

## CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512



October 26, 2012

California Energy Commission

**DOCKETED**  
**11-AFC-2**

TN # 68225

OCT 26 2012

Clay Jensen, Senior Director  
BrightSource Energy, Inc.  
1999 Harrison Street, Ste. 2150  
Oakland, CA 94612

**RE: HIDDEN HILLS SOLAR ELECTRIC GENERATING SYSTEM (11-AFC-2), DATA  
REQUESTS, SET 3 (#'s 199-208)**

Mr. Jensen:

California Energy Commission staff seeks the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, and 3) assess whether the project will result in significant environmental impacts. These attached data requests are issued for "good cause" as the information requested is important to the sufficiency of Staff's CEQA analysis; as follow up questions to information requests made orally at the August 28, 2012 solar flux workshop; and, is necessary to complete the forthcoming Final Staff Assessment (FSA).

This set of data requests (Set 3, #'s 199-208) is being made in the area of Biological Resources. Please submit and docket data responses as early as possible for both the Hidden Hills proceeding (11-AFC-2), and the Rio Mesa proceeding (11-AFC-3), as the information provided will be used by both project teams. If you have any questions, please call me at (916) 654-4894 or email me at [mike.monasmith@energy.state.ca.us](mailto:mike.monasmith@energy.state.ca.us).

Sincerely,

Mike Monasmith  
Project Manager

cc: Docket (11-AFC-2)  
Docket (11-AFC-3)  
Proof of Service List

## **Technical Area: Biological Resources and Heat Flux**

**Author:** Carol Watson, Rick Tyler

### **BACKGROUND**

At a joint Hidden Hills (11-AFC-2) and Rio Mesa (11-AFC-3) staff workshop on August 28, 2012, Bright Source Energy (BSE) presented information regarding activities conducted by Gary Santolo at a BSE facility (SEDC) in the Negev Desert of Israel. Mr. Santolo's information formed the basis of several assertions made by BSE at the workshop regarding the potential for impacts associated with avian exposure to concentrated radiant flux levels that would exist at the proposed facility. Staff needs documentation of the activities at SEDC to evaluate its relevance and applicability to the potential for impacts resulting from potential avian exposure to concentrated solar flux. Please note that materials considered proprietary should be docketed with a Confidentiality Request.

### **DATA REQUESTS**

199. What was the intent of Mr. Santolo's activities at the SEDC facility?
200. Did Mr. Santolo have direction provided to him under a contract or purchase order? If so, please provide a document that lays out the direction that BSE provided to him.
201. Did BSE or Mr. Santolo develop a methodology or procedure for the activities to be conducted at the SEDC facility? If so, please provide a copy.
202. Was a final report or summary prepared for Mr. Santolo's activities at SEDC?
  - a. Please provide copies of the draft and final reports submitted to BSE.
  - b. Please provide the basis for the experimental design and the objectives of the experiment, including results of preliminary literature review (if conducted).
  - c. Were any parts of the report confidential? If so, when will these sections be submitted under confidential cover to the Energy Commission?
  - d. Please provide all photographs of the exposed birds prior to and after each exposure regimen.
  - e. If no photos of the birds were taken, please provide notes or other documentation to describe in detail the color of the singed portion of the feathers and the distance from the feather edge and the point where no singeing had occurred.

- f. Please provide a description of the method of measuring the duration of exposure and its accuracy.
  - g. Was any testing stopped during the tests? If, so, can we get the aborted test results?
  - h. Please provide a detailed description of the method and equipment used to measure the level of radiant flux exposure and its accuracy.
  - i. Please provide a detailed description of the method and equipment used for measuring temperatures and its accuracy.
  - j. Were any measurements made of surface temperatures on the flight feathers? If so please describe the method used and its accuracy.
  - k. Was the morphology of the feathers analyzed post exposure to determine if the feather's properties (insulation, air resistance, shape, etc) were altered during exposure to the concentrated solar radiation?
  - l. Please describe the method used to obtain the birds used in the study and the duration and method of storage between their death and the experiment.
  - m. What were the temperatures of the bird samples at the start of, during, and end of their flux exposure?
  - n. How long did the entire experiment take? How was the exposure intensity recalibrated and maintained constant?
  - o. Was the moisture content of the feathers measured or otherwise controlled? If so what was feather moisture content immediately prior to the experiment?
  - p. Was any microscopic analysis of the feathers conducted? If so, please provide photographs or describe in detail the observations?
  - q. Other than naked eye visualization, was there any evaluation of the damage to integrity of flight-readiness of the feathers after exposure?
  - r. What were the environmental conditions at the time of the experiment: time of day, ambient temperature, humidity, wind speed, size of the uniform flux region and the intensity uniformity of the staging area where the birds were exposed?
  - s. Please provide all raw data collected for each exposure regimen.
203. Has BSE conducted, or does BSE plan to conduct, any other tests, experiments and/or evaluations of the BSE-power tower design, or similar non-BSE power tower design with regard to heat flux or concentrated solar radiation?
204. Is BSE aware of other studies, experiments or publications on the topic of the power tower technology and concentrated solar radiation?

## **BACKGROUND**

In response to Rio Mesa Data Request #159, Bright Source Energy (applicant for both the 11-AFC-2 and 11-AFC-3 proceedings) provided depictions of the concentrated solar flux field that would exist around each solar tower. The information provided was derived using a model that predicts how the solar field concentrates the ambient solar radiant energy from the heliostats to the receiver on the central tower. Staff needs access to the model to evaluate its relevance and applicability to the potential for impacts resulting from potential avian exposure to concentrated solar flux. Please note that materials considered proprietary should be docketed with a Confidentiality Request.

## **DATA REQUESTS**

205. Please provide a functional electronic copy of the models used to produce the data and the flux isopleths figures in response to Rio Mesa data request #159.
206. Please provide all documentation and manuals necessary to operate the model.
207. Please provide a copy of all model inputs used to derive the figures provided in response to Rio Mesa data request #159.
208. If necessary, please provide those portions under confidential cover to ensure the complete models and assumptions are provided.



**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  
HIDDEN HILLS SOLAR ELECTRIC  
GENERATING SYSTEM***

**Docket No. 11-AFC-02**

**PROOF OF SERVICE  
(Revised 9/20/12)**

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### DECLARATION OF SERVICE

I, J. Mike Monasmith, declare that on, October 26, 2012, I served and filed copies of the attached Data Requests, Set 3, dated October 26, 2012. The original document, filed with the Docket Unit or the Chief Counsel, as required by the applicable regulation, 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/hiddenhills/index.html].

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

*(Check all that Apply)*

For service to all other parties:

- X Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. 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 "e-mail preferred."

**AND**

For filing with the Docket Unit at the Energy Commission:

- X by sending an original paper copy and one electronic copy, mailed with the U.S. Postal Service with first class postage thereon fully prepaid and e-mailed respectively, to the address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT  
Attn: Docket No. 11-AFC-2  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

***OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:***

- Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission  
Michael J. Levy, Chief Counsel  
1516 Ninth Street MS-14  
Sacramento, CA 95814  
[mlevy@energy.state.ca.us](mailto:mlevy@energy.state.ca.us)

I declare under penalty of perjury under the laws of the State of California 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.

\_\_\_\_\_  
Signature on File