

DOCKETED

Docket Number:	09-AFC-07C
Project Title:	Palen Solar Power Project - Compliance
TN #:	202484
Document Title:	Ex. 1136 â€œ Bio Supplemental Opening Testimony of Matt Stucky, Chris Morris and Charlie Turlinski â€œ Infeasibility of Curtailment
Description:	N/A
Filer:	Marie Fleming
Organization:	Galati Blek LLP
Submitter Role:	Applicant Representative
Submission Date:	6/23/2014 2:05:46 PM
Docketed Date:	6/23/2014

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Petition For Amendment for the
**PALEN SOLAR ELECTRIC
GENERATING SYSTEM**


DOCKET NO. 09-AFC-07C

**DECLARATION OF MATTHEW
STUCKY**

I, Matthew Stucky, declare as follows:

1. I am presently employed by Abengoa Solar LLC as Manager of Business Development.
2. A copy of my professional qualifications and experience was included with my Opening Testimony and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Biological Resources for the Petition for Amendment for the Palen Solar Electric Generating System (California Energy Commission Docket Number 09-AFC-07C).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on 6/20 2014.


Matthew Stucky

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Petition For Amendment for the
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GENERATING SYSTEM**

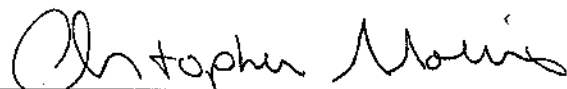
DOCKET NO. 09-AFC-07C

**DECLARATION OF
CHRISTOPHER MORRIS**

I, Christopher Morris, declare as follows:

1. I am presently employed by Abengoa Solar LLC as Associate General Counsel.
2. A copy of my professional qualifications and experience is included with my Supplemental Testimony.
3. I prepared the attached testimony relating to Biological Resources for the Petition for Amendment for the Palen Solar Electric Generating System (California Energy Commission Docket Number 09-AFC-07C).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on June 19, 2014.



Christopher Morris

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Petition For Amendment for the
**PALEN SOLAR ELECTRIC
GENERATING SYSTEM**

DOCKET NO. 09-AFC-07C

**DECLARATION OF CHARLES
TURLINSKI**

I, Charles Turlinski, declare as follows:

1. I am presently employed by BrightSource Energy, Inc. as Director of Project Development.
2. A copy of my professional qualifications and experience was included with my Opening Testimony and is incorporated by reference in this Declaration.
3. I prepared the attached supplemental testimony relating to Project Description for the Petition for Amendment for the Palen Solar Electric Generating System (California Energy Commission Docket Number 09-AFC-07C).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on June 20 2014.



Charles Turlinski

**PALEN SOLAR ELECTRIC GENERATING SYSTEM
BIOLOGICAL RESOURCES
SUPPLEMENTAL OPENING TESTIMONY
INFEASIBILITY OF CURTAILMENT**

I. Names: Matthew Stucky
Chris Morris
Charles Turlinski

II. Purpose:

Our supplemental testimony for the topic area of Biological Resources – Avian, specifically addresses the infeasibility of curtailment of operations at the Palen Solar Electric Generating System (PSEGS) (09-AFC-7C).

III. Qualifications:

Matthew Stucky: I am presently Manager of Business Development at Abengoa Solar LLC and have been for the past three (3) years. I have degrees in Civil Engineering and Environmental Studies and a graduate degree in Environmental Engineering. My experience includes managing permitting and compliance activities for the California Energy Commission-licensed Mojave Solar Project. I am currently the Project Manager for PSH responsible for the permitting of the PSEGS. A detailed description of my qualifications has been previously provided in Attachment A to PSH's Opening Testimony package.

Chris Morris: I am presently Associate General Counsel at Abengoa Solar LLC and have been since 2010. I specialize in project development, finance and general corporate matters for developers of utility scale solar projects and have over 15 years of finance and corporate law experience. I was the lead counsel for the development and financing of \$1.6+ billion Solana Solar Project and \$1.2+ billion Mojave Solar Project. I will be the lead counsel for financing of the PSEGS. A detailed description of my qualifications is provided with this testimony.

Charles Turlinski: I am currently employed by BrightSource Energy Inc. and I am a developer of utility scale renewable energy projects with 10 years' experience. I have managed the development and interconnection processes for wind and solar projects throughout the country, including the negotiation and execution of Large Generator Interconnection Agreements (LGIAs) for over 1000 megawatts of capacity in the CAISO. I have a MBA from the Massachusetts Institute of Technology (MIT). A detailed description of my qualifications has been previously provided in Attachment A to PSH's Opening Testimony package.

To the best of our knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are our own. We make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions:

The Committee has asked whether it is feasible or appropriate to add a curtailment condition to the project permit to help address avian impacts. As will be explained below, a curtailment condition would result in almost all circumstances in a non-financeable project.

Before beginning that discussion, however, we would note that the testimony provided here is focused on the practical and economic limitations associated with the curtailment concept. However, as a threshold matter, PSH does not agree with the premise that curtailment of operations is an appropriate mechanism to respond to potential avian impacts associated with the project. PSH has filed other testimony (Exhibit 1134) that addresses the magnitude of potential avian impacts, as well as minimization and mitigation measures that address the issue of avian impacts in a much more targeted and effective manner than that which would result from a curtailment condition.

In the notice providing the topics for the Project evidentiary hearings, the Committee did not provide specifics on the triggers, duration, or other details of a potential environmental curtailment provision. However, it is likely that specific curtailment events could fall into one of two categories: (1) long interval, time - or calendar-based curtailment; or (2) short interval, event-triggered curtailment.

Long interval curtailment is infeasible due to the impact that it would have on the Petitioner's ability to obtain project financing for the Project. To construct the Project, the Petitioner must raise equity and debt in the global capital markets. The financial markets (both in the U.S. and worldwide) utilize the project financing structure to finance the construction of large-scale solar projects such as PSEGS. Put simply, project financing is a financing tool used for long-lived assets with predictable future cash flows (explicitly defined, in the case of solar projects, by power purchase agreements). The purpose of the project financing structure is to allow the lenders and equity providers to create a defined universe of risks and revenue for a project, which they can then apply to model the cash flows for the project and make a determination as to whether to provide the

requested debt/equity for the project. In keeping the project financing as a “ring fence” structure, project cash flows are the sole source of repayment for the capital providers.

Because the cash flows generated by a large-scale solar projects such as PSEGS typically are not sufficient to provide for anything other than a very narrow cushion of the anticipated revenue over the amount necessary to pay costs and debt service, there must be a high degree of confidence in the projected project cash flows. As a result, debt/equity capital providers have a great deal of sensitivity to even small potential fluctuations in project cash flow and in order for a project to be financeable, it must be able to demonstrate the stability and certainty of its cash flows to a very high level.

After PSEGS receives its necessary permits and approvals, the Petitioner will initiate the financing process. The first step in project financing is to solicit preliminary interest from sources of capital. After executing non-binding letters of intent with the project owners, the potential capital providers will conduct a stringent due diligence review of the project. The due diligence can be expected to last six to nine months and, for a first-of-its-kind project, such as PSEGS, potentially longer. During this time, the capital providers will review the project documents and investigate any provisions in the project permits or contracts that could potentially negatively affect future project cash flows. PSH does not believe that any provider of capital would accept the risk of a long-interval cessation of project operations due to *potential* wildlife impacts as the magnitude of revenue impairment has never been contemplated and is not viable within the project’s economic model. Therefore, the Petitioner would not be able to raise the capital necessary to build PSEGS if such a provision was incorporated in the Commission Decision for the amended project.

While it is correct that some wind energy projects have accepted short interval, event-triggered environmental curtailment provisions in their approved avian plans, because of the differences between a solar thermal tower and wind project, such curtailment concepts should not be applied to PSEGS. More specifically, the critical differences between wind energy projects and PSEGS with respect to curtailment are: (1) wind projects can be partially curtailed (even to the level of curtailing individual wind turbines) whereas curtailment for a solar thermal tower projects would require 100% curtailment of the project; and (2) it is not technically feasible to rapidly curtail a solar thermal tower facility, thereby limiting the efficacy of a curtailment order in response to a short interval, event-triggered phenomenon.

With respect to the first point above, wind energy projects typically cover large areas, often in a quasi-linear fashion, and include dozens of individual wind turbines. Wind project owners can agree to curtail the operation of a limited number of turbines in response to a detected approach of avian species to a specific area of the project, while still operating the remainder of the turbines. If, on the other hand, the generation of concentrated solar flux at PSEGS must be fully curtailed, all heliostats must be placed in stow position and a controlled shutdown of the steam turbine must be initiated.

Further, ceasing the operation of a wind turbine and then restarting that wind turbine can be achieved rather quickly. As described in the testimony Gustavo Buhacoff (Exhibit 1137), the time required to stop generating concentrated solar flux at PSEGS and place the heliostats in the stow position would be up to 30 minutes. If a bird or multiple birds were detected approaching the site, it is not certain that they would come into contact with elevated flux levels until moments before passing over the project site. Given the speed at which heliostats move, it is not possible for plant operations to respond quickly to such an event in real-time with the desired outcome of avoidance. Further, it can take two hours or more from the time the project initiates environmental curtailment to the time it is again generating electricity. This is a significant amount of time to stop operations in response to a momentary, fleeting event. If the project is subject to such environmental curtailment, similar to long-interval curtailment, the magnitude of revenue impairment becomes significant. For these reasons, event-triggered environmental curtailment of project operations is not feasible.

Considering these factors, an environmental curtailment event for a wind energy project can be expected to result in much less of a loss in overall energy output (and revenue) than a curtailment event for PSEGS. As a result, the lost revenue from a wind curtailment event is a much smaller proportion of the annual project revenue than a curtailment event would be for PSEGS. For this reason, these conditions do not necessarily render a wind project non-financeable in all cases, whereas they would in the context of a solar thermal tower facility like PSEGS.

In conclusion, in order to construct the PSEGS project, the Petitioner will need to raise a very large amount of funding in the capital markets. In order to do this, the capital providers will have to have a high degree of certainty that the projected project cash flows are accurate and will be realized by the Project. Because of the potential significant, unbounded impact to Project revenues that may be caused by a temporary (short-interval, event-triggered) or seasonal (long-interval, time- or calendar-based) cessation of project operations, it is our view that a curtailment

provision in the Commission Decision would render the Petitioner unable to raise the capital necessary to construct the Project. In our experience, the uncertain amount of accumulated revenue loss expected from curtailment events, each of which would be significant to a power tower project (in contrast to the limited, targeted curtailment that is possible with a wind energy project), is simply not a risk that the capital providers will be willing to take. Such a provision would therefore effectively function as a “poison pill” that would render the project non-financeable, notwithstanding its fully permitted status.

Christopher D. Morris

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christopherdmorris@att.net

EXPERIENCE

ABENGOA SOLAR LLC

Associate General Counsel

San Diego, CA/San Francisco, CA

2010-Present

- Associate General Counsel specializing in project development, finance and general corporate matters for developer of utility scale solar projects.
- Lead counsel for the development and financing of \$1.6+ billion Solana Solar Project and \$1.2+ billion Mojave Solar Project. Led representation on behalf of the company in connection with all project documents (EPC, O&M, project management agreements, etc.) and all debt and equity financing documents.
- Lead counsel for \$300 million equity investment by Liberty Media in the Solana Solar Project.
- Lead counsel for \$125 million equity investment by Banco Santander in the Solana Solar Project.
- Negotiated partnership and investment documents with a third party developer for joint venture to develop two 250 MW solar projects.
- Lead counsel for ongoing finance matters for the company, including current and potential third party equity investments and potential joint ventures.
- Represent the company in a range of development matters and new business opportunities for utility scale and distributed generation projects.
- Provide advice and counsel regarding general corporate matters and corporate governance issues.

LATHAM & WATKINS LLP

Associate, Project Finance Department

San Diego, CA

2005- 2009

- Practiced project finance, commercial, and general corporate law with an emphasis on representing energy and other clients in connection with financing transactions, project development, mergers and acquisitions, joint ventures, real estate acquisitions, general corporate matters and large-scale commercial agreements.
- Lead associate for numerous highly complex, time-sensitive transactions, ranging in value from under \$10 million to in excess of \$1 billion. Responsible for all legal aspects of such transactions, including serving as the primary contact person for clients, counter-party counsel, and corporate officers and employees.
- Principal role in negotiating and drafting term sheets, loan documents, purchase and sale agreements, joint venture agreements, development agreements, commercial ventures, and other corporate transaction documents.
- Represented clients in connection with numerous real property matters, including acquisitions, commercial lending, venture formation, title and survey work and lease negotiations and restructurings.
- Extensive experience in supervising multiple junior attorneys and support staff during demanding, high-pressure transactions.

EXPERIENCE (cont.)

O'MELVENY & MYERS LLP

Associate, Transactional Department
Summer Associate

Los Angeles, CA

2000 -2005

Summer 1999

- Experience in general corporate matters including mergers and acquisitions, dispositions, lease restructurings, employee benefits, intellectual property agreements, and public and private debt and equity offerings.
- Participated in all aspects of a broad national restructuring practice, with particular emphasis on restructuring related financing and acquisition matters.
- Experience with corporate and contract diligence in a wide range of industries.
- Monitored compliance with federal securities laws for private and public entities.
- Experience in federal court litigation in connection with restructuring practice.

LOVE & SHENFELD LLP

Summer Associate

Los Angeles, CA

Summer 1998

- Researched and wrote legal memoranda on a variety of employment and business litigation topics including discrimination, harassment, defamation, expert testimony, evidence, and contract law.
- Researched and wrote trial brief for case involving breach of contract, discrimination, and fraud causes of action.
- Performed company financial analysis based upon SEC filings, company statements, and subpoenaed documents.

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY, SCHOOL OF LAW

Juris Doctorate

Berkeley, CA

2000

- Assistant Articles Editor, *Berkeley Law and Technology Journal*
- Authored published article on copyright issues (*Quality King Distrib., Inc. v. L'Anza Research Int'l*, 14 BERKELEY TECH. L.J. 65 (1999))
- Moot Court Commendation Award (given for combined oral and written performance)

UNIVERSITY OF CALIFORNIA, BERKELEY

Bachelor of Arts, History, cum laude

Berkeley, CA

1994

- G.P.A.: 3.82/4.0
- *Honors*: Phi Beta Kappa (one of 20 students elected as Junior); Edward Kraft Memorial Scholarship (awarded to top 50 students in Freshman class); History Honors Program; Phi Alpha Theta History Honor Society

PRO BONO ACTIVITIES

AMERICAN COMPOSERS FORUM

Los Angeles Chapter *Ex Officio* Board Member

Los Angeles, CA

2002 – 2005

- *Ex Officio* member of and legal advisor to the board of directors of a charitable organization dedicated to the support of artistic and professional growth of composers and the expansion of interest in new music.
- Drafted chapter's organizational documents, obtained tax-exempt status for chapter, and advised board on general legal matters.

INTERESTS

- Soccer, cooking, non-fiction literature and American history.

Representative Experience

Represented Abengoa in all phases of the development and financing of the 280 MW (gross) Solana Solar Project located in Gila Bend, Arizona. The project successfully closed financing in excess of \$1.6 billion. Lead attorney for negotiating all project and finance documents.

Represented Abengoa in all phases of the development and financing of the 280 MW (gross) Mojave Solar Project located in Mojave, California. The project successfully closed financing in excess of \$1.2 billion. Lead attorney for negotiating all project and finance documents.

Represented Abengoa as the lead attorney for a \$300 million equity investment by Liberty Media in the Solana Solar Project. Responsible for negotiating and structuring all investment documents.

Represented Abengoa as the lead attorney for a \$125 million equity investment by Banco Santander in the Solana Solar Project. Responsible for negotiating and structuring all investment documents.

Represented Abengoa as lead attorney for a joint venture with BrightSource Energy to develop two 250 MW solar projects.

Represented a solar developer in connection with the submission of multiple bids into renewable request for proposal programs for California and Arizona utilities. Participated in all phases of bidding process, from drafting of power purchase agreements to assistance with request for proposal response materials.

Represented a geothermal developer in connection with the negotiation of power purchase agreements with California public utilities for the purchase and sale of geothermal energy.

Represented a developer of gas-fired power projects in connection with a power purchase agreement in response to a request for proposals from a California public utility. Represented developer in all phases of bidding process, from drafting of power purchase agreement to formation of new bidding entity.

Represented a renewable energy company in connection with the acquisition of a biomass facility. Negotiated and drafted all documents related to the transaction, from the term sheet phase to the final purchase and sale agreement. Also drafted and negotiated a license agreement for certain renewable energy technology and the acquisition documents for the underlying real property interests.

Represented a solar developer in connection with the negotiation of an engineering, procurement, and construction contract for the development of solar thermal energy projects. Developed model engineering, procurement and construction contract and solar warranties for use in connection with future solar thermal projects.

Represented the lender group in connection with the financing of a multi-billion dollar acquisition of power projects. This transaction involved the acquisition of eight different projects located in five different states. Responsible for review of acquisition-related documents and negotiation of certain acquisition-related agreements on behalf of lender group. Supervised team of junior associates in performing diligence on the acquired assets and was responsible for directing local counsel assistance with transaction.

Represented the lender group in connection with a \$150 million financing of a portfolio of gas fired power projects. Responsible for drafting and negotiating all loan and related documents and review of all project related documents.

Represented a renewable energy company in connection with the acquisition of a biomass facility. Primarily responsible for drafting and negotiating all acquisition and related documents. The transaction

involved the simultaneous acquisition of property and assets from three different sellers, which required three separate sets of acquisition documents.

Represented the lender group in connection with a \$200+ million financing of a portfolio of gas fired power plants. Primarily responsible for all real property elements of transaction, including title and survey review and negotiation of real property and related documents.

Represented the lender group in connection with a \$150 million letter of credit facility for the financing of a portfolio of gas fired power plants. Responsible for all phases of transaction, including primary responsibility for negotiating and drafting of deal documents, overseeing project diligence, and direction of local counsel.

Represented the underwriters in connection with a \$300 million 144A note offering and a \$200 million 144A note offering for two separate casino projects. Primarily responsible for drafting and negotiating security-related agreements and project construction documents on both transactions.