California Native Plant Society
2707 K Street, Suite 1
Sacramento, CA 95816

STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:	)	
	)	DOCKET NO. 08-AFC-5
APPLICATION FOR CERTIFICATION	)	
FOR THE IMPERIAL VALLEY SOLAR	)	
PROJECT (FORMERLY SES SOLAR TWO	)	

INTERVENOR CALIFORNIA NATIVE PLANT SOCIETY

Supplemental Testimony of the California Native Plant Society

Docket 08-AFC-5

May 17, 2010

Tom Beltran, Greg Suba
California Native Plant Society
2707 K Street, Suite 1
Sacramento, CA 95816
(916) 447-2677 x206
cnpssd@nyms.net
gsuba@cnps.org

CNPS Supplemental Testimony – Imperial Valley Solar

Inadequate Plant Studies: The plant surveys conducted in 2007 and 2008 are not adequate to determine the presence or absence of special plant species. Applicant has submitted Early Spring Botany Survey Report which may also be inadequate. CNPS will not provide testimony at this time on the April Botany Survey or related subjects that were included in the Supplement to the AFC but reserve the right comment at a future date.

Regarding the (2008) Early Spring Botany Survey Report, the applicant does not provide sufficient information to determine the source of "Table 5, Special Status Plant Species Occurring or Potentially Occurring on the IVS Site". Table 5 contains a list of 25 species. CNPS believes that the applicant should not have developed Table 5 from local observations, but from known sensitive species found in the entire Colorado Basin. We believe a list of sensitive species from the entire Colorado Basin, excluding terrain types such as rocky slopes, would contain approximately 65 species and would be the minimum size list for the project. Anything less would be inadequate.

The problem with the Applicant's presumed method of using sensitive species known to occur in the project area is that Imperial County is not documented well. Imperial and San Diego Counties are approximately the same size. However, the California Consortium of Herbaria contains 117,000 specimens – meaning that the county has been widely surveyed over many years, wet and dry. In contrast, Imperial County has only 9,800 specimens in the California Consortium of Herbaria. It's reasonable to conclude that any existing database could not reliably predict the presence of special status species in Imperial County or that such databases could render accurate lists.

We argue that the Applicant's special status species lists are of unknown reliability and cannot fulfill their intended use since they apparently were not derived from sensitive species known to occur in the entire Colorado Basis. We also argue that the 2008 botany survey reports are of limited value for the same reasons and may be inadequate.

Mirror Washing: According the Applicant, all 30,000 Suncatchers' mirrors will be washed once a month, and once a year they will be washed with a dilute biodegradable soap. Biodegradable does not equate to non-toxic and although the applicant has stated that it is likely that the wash water and soap will not reach the soil and that the soap will biodegrade, no data or studies have been submitted to support this claim. The soap has not been identified nor has any material safety data been provided. While it may be possible that the wash water will not reach the ground during mirror washing activities, we feel the assumption that the soap will biodegrade before causing harm is false. The pan evaporation rate at the project site is an estimated 140 inches per year. The applicant provided no evidence that the soap will actually biodegrade in such a dry environment and it might be entirely possible that the soap will accumulate on the mirrors, un-degraded, until a storm event provides enough water to wash the soap from the mirrors and onto the ground, as well as onto any cryptobiotic crust and or plants beneath the mirrors. Soaps by nature are antibacterial and cryptobiotic crusts at the project site are

expected to contain bacterial components. Soil crusts are only metabolically active when wet. How do they perform when they are wet with soap?

Wind Erosion: Wind erosion creates dust and dust has been shown to be detrimental to desert plants and cryptobiotic crusts.

The Applicant has not provided information regarding the cryptobiotic crusts, if any, on the project site. Without such information, the affects of construction and operation of the project on wind erosion and its direct and indirect impacts on local and off site plant and cryptobiotic crusts is not known.

The Salton Sea Restoration Project, faced with the same challenge, evaluated dust emissions with on-site testing. According the Salton Sea Ecosystem Restoration Draft EIR:

"There is no agreed upon method to estimate PM10 emissions or wind blown dust, and there are many uncertainties and limitations associated with the available tools and methods. The MacDougall Method is a tool used to estimate particulate matter emissions that relies heavily on emission factors developed through us of wind tunnel and/or Portable In-Situ Wind Erosion Laboratory (PI-SWERL) study results. The MacDougall Method was developed to estimate dust emissions from land with little or no vegetation. Such lands may have the ability to form a crust, which can minimize dust emissions. Other available methods for dust emissions estimation are not able to take into account the ability of solids to form a crust. The method relies on actual field measurements of soil with and without crust to estimate PM10 emissions. Soils with vary crust strengths or stabilities may also be studied….Wind Tunnels usually operate in laboratories, but a portable version is available and was used…for measurements at the Salton Sea."

Dust grains of less than PM10 predominate on plant surfaces, and such deposition frequently results in dust clothing shrubs boarding dirt roads or downwind of a barren source areas, such as a dry lake (Sharifi, Gibson, Rundel: 1997) Medium and large soil grains typically move relatively short distances by modified saltation or short-term suspension, whereas smaller particulates (<20um) may enter long-term suspension and be transported greater distances (Sharifi, Gibson, Rundel: 1997) Analysis of wind blown dust effects on desert plants have shown reduced maximum rates of photosynthesis to between 21 and 58 percent compared to control plants. Dusted leaf temperatures and photosynthetic stems were 2-3 degrees Celsius higher due to greater absorption of infra-red radiation; heavily dusted shrubs had smaller leaf areas and greater leaf –specific masses suggesting lowered primary production in desert plants exposed to dust (Sharifi, Gibson, Rundel: 1997)

Applicant has not provided wind erosion information based on the MacDougall Method and it's reasonable to conclude that any analysis provided to date is not adequate since no other reliable method is available to analyze soils with or without crusts. Clearly dust from wind erosion affects plants and cryptobiotic crusts. Without adequate wind erosion information, effects of dust to on and offsite plant communities cannot be determined.

Cumulative Effects and the Salton Sea: The project site lies entirely within the Salton Sea Watershed. The Salton Sea Restoration Act of 2003 requires the Secretary of undertake an Ecosystem Restoration Study to determine a preferred alternative for the restoration of the Salton Sea ecosystem and the permanent protection of wildlife dependent on that ecosystem. The preferred alternative must provide the maximum feasible attainment of the following objectives:

•Restoration of long term stable aquatic and shoreline habitat for the historic levels and diversity of fish and wildlife that depend on the Salton Sea;
• Elimination of air quality impacts from the restoration project; and
• Protection of water quality.Resources

(Salton Sea Ecosystem Restoration Program: Preferred Alternative Report and Funding Plan, California Department of California Department of Water Resources, Department of Fish and Game)

Plants are an integral part of the Salton Sea aquatic and shoreline habitat and its tributaries.

The estimated cost of the restoration plan is $8.9 billion.

The Applicant's sediment transport study was prepared by Howard H. Chang, Ph.D., P.E. in January 2010. However, Mr. Chang's professional state license #22649 expired on December 31, 2009, before the report was prepared. The expiration date is clearly visible with his seal on title page of the report. We would like to know how this fact will affect the admissibility of Mr. Chang's report or if it will be affected at all. Clarification is requested.

The sediment transport study recommends several mitigation measures, one of them is:

"It is recommended all sediment basins be deleted from the proposed plan."

The US Army Corps of Engineers Preliminary Jurisdictional Determination Form (01/05/2010) states:

"The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time."

The Applicant's AFC Section 5.5 – Surface Water Quality states:

"Project surface water that does not infiltrate or evaporate ultimately drains approximately 30 miles north to the Salton Sea."

In addition, the "Review Of Federal And State Surface Waters For The Stirling Energy Systems Solar 2 Project", February 23, 2009 states:

"URS conducted a site visit with the Corps on January 8, 2009, and the Corps noted indication of flooding on lands and buildings at Dixieland, which is located east of the Westside Main Canal/Dixie Drain systems, and at the intersection with Evan Hewes Highway. Laurie Monarres from the Corps indicated that she had talked to some field staff from the IID, who stated that flooding occurred in this area."

We argue that the project site in fact contains jurisdictional waters of the United States and that construction and operational activities from this project and other planned renewable energy projects within the Salton Sea watershed would increase erosion, thus increasing sediment transported to the Salton Sea. The Salton Sea Restoration Plan includes two 200 acre sedimentation basins. However, the $8.9 billion project is not designed to accommodate the cumulative additional sediment from this project or others like it in the Salton Sea watershed.

The Salton Sea Exectutive Summary states:

"Impacts to special status species would result primarily from construction of sedimentation and distribution basin at river deltas…particularly at the southern shore (of the Salton Sea)."

Significant impacts, including cumulative impacts, on the Salton Sea habitat, including plants, from increased sediment are possibly real but have not been adequately analyzed.

Dust Control: The Imperial Valley Air Pollution Control District (IVAPCD) Rule 804, Open Areas, requires rural open areas of 3.0 acres and contains at least 1,000 square feet of disturbed area to have a stabilized surface. The applicant plans on using dust suppressants to control fugitive dust. However, not information has been provided as to the specific suppressant to be used. Some suppressants are hygroscopic; they use moisture from the air to help bind dust particles, which inhibits fugitive dust. If the dust suppressant that the Applicant intends to use is a hygroscopic material and since the project site has a pan evaporation rate of 140 inches per year, the Applicant has not shown any evidence that hygroscopic suppressants will be effective at the project site.

Cost Benefit Analysis: The true economic cost of plant habitat has not been taken into account and mitigation focuses on preservation rather than replacement/restoration. Since Creosote Desert Scrub environment in not longer being created, "mitigation" by preservation undervalues the true cost of the plant habitat taken. Therefore, economic cost benefit analysis understates the cost of the "take" and overstates the public benefit of projects. Project benefits will always be overstated and some projects may be approved in error. Desert plants are uniquely adapted to the harsh desert environment. However,

they are easily damaged and slow to recover. Partial recovery is possible in 3 to 5 years but damage from construction activities such as those that will occur on this project will take a century or more, if recovery is possible at all. While similar habitat may be purchased for as little as $500 to $1000 per acre (or less), restoration of heavily disturbed habitat from projects such as this one is warranted in order to restore public lands to the public. The cost of full restoration for most western lands would exceed the profit earned over 50 to 200 years of use (David A. Bainbridge 2007). CNPS believes that the full cost of restoration must be used in this project's cost benefit analysis. Restoration cost in 2004 dollars is approximately $20,250 per acre or $50,000 per hectare (David A. Bainbridge, 2004). $20,250 per acre is conservative. Smaller scale restoration projects cost significantly more per acre (Michelle Cloud-Hughes, March 2008)

Assessing and Mitigating the Effects of Windblown Soil on Rare and Common Vegetation, Sean M. Gleason, Dave T. Faucette, Mai M. Toyofuku, Carlos A. Torres, Calvin F. Bagley, *Environmental Management (2007) 40:1016–1024*

Biological Soil Crusts: Ecology And Management, Jayne Belnap et. al., *Technical Reference 1730-2 2001*, U.S. Department of the Interior,

Imperial County Air Pollution Control District Rules and Regulations, Revised February 23, 2010

Wind Erosion From Military Training Lands in the Mojave Desert, California, U.S.A., Simon J. van Donk, Xuewen Huang, Edward L. Skidmore, Alan B. Anderson, Dick L. Gebhart, Valerie E. Prehodaz & Elizabeth M. Kellogg, *Journal of Arid Environments (2003) 54: 687–703*

Vulnerability of Desert Biological Soil Crusts to Wind Erosion: The Influences of Crust Development, Soil Texture, and Disturbance, Jayne Belnap & Dale A. Gillette, *Journal of Arid Environments (1998) 39: 133–142*

Responses of Biological Soil Crusts to Sand Burial in a Revegetated Area of the Tengger Desert, Northern China, Rong Liang Jia, Xin Rong Li*, Li Chao Liu, Yan Hong Gao, Xiao Jun Li *Soil Biology & Biochemistry 40 (2008) 2827–2834*

Soil Losses by Wind Erosion, D. W. Fryrear, *Soil Sci. Soc. Am. J. 59:668-672 (1995).*

Surface Dust Impacts on Gas Exchange in Mojave Desert Shrubs, M. Rasoul Sharifi, Arthur C. Gibson, and Philip W. Rundel, *Journal of Applied Ecology 997.34, 37-846*

Wind Erosion in Deserts : Surface Susceptibility and Climatic Erosivity, E. Skidmore, *U.S. Department of Agriculture*

Wind Erosion, Dust Emission and Air Quality Prediction, Chapter 3

Salton Sea Restoration Program Executive Summary

Salton Sea Restoration Program Draft Environmental Impact Report

Salton Sea Restoration Program Preferred Alternative Report and Funding Plan

A Field Guide to Biological Soil Crusts of Western U.S. Drylands, Common Lichens and Bryophytes, Roger Rosentreter, Matthew Bowker, Jayne Belnap, *United States Geological Survey*

The Anatomy, Physiology, Psychology, and Economics of Desert Destruction and Restoration, David A. Bainbridge, 2004

A Guide for Desert and Dryland Restoration: New Hope for Arid Lands, David A. Bainbridge, 2007

Restoration Plan for Country Club Rd. Residence, Michelle Cloud-Hughes, March 2008

Preliminary Jurisdictional Determination Form, Completion date 01/05/2010, United States Army Corps of Engineers, Applicant: Tessara Solar

Sediment Study for Three Washes at Solar Two Project Site in Imperial County, California, Prepared by Howard H. Chang, Ph.D., P.E., January 2010

Review Of Federal And State Surface Waters For The Stirling Energy Systems Solar 2 Project, prepared by URS, February 23, 2009

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE
IMPERIAL VALLEY SOLAR PROJECT
(formerly known as SES Solar Two Project)
IMPERIAL VALLEY SOLAR, LLC

Docket No. 08-AFC-5
PROOF OF SERVICE
(Revised 4/12/10)

APPLICANT
Richard Knox
Project Manager
SES Solar Two, LLC
4800 N Scottsdale Road.,
Suite 5500
Scottsdale, AZ 85251
richard.knox@tesserasolar.com

CONSULTANT
Angela Leiba, Sr. Project
Manager URS Corporation
1615 Murray Canyon Rd.,
Suite 1000
San Diego, CA 92108
Angela_Leiba@urscorp.com

APPLICANT'S COUNSEL
Allan J. Thompson
Attorney at Law
21 C Orinda Way #314
Orinda, CA 94563
allanori@comcast.net

Ella Foley Gannon, Partner
Bingham McCutchen, LLP
Three Embarcadero Center
San Francisco, CA 94111
ella.gannon@bingham.com

INTERESTED AGENCIES
California ISO
e-recipient@caiso.com

Daniel Steward, Project Lead
BLM – El Centro Office
1661 S. 4th Street
El Centro, CA 92243
daniel_steward@ca.blm.gov

Jim Stobaugh,
Project Manager &
National Project Manager
Bureau of Land Management
BLM Nevada State Office
P.O. Box 12000
Reno, NV 89520-0006
jim_stobaugh@blm.gov

INTERVENORS
California Unions for Reliable
Energy (CURE)
c/o Tanya A. Gulesserian
Loulena Miles, Marc D. Joseph
Adams Broadwell Joseph &
Cardozo
601 Gateway Blvd., Ste. 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com
lmiles@adamsbroadwell.com

Tom Budlong
3216 Mandeville Canyon Road
Los Angeles, CA 90049-1016
TomBudlong@RoadRunner.com

***Hossein Alimamaghani**
4716 White Oak Place
Encino, CA 91316
almamaghani@aol.com

***Tom Beltran**
P.O. Box 501671
San Diego, CA 92150
cnpssd@nyms.net

***California Native Plant Society**
Greg Suba & Tara Hansen
2707 K Street, Suite 1
Sacramento, CA 5816-5113
gsuba@cnps.org

ENERGY COMMISSION
JEFFREY D. BYRON
Commissioner and Presiding
Member
jbyron@energy.state.ca.us

ANTHONY EGGERT
Commissioner and Associate
Member
aeggert@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

Kristy Chew, Adviser to
Commissioner Byron
kchew@energy.state.ca.us

Caryn Holmes, Staff Counsel
Christine Hammond,
Co-Staff Counsel
cholmes@energy.state.ca.us
charnmond@energy.state.ca.us

Christopher Meyer
Project Manager
cmeyer@energy.state.ca.us

Jennifer Jennings
Public Adviser
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I, Tom Beltran, declare that on 5/17/2010, I served and filed copies of the attached, supplemental testimony. The original documents, filed with the Docket Unit, are accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/solartwo/index.html]

The documents have 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;

____ by personal delivery;

____ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

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:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-5
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

*indicates change