump Spring.

We agree with the following statement in the PSA: "While not all of the traces on the project site have been ground truthed, it is clear that the project site lies squarely among all of these tracks/traces and, therefore, within the OST-MR Northern Corridor, a regionally and nationally significant travel/trade

corridor that aided the exploration and shaped the development of the southwestern United States. Although not formally included in the Act, staff has concluded that these tracks/traces should also be considered part of the Old Spanish National Historic Trail. As such the Corridor is a historical resource for the purposes of the CA Environmental Quality Act and potential impacts resulting from the proposed project must be evaluated. The proposed project has the potential to significantly impact the OST-MR Northern Corridor by erasing traces/trails on site and visually impacting traces/tracks off site, which could jeopardize the integrity of the OST-MR segment in the Pahrump Valley." (quoted from pp. 70-71)

The CEC is recommending the following mitigation measures for damage to cultural landscapes:

"CUL-9 calls for the project owner to fund and contract for a study by OSTA of the OST-MR Northern Corridor. CUL-9 details steps that must be included in the study."

" CUL-10 calls for the project owner to construct and maintain an Interpretive Center, with parking, and interpretive panels highlighting the visual and cultural resources that will be adversely impacted by the HHSEGS project. Again, CUL-10 details steps and features that must be included in the interpretive center."

These are value judgments by the CEC. We do not think that funding a study will do much of anything to offset the intrusions to the experience that large power towers and transmission lines would have on the visitor to Stump Spring or the Old Spanish Trail in general. It's almost as if you are telling us that we would feel better looking at these intrusions knowing that BrightSource is funding a study. That is a far stretch for mitigation.

Even more ridiculous is the idea that a visitor center with a lot of parking spaces would somehow off set the impacts to the Old Spanish Trail. If anything, a new visitor center will add a modern looking component to the Old Spanish Trail and the presence of more big bulldozers and dust plumes is exactly what we are trying to avoid out there.

The impacts to the Old Spanish Trail and Stump Spring should be reason enough for the CEC to choose either the No Action Alternative or look at an alternative for a different location or a different technology.

Socio-Economics: Large energy projects like this tend create a boom and bust effect on small economies. In the case of the Hidden Hills Project, BrightSource is proposing to place intrusive industry right next to a small residential community and close to the communities of Sandy Valley and Pahrump. Initially, the economy would boom to a point during construction, but after construction, a limited amount of full time jobs would be created and any future potential for a housing community or increased tourism has been sacrificed for one company. Placing an unsightly industrial complex on the Old Spanish Trail Highway will tend to drive people away from places like Tecopa and the businesses there. The community of Pahrump originally was quite supportive of the Hidden Hills Project until they realized that BrightSource is more committed to employing Union workers from the State of California. Like their Ivanpah Project right next to the Nevada border, they are closer to a workforce in Nevada, but are having people travel a long way from California to satisfy the commitment to California unions. The state of Nevada gets a small economic benefit from all of this. Only about ten percent of the workers come from Nevada.

Inyo County, California has been concerned about having to flip the bill for emergency response to fires, medical, etc. and they do not have the resources to pay for all emergency services. These BrightSource projects have never been tested at the large scale they are being built. The Ivanpah Project has been reconfigured a few times. The site has been flash flooded and the company wants to change the design to burn more natural gas.

As residents and tax payers of Nye County just over the state line, we are concerned that our county will be financially burdened with dealing with any potential emergencies that come up for this project. We do not want to have to flip the bill for the consequences of a poorly planned and expedited review for this project. The CEC did not give the public nearly enough time to adequately review the 1,159 page PSA. We would like to once again ask the CEC to slow things down, give us another two to five years to review this project before you make a decision that we will all be sorry for. Please resist the temptation to "Over-Ride" all of the issues that cannot be mitigated. We are very concerned about the way the CEC gives very thorough review to these projects and as in the case of the Imperial Project (and several others), implemented "Over-Rides" to all of the issues they could not come up with mitigation solutions for. In the case of the Imperial Project, that was about 90 percent of the issues.

Biological Resources:

The PSA does a thorough job of analyzing the impacts that the HHSEGS Project would have on biological resources. We would like to emphasize our concerns in the comments below:

The CEC has determined that the Stump Spring Area of Critical Environmental Concern could be in danger of water draw down from efforts by BrightSource to control dust, wash heliostats, and cooling turbines. Stump Spring has already been impacted by water over-draft in the basin. Water draw down has impacted the spring to the point where surface water is now only confined to 3 seasonal pools, but there is still an abundance of riparian habitat that supports much of the wildlife in the region. The potential removal of this spring could have unrivaled consequences to the biological diversity in the region.

The close proximity of the HHSEGS Project to Stump Spring makes the region's wildlife particularly susceptible to the solar flux treat. Stump Spring provides a very important habitat for the region's avian fauna.

Mesquite is abundant and provides ample wildlife habitat. The PSA states that the mesquite in the area predate the sand dunes. Because it is difficult for mesquite seeds to germinate in sand, Stump Springs may be a unique, relic population of mesquite which would make it even more vulnerable to water draw down.

Stump Spring will likely see impacts from invasive weeds that will spread as a result of the industrial removal of 3,300 acres of habitat.

Avian Fauna: The PSA provides a list of bird species that were observed during the surveys. The PSA also provides a list of rare and sensitive birds that may occur at the spring.

We would like to add these photos of a juvenile Swainson's hawk (*Buteo swainsoni*) that we observed at the spring in June of 2012. The Swainson's hawk is a California Department of Fish and Game Threatened Species and a Species of Special Concern with the Fish and Wildlife Service.

Solar Flux: The solar flux issue is documented from the old Daggett Power Tower (now taken down). The issue of avian fauna getting injured or burned to death from power tower solar flux is not close to being resolved. This is primarily because the largest power tower in operation is in Spain and is not much taller than 150 feet. The only official study that we are aware of is the paper AVIAN MORTALITY AT A SOLAR ENERGY POWER PLANT, by Michael D. McCrary, Robert L. McKernan, Raplh W. Schreiber, William D. Wagner, and Terry C. Sciarrotta, Journal of Field Ornithology, 57(2): 135-141, found that Solar 1 during 40 weeks of study, caused 70 bird fatalities involving 26 species, most from collisions with both heliostats and tower, but thirteen (19%) birds (of 7 species) **died from burning in the standby point**. Heavily singed flight and contour feathers indicated that the birds burned to death. Six (46%) of these

fatalities involved aerial foragers (swifts and swallows) which are apparently more susceptible to this form of mortality because of their feeding behavior.

Other than a study being conducted for the 100 foot BrightSource power tower in Israel, there is very little data out there other than the fact that we expect this to be a big problem with avian mortality. The solar flux issue came up in extended debate during the Ivanpah Solar Electric Generating System proceedings. At the time (and this still stands because Ivanpah has not been activated yet), there was no resolution for the solar flux issue in Ivanpah Valley. Even though Clark Mountain is a sky island and is known to have a series of rare birds that migrate and utilize the white fir forest close to the summit, the project was approved with no adequate mitigation to prevent solar flux from killing the birds. The HHSEGS project may have an identical issue with birds using the relic white fir forest located on Kingston Peak within view of the HHSEGS project. Many may be the same birds that use the Clark Mountain Sky Island.

The PSA also fails to analyze the full impacts that flux could have on many individual species. The burrowing owl does not glide, but can fly to very high elevations. While it is more likely for a turkey vulture or a golden eagle to be injured or killed by flux, species like the burrowing owl are still at risk. The Altamont Pass Wind Farm is estimated to kill 100 burrowing owls *(Athene cunicularia hypugaea*) per year. Of course, a wind turbine and a solar receiver tower with heliostats are two different things, but many feel that solar flux may be more dangerous to birds than wind turbines.

We would like to request a study on which birds would and could be impacted by flux. The PSA should list flux as a risk to the burrowing owl.

Here is the link for the Altamont Pass wind farm burrowing owl kill numbers:
https://www.biologicaldiversity.org/campaigns/protecting_birds_of_prey_at_altamont_pass/pdfs/Burrowing_Owl_Fatalities_APWRA.pdf

The three towers at Ivanpah are 450 feet tall and nobody has any clue as to how many birds will be killed by flux. The HHSEGS Project towers will be over 700 feet tall and it appears that the agencies are ready to approve this before they even know the scope of risk that would be caused by flux.

We would like to request that the solar flux issue be studied in Ivanpah Valley after the BrightSource plant is activated. This study should go on for 3 years before approval of the HHSEGS Project is even considered. You simply do not have enough data and information to convince us that the HHSGS Project will not cause a permanent reduction of the avian fauna in the region.

Golden Eagle *(Aquila chrysaetos)*:

The HHSEGS Project will remove 3,200 acres of foraging habitat for golden eagles and eagles stand a good chance of getting killed by the solar flux problem. The project area has been known as a golden eagle hot spot for some time now. Surveys uncovered 19 golden eagle nests within ten miles of the project site. As it stands now, Take permits are very difficult to issue under the Bald and Golden Eagle Protection Act. Attempts to issue the first Take permit for eagles for the West Butte Wind Farm in Oregon are currently under litigation.

At this point, we see no ideas for mitigating or preventing golden eagle kills with the solar flux issue.

Desert Bighorn Sheep *(Ovis canadensis nelsoni):*

Part of a carcass of a bighorn sheep was found on the project site years ago; Bighorn sheep do not "accidentally" use habitat, sheep have reasons for occupying an area and the Hidden Hills project site may be connectivity habitat between the Spring Range, the Kingston Range, and the Nopah Range. This occurrence should not be looked at as an anomaly, but as part of the normal range of the bighorn sheep here. These metapopulations need to maintain connectivity for genetic health, and landscape-level obstacles and barriers will hinder movement across valleys and alluvial valley sides. No mitigation can replace this function of habitat and regional geographic movement corridors. Some lower areas, fans, and valley floors are only used on rainy years when vegetation provides forage, making these habitats even more important to protect. Wherever an animal is found is its habitat.

The goal of conservation biology is not to protect individual animals, but to protect populations in a landscape, as well as the ecological processes that occur at the landscape level. This must include all habitat areas including those with irregular use such as valley floors.

In order to understand and possibly be able to mitigate bighorn movement corridors in the area that may be impacted by the project, a study and monitoring plan should be undertaken. This plan should seek to understand population connectivity in this landscape, and could use such methods as least-cost modeling of dispersal costs for each habitat type in Pahrump Valley and surrounding mountain ranges, and dispersal paths between metapopulations based on genetic studies and expert opinions. The plan should include a GIS map of migration rates for bighorn sheep and connectivity models. After this modeling has been completed and a reasonable hypothesis of gene flow predicted for the area, a conservation strategy can then be developed for the bighorn in the local area (see Optimizing dispersal and corridor models using landscape genetics. 2007. Epps, C. W., Wehausen, J. D., Bleich, V. C., Torres, S. G. and Brashares, J. S. Journal of Applied Ecology 44: 714–724).

Kit fox (*Vulpes macrotis)* and American badger (Taxidea taxus):

Because of the growing outbreak of canine distemper in Desert kit foxes along the I-10 corridor in Riverside County, possibly associated with passive relocation and hazing of the kit foxes from their home territories on large-scale solar project construction areas and associated transmission lines, we request the applicant be responsible for a Regional Kit Fox Monitoring Plan in the Pahrump Valley. There is a possibility the disease could spread to Inyo County, or a new outbreak occur, and monitoring must be undertaken to ensure the Desert kit fox does not decline in population.

Because of the potential declines observed over much of the range of the kit fox (see Meaney et al. 2006) the kit fox should be treated as a potential sensitive species or species of special concern. It is a fully protected fur-bearing mammal in California Department of Fish and Game code.

The applicant should be required to test for canine distemper in kit foxes impacted directly and indirectly by the project. Fenced areas should be monitored for any kit foxes climbing back into active construction areas. Surveys should be undertaken to count how many kit foxes are in the area and ten-mile buffer zone around the project, to set a baseline for an ongoing monitoring program. Fencing to exclude kit foxes should be described. Hazing techniques should be explained in full detail for public review. A plan to address any distemper outbreak should be formulated. A plan for contacting California Department of Fish and Game and a veterinarian should be in place. A monitoring plan should be ongoing for five years after construction.

The American badger should also be included in a monitoring plan, in addition to kit fox.

Reference:

Meaney, C.A., M. Reed-Eckert, and G.P. Beauvais. (2006, August 21). Kit Fox (*Vulpes macrotis*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: http://www.fs.fed.us/r2/projects/scp/assessments/kitfox.pdf [date of access].

Desert Tortoise: *(Gopherus agassizii)*

We request that mitigation ratios for shadscale scrub habitat on the project site be mitigated at a 3:1 ratio when purchasing compensatory habitat, similar to the ratio proposed for Mojave Desert creosote scrub. Although sometimes thought of as "lower quality" habitat, the shadscale scrub we examined near the project site appeared to be very good Desert tortoise habitat, with many active tortoise burrows among the shadscale. Basing habitat occupancy estimates by merely looking at maps or models should not replace on-the-ground surveys for sign and animals. We believe the shadscale scrub habitat in this area is high quality tortoise habitat and should be mitigated at a higher ratio than 1:1.

Below is a photo of an active desert tortoise burrow that we found in shadscale scrub habitat adjacent to the site:

Tortoise Relocation: At the workshop in Bishop, California, BrightSource stated that they wanted to move the tortoises to a small strip of land near the Nevada border. They would put them on the California side in order to avoid regulations that prohibit moving tortoises from state to state. BrightSource is going to request that state agencies change the rules for this project. We understand that BrightSource feels that this is the best habitat to move the tortoise to, but we also feel that state regulations can be useful tools in conservation. We are concerned that any changes to state law would set a precedent and overall weaken conservation laws. We are worried that these rule changes could be used for other big utility scale solar and wind projects.

The HHSEGS Project will cut off and remove 3,200 acres of desert tortoise habitat. The massive footprint will not only destroy habitat, but also block connectivity corridors. According to the PSA, as many as 33 adults, 34 juveniles and 158 eggs could be on the site. This indicates a healthy, functioning population.

Complications from relocation could lead to respiratory disease outbreaks and predation. BrightSource has already removed and compromised a good functioning desert tortoise population in Ivanpah Valley. The CEC should think twice before permitting removal of yet another 3,200 acres of habitat.

Rare Plants:

Below is the list of rare plants we have that could occur on the site and in the area. Some are in the PSA, some are not:

Aliciella humillima (medium – soon to be listed by CNPS)

Aliciella triodon (medium)

Arctomecon merriamii (medium)

Asclepias nytaginifolia (low)

Astragalus geyeri var. *geyeri* (low)

Astragalus mohavensis var. *hemigyrus* (low)

Astragalus nyensis (low)

Astragalus preussii var. *preussii* (likely)

Astragalus sabulonum (known)

Astragalus tidestromii (high)

Atriplex longitrichoma (high)

Bouteloua trifida (low)

Camissonia boothii ssp *alyssoides* (low)

Camissonia boothii ssp *boothii* (low)

Chaetadelpha wheeleri (low)

Chamaesyce parryi (medium)

Cryptantha costata (medium)

Cryptantha insolita (low)

Coryphantha chlorantha (low)

Cordylanthus parviflorus (medium)

Cymopterus gilmanii (medium)

Cymopterus multinervatus (low)

Enceliopsis covillei (low)

Enceliopsis nudicaulis var. *corrugata* (low)

Eriogonum bifurcatum (high)

Eriogonum contiguum (medium)

Eriogonum hoffmannii var. *robustius* (low but habitat present)

Gilmania luteola (low)

Iva acerosa (low)

Loeseliastrum depressum (low)

Mentzelia leucophylla (low but habitat present)

Mentzelia polita (medium)

Mortonia utahensis (low)

Oenothera cavernae (low)

Pediomelum castoreum (medium)

Penstemon bicolor ssp. *bicolor* (low)

Penstemon bicolor ssp. *roseus* (low)

Penstemon fruticiformis ssp. *amargosae* (low)

Penstemon stephensii (low)

Penstemon utahensis (low)

Perityle intricata (low)

Petalonyx thurberi ssp. *gilmanii* (low)

Phacelia coerulea (low but habitat present)

Phacelia filiae (low)

Phacelia parishii (medium)

Phacelia pulchella var. *gooddingii* (known)

Physalis lobata (medium)

Polygala heterorhyncha (low)

Sclerocactus johnstonii (medium)

Sibara deserti (low)

Sphaeralcea rusbyi var. *eremicola* (high)

Stipa arida (low)

Tripterocalyx micranthus (low)

Water:

Stump Springs to the east of the project is a valuable resource, and the wells of local residents in Charleston Heights are also an issue that need protection. Groundwater declines from project pumping should be limited to close to zero at the springs. The applicant did a well pump test at the request of the California Energy Commission to learn more about the aquifer in the area, but the interpretations of the data were widely divergent between the applicant and the Energy Commission hydrologists.

There was disagreement about the characterization of the groundwater basin at a June 14, 2012 workshop in Pahrump. The CEC hydrologist said the data fit a fully confined aquifer characterization better. They believed drawdown could reach Stump Springs at 30 years, and could even be several feet of lowering. There is still enough uncertainty. As for leakance, the hydrologist said not enough data was collected for a long period, there could be temporary leakance. The recharge must be looked at not locally but for the whole aquifer, and all evidence indicated the Pahrump Valley aquifer was not recharging.

Storage is extremely low other tests showed. There may be confining units such as clay beds at Stump Springs, that a drawdown could impact. The Energy Commission hydrologist said the applicant needed to reach out much farther in their analysis, and we agree. A gradient in a confined system is not a source of recharge.
CEC wanted the applicant to have 3 monitoring wells outside the project in a line with the proposed project wells, all at 1,000 feet deep, and we recommend this as well. Two upstream from the project and one downstream. Triggers should be required as new mitigation, such as sending out biologists to monitor how the deep-rooted mesquite at Stump Spring react, and if they appear to be adversely affected. CEC said if they see a half-foot drop in water at the project boundary, then the assumption could be made that pumping might be affecting Stump Spring.

We agree with the CEC that groundwater pumping by the project would need mitigation. Mitigation Measures Water Supply 1, 6, 7, and 8 to offset impacts to overdraft in the basin and potential impacts to

local well owners and nearby springs are needed. We also recommend, in contrast with CEC, that there might be potential impacts to the Amargosa River drainage from unstudied connections with the Pahrump Valley aquifer; mitigation measures should be enacted.

A Water Supply Plan showing how the applicant will replace 163 AFY per year as a condition of certification in Water Supply-1 should be completed before approval and certification of the project so that the public can review this important plan. How do we know there are even enough private wells and water rights to purchase and retire?

Similarly, a Groundwater Level Monitoring, Mitigation, and Reporting Plan (Water Supply-6) should be prepared now, before certification, so that the public -- and especially local residents -- can review the plan. There is a lot of deferred mitigation in this review. If project pumping lowers residents' well levels by 1.5 feet then the applicant should reimburse the well owners. We believe ten feet lowering is too much and damage may already be done to resident's ability to have a reliable water supply.

Saying that the applicant will simply reimburse local well owners if their well goes dry to dig a deeper well, is not acceptable. There may come a point when no depth can be reached to water, so extreme is overdraft. The project should be not be approved if this is a possibility.

The Amargosa Conservancy pointed out that their pump tests in cooperation with US Geological Survey in the Amargosa Valley showed surprising results. Some areas that were supposed to have water did not. Past Yucca Mountain Nuclear Repository testing, which was very extensive in Amargosa Valley, showed a complex picture of drilling hitting carbonate rocks at 200 feet and in other areas 2,000 feet -- there are buried mountain ranges under the valley sediments, it is not just a big fill basin. The Conservancy said the applicant's pump test was inadequate. They want more monitoring wells farther out, towards California where unknown and potential connections with Amargosa Valley could be present. We support this recommendation, as more needs to be studied about the complex hydrology of the region before more drawdown is allowed. A regional groundwater map should be made, and more well testing should be undertaken before approval of this project.

Impacts to Local Communities:

We see this all of the time. A big energy developer (usually subsidized) comes to a small community, promises everyone a job and offers to buy the town something like a community center. The projects are usually built right next to people's homes (as in the case of Charleston View). Most of the people have trouble selling their property and do not have the resources or finances to move. Their quality of life goes downhill while the developer makes money and usually does not share that with anybody. It is a dead end for these people.

The Cumulative Scenario:

On the one hand, BrightSource promises the most minimum impacts from the HHSEGS Project. On the other hand, BrightSource has publically stated that they would like to build up to three more of these massive projects in the same region! That would multiply their water use for HHSGS by 4. It would multiply their removal of habitat for biological resources by 4. All of the people living in the area would be forced to look at these developments from many different perspectives. Any attempts to turn the whole area into a solar energy farm will likely be met with bitter opposition. It is quite unfortunate that

politicians and energy developers like BrightSource have chosen the most environmentally unfriendly way to use solar energy. Please visit the following link for the right way: www.solardoneright.org.

Conclusion: The CEC should not permit the HHSGS Project to go forward. There are simply too many impacts that cannot be mitigated. At the very least, the CEC should delay approval of this project for at least another 5 years so more studies can be conducted concerning hydrologic, biological, cultural, visual and socioeconomic resources can be better evaluated. It does not work to "approve now, mitigate later'. The agencies tried that and it has failed miserably.

Thank you,

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