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STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

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

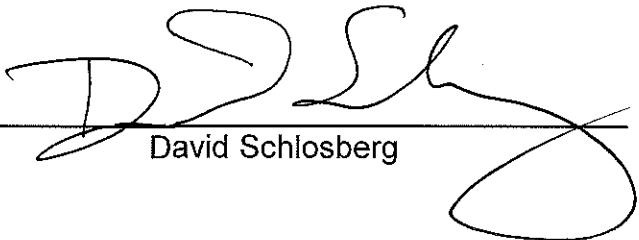
DOCKET NO. 09-AFC-07C

**DECLARATION OF DAVID
SCHLOSBERG**

I, David Schlosberg, declare as follows:

1. I am presently employed by BrightSource Energy, Inc. as Senior Manager of Regulatory & Market Affairs.
2. A copy of my professional qualifications and experience is included with my Supplemental Testimony.
3. I prepared the attached supplemental testimony relating to Alternatives 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 6/23 2014.



David Schlosberg

**PALEN SOLAR ELECTRIC GENERATING SYSTEM
ALTERNATIVES
SUPPLEMENTAL OPENING TESTIMONY
PPA DEADLINES**

I. Name: David Schlosberg

II. Purpose:

My supplemental testimony addresses the subject of the Commercial Operation Dates (COD) in the current power purchase agreements (PPAs) for the Palen Solar Electric Generating System (PSEGS) (09-AFC-7C).

III. Qualifications:

David Schlosberg: I am currently employed by BrightSource Energy, Inc., and have been so for the past two and a half years. I am responsible for BrightSource's regulatory and governmental affairs in California and the U.S. Southwest. I serve as a board member to the Large-scale Solar Association and Concentrating Solar Power Alliance. I have an MBA from the University of California, Berkeley. I am familiar with the PPAs that have been assigned to the PSEGS. A detailed description of my qualifications is attached.

To the best of my 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 my own. I 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 requested documentary evidence of the deadlines contained in the PSEGS PPAs. Attachment A includes the California Public Utilities Commission (CPUC) final resolution approving certain Power Purchase Agreements (PPAs) by and between PG&E and BrightSource Energy (CPUC Final Resolution). The PPAs related to PSEGS are labeled as "PPA 6" and "PPA 7" on page 2. The "Project Location" is shown as "TBD. The required CODs for these PPAs are also shown on page 2 of the CPUC Final Resolution as "December, 2016" for "PPA 6" and "July, 2017" for "PPA 7."

On page 17 of the CPUC Final Resolution, the technology for deployment as required by the PPAs is specified: "The Projects will employ new, proprietary technology based on BrightSource's experience with the

SEGS facilities. Specifically, BrightSource will develop solar thermal facilities using Luz Power Tower (LPT) technology. PG&E recounts the following benefits of LPT technology, compared to other solar thermal technologies, to include: more efficient steam production due to two-axis tracking; more efficient generation of electricity due to higher temperature steam production; less 'parasitic' energy usage for plant operation due to reduced movement of thermal mass; higher capacity factor; lower capital costs due to commodity-based inputs, no concrete foundations, and fewer pipes and cabling; and less water usage." This description addresses the "Infeasibility of Alternatives" referenced in Exhibits 1124 and 1150.

Attachment B contains excerpts from PG&E's August 2013 Renewable Portfolio Standard Project Development Status Report (PDSR), which shows the Palen site was subsequently identified as the "Project Location" for these PPAs. The PDSR clarifies that the precise CODs are December 1, 2016, and July 1, 2017, respectively.

ATTACHMENT A
CPUC FINAL RESOLUTION

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-4269
September 24, 2009

Redacted

R E S O L U T I O N

Resolution E-4269. Pacific Gas and Electric Company (PG&E).

PROPOSED OUTCOME: This Resolution approves cost recovery for five power purchase agreements (PPAs) resulting from bilateral negotiations between PG&E and BrightSource Energy, Inc., pursuant to California's renewables portfolio standard (RPS) program. The PPAs are approved with modifications. Any proceeds from the Royalty Agreement entered in to by PG&E and BrightSource Energy, Inc. in connection with these PPAs will be credited to PG&E's Energy Resource Recovery Account for the benefit of PG&E's ratepayers.

ESTIMATED COST: Actual costs are confidential at this time.

By Advice Letter 3459-E filed on May 13, 2009.

SUMMARY

PG&E's proposed power purchase agreements, as modified by this Resolution, comply with the RPS procurement guidelines and are approved.

PG&E filed Advice Letter (AL) 3459-E on May 13, 2009, requesting California Public Utilities Commission (Commission) review and approval of five PPAs with BrightSource Energy, Inc. (BrightSource). PG&E included with AL 3459-E a Royalty Agreement between PG&E and BrightSource. Pursuant to the proposed PPAs, PG&E will procure generation from five new solar thermal projects (Projects). The PPAs are modified so that the provision relating to excess energy generated above the quantity scheduled for delivery is not approved. PG&E's request is granted, with this modification, because the PPAs are consistent with Decision (D.) 08-02-008, which approved PG&E's 2008 RPS Procurement Plan and because the costs of PPAs are reasonable. Payments made under the PPAs

between PG&E and BrightSource are fully recoverable in rates over the life of the PPAs, subject to Commission review of PG&E’s administration of the PPAs. The energy acquired from the Projects will count towards PG&E’s RPS requirements.

PPA Summaries

Generating Facilities	Technology	Contract Term (Years)	Capacity (MW)	Expected Deliveries (GWh/yr)	Commercial Operation Date	Project Location
Coyote Springs 1 (PPA 3)	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2014	Coyote Springs, NV
Coyote Springs 2 (PPA 4)	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2015	Coyote Springs, NV
PPA 5	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2016	To Be Determined (TBD)
PPA 6	Solar Thermal	25 years	200 MW	573 GWh/yr	December, 2016	TBD
PPA 7	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2017	TBD

Confidential information about the contract should remain confidential

This resolution finds that certain material filed under seal pursuant to Public Utilities (Pub. Util.) Code Section 583, General Order (G.O.) 66-C, and D.06-06-066 should be kept confidential to ensure that market sensitive data does not influence the behavior of bidders in future RPS solicitations.

Pursuant to D.06-06-066 and the decision’s Appendix I “IOU Matrix”, this Commission adopted a “window of confidentiality” for individual contracts for RPS energy or capacity. Specifically, this Commission determined that RPS contracts should be confidential for three years from the date the contract states that energy deliveries begin, except contracts between IOUs and their own affiliates, which should be public.

BACKGROUND

The RPS Program requires each utility to increase the amount of renewable energy in its portfolio

The California RPS Program was established by Senate Bill (SB) 1078, and has been subsequently modified by SB 107 and SB 1036.¹ The RPS program is set forth in Public Utilities (Pub. Util.) Code §§ 399.11-399.20. An RPS is a market-based policy mechanism that requires a retail seller of electricity purchase a certain percentage of its electric portfolio from electricity generated by Eligible Renewable Energy Resources (ERR). Under the California RPS, each utility is required to increase its total procurement of ERRs by at least one percent of annual retail sales per year so that twenty percent of its retail sales are supplied by ERRs by 2010.²

In response to SB 1078 and SB 107, the Commission has issued a series of decisions that establish the regulatory and transactional parameters of the investor owned utility (IOU) renewables procurement program.³

- On June 19, 2003, the Commission issued its “Order Initiating Implementation of the Senate Bill 1078 Renewable Portfolio Standard Program,” D.03-06-071.
- In D.02-08-071, the Commission required each utility to establish a Procurement Review Group whose members, subject to an appropriate non-disclosure agreement, would have the right to consult with the utilities and review the details of each utility’s: overall interim procurement strategy; proposed procurement processes including, but not limited to, requests for offers and proposed procurement contracts before

¹ SB 1078 (Sher, Chapter 516, Statutes of 2002); SB 107 (Simitian, Chapter 464, Statutes of 2006); SB 1036 (Perata, Chapter 685, Statutes of 2007)

² On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08, which established a 33 percent PRS target to be met by 2020.

³ RPS decisions are available on the Commission’s RPS website:
<http://www.cpuc.ca.gov/PUC/energy/Renewables/decisions.htm>

any of the contracts are submitted to the Commission for expedited review.

- Instructions for utility evaluation of each offer to sell ERRs requested in an RPS solicitation were provided in D.04-07-029, as required by Pub. Util. Code §399.14(a)(2)(B). The bid evaluation methodology is known as ‘least-cost, best-fit.’
- The Commission adopted standard terms and conditions (STCs) for RPS power purchase agreements in D.04-06-014, as required by Pub. Util. Code §399.14(a)(2)(D). These STCs are compiled in D.08-04-009, as modified by D.08-08-028, and as a result there are now thirteen STCs of which four are non-modifiable.
- In D.06-05-039, the Commission required participation of an Independent Evaluator (IE) in the IOU’s competitive RPS procurement process. The IE’s role is to ensure that the IOU’s RPS solicitation is undertaken in a fair and consistent manner. The IE also provides additional oversight during contract negotiations.
- D.06-10-050, as modified by D.07-03-046, outlined the RPS reporting and compliance methodologies and rules. In this decision, the Commission established methodologies to calculate a load serving entities’ (LSE) initial baseline procurement amount, annual procurement target (APT) and incremental procurement amount (IPT).
- The Commission adopted its market price referent (MPR) methodology in D.04-06-015 for determining the utility’s share of the RPS seller’s bid price (the contract payments at or below the MPR), as defined in Pub. Util. Code §399.14(a)(2)(A) and 399.15(c). The Commission refined the MPR methodology in D.05-12-042 and D.08-10-026. Resolutions adopted MPR values for the 2005, 2006, 2007, and 2008 RPS solicitations.⁴
- In D.07-05-028, the Commission established a minimum quota for contracting with new facilities or executing long-term contracts for RPS-eligible generation. Specifically, in order for an LSE to count for RPS compliance, deliveries from contracts of less than ten years’ duration with

⁴ MPR resolutions are available here:

<http://www.cpuc.ca.gov/PUC/energy/Renewables/mpr>

RPS-eligible facilities that commenced commercial operation prior to January 1, 2005 must in each calendar year enter into contracts of at least ten years' duration and/or short-term contracts with facilities that commenced commercial operation on or after January 1, 2005 for energy deliveries equivalent to at least 0.25% of that LSE's prior year's retail sales.

- The Commission established guidelines for a utility and a generator to enter into bilateral contracts outside of the competitive solicitation process (D.03-06-071 and D.06-10-019). More recently, in D.09-06-050, this Commission determined that bilateral RPS contracts should be evaluated using the same methods and criteria that are used to review contracts that result from a competitive solicitation.

Energy from RPS facilities located out-of-state must be delivered to California

The California Energy Commission (CEC) is responsible for certifying the eligibility of renewable energy facilities for the RPS program, as well as verifying and tracking the generation and delivery of renewable energy claimed for compliance with the RPS program. If a renewable energy facility has its first point of interconnection to the transmission network outside of California, it must satisfy all of the following additional requirements:⁵

1. It is connected to the transmission network within the Western Electricity Coordinating Council (WECC) service territory.
2. It commences initial commercial operation after January 1, 2005.
3. Electricity produced by the facility is delivered to an in-state location.
4. It will not cause or contribute to any violation of a California environmental quality standard or requirement.
5. If the facility is outside of the United States, it is developed and operated in a manner that is as protective of the environment as a similar facility located in the state.
6. It participates in the Western Renewable Energy Generation Information System (WREGIS), the accounting system to verify compliance with the renewables portfolio standard by retail sellers

⁵ Public Resources (PR) Code 25741(b)(2)(B)

While facilities located in California or with their first point of interconnection in the state are automatically deemed “delivered”, eligible renewable energy from out-of-state facilities must be “scheduled for consumption by California end-use retail customers” to be counted for compliance with the RPS program.⁶

Greenhouse Gas Emissions Performance Standard (EPS) established emission rate limitations for long-term electricity procurement

A greenhouse gas emissions performance standard (EPS) was established by Senate Bill 1368⁷, which requires that the Commission consider emissions costs associated with new long-term (five years or greater) power contracts procured on behalf of California ratepayers.

On January 25, 2007, the Commission approved D.07-01-039 which adopted an interim EPS that establishes an emission rate quota for obligated facilities to levels no greater than the greenhouse gas (GHG) emissions of a combined-cycle gas turbine powerplant.⁸ The EPS applies to all energy contracts for baseload generation that are at least five years in duration.⁹ Renewable energy contracts are deemed EPS compliant from the EPS except in cases where intermittent renewable energy is firmed and shaped with generation from non-renewable resources.

PG&E requests Commission approval of five new renewable energy contracts

On May 13, 2009, PG&E filed AL 3459-E requesting Commission approval of five renewable procurement contracts with BrightSource Energy, Inc., which were

⁶ PR Code Section 25741(a)

⁷ Chapter 464, Statutes of 2006 (SB 1368)

⁸ D.07-01-039 adopted an emission rate of 1,100 pounds of carbon dioxide per megawatt-hour for the proxy CCGT (section 1.2, page 8)
http://www.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/64072.PDF

⁹ “Baseload generation” is electricity generation at a power plant “designed and intended to provide electricity at an annualized plant capacity factor of at least 60%.” § 8340 (a)

negotiated bilaterally. The Commission's approval of the PPAs will authorize PG&E to fully recover in rates, payments made pursuant to the PPAs.

PG&E requests that the Commission issue a resolution containing the findings necessary for "CPUC Approval" as defined by this Commission in D.08-04-009. In addition, PG&E requests that the Commission issue a resolution that does the following:

1. Approves the PPAs in their entirety, including payments to be made by PG&E pursuant to the PPAs, subject to the Commission's review of PG&E's administration of the PPAs.
2. Finds that any procurement pursuant to the PPAs is procurement from an eligible renewable energy resource for purposes of determining PG&E's compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 et seq.) ("RPS"), Decision ("D.") 03-06-071 and D.06-10-050, or other applicable law.
3. Finds that all procurement and administrative costs, as provided by Public Utilities Code section 399.14(g), associated with the PPA shall be recovered in rates.
4. Adopts the following finding of fact and conclusion of law in support of CPUC Approval:
 - a. The PPAs are consistent with PG&E's approved 2009 RPS procurement plan.
 - b. The terms of the PPAs, including the price of delivered energy, are reasonable.
5. Adopts the following finding of fact and conclusion of law in support of cost recovery for the PPAs:
 - a. The utility's cost of procurement under the PPAs shall be recovered through PG&E's Energy Resource Recovery Account.
 - b. Any stranded costs that may arise from the PPAs are subject to the provisions of D.04-12-048 that authorize recovery of stranded renewables procurement costs over the life of the contract. The implementation of the D.04-12-048 stranded cost recovery mechanism is addressed in D.08-09-012.

6. Adopts the following findings with respect to resource compliance with the Emissions Performance Standard (“EPS”) adopted in R.06-04-009:
 - a. The PPAs are a covered procurement subject to the EPS because they are a new contract commitment with a baseload generating facility. However, because these Projects would not generate power through the combustion of fossil fuels and would not produce any greenhouse gas as a direct byproduct of their conversion of solar energy into grid-ready renewable electricity, these Projects meet the EPS.
 - b. PG&E has provided the notice of procurement required by D.06-01-038 in its Advice Letter filing.

NOTICE

Notice of AL 3459-E was made by publication in the Commission’s Daily Calendar. PG&E states that a copy of the Advice Letter was mailed and distributed in accordance with Section IV of General Order 96-B.

PROTESTS

AL 3459-E was not protested.

DISCUSSION

The following table summarizes the substantive features of the PPAs. See Confidential Appendix B for a detailed discussion of PPA terms and conditions.

Generating Facilities	Technology	Contract Term (Years)	Capacity (MW)	Expected Deliveries (GWh/yr)	Commercial Operation Date	Project Location
Coyote Springs 1 (PPA 3)	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2014	Coyote Springs, NV
Coyote Springs 2 (PPA 4)	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2015	Coyote Springs, NV

PPA 5	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2016	TBD
PPA 6	Solar Thermal	25 years	200 MW	573 GWh/yr	December, 2016	TBD
PPA 7	Solar Thermal	25 years	200 MW	573 GWh/yr	July, 2017	TBD

PG&E’s bilateral negotiations with BrightSource began in 2006. On April 1, 2008, PG&E filed AL 3243-E seeking Commission approval of five PPAs and a Royalty Agreement with BrightSource. During the time that Energy Division staff was reviewing AL 3243-E, BrightSource notified PG&E that the proposed PPAs would require amendments. At the request of PG&E, staff suspended its review of AL 3243-E. On May 13, 2009, PG&E withdrew and replaced AL 3243-E with AL 3458-E and AL 3459-E seeking Commission approval for a total of seven PPAs and a Royalty Agreement with BrightSource. This Resolution concerns only PPAs 3 through 7 submitted by AL 3459-E. On August 20, 2009, the Commission approved Resolution E-4266, which authorizes cost recovery for PPA 1 and 2 between PG&E and BrightSource for projects proposed in Ivanpah, California.

Through its PPAs with BrightSource, PG&E will procure RPS-eligible energy from five new solar thermal projects proposed for development in Coyote Springs, Nevada and other yet to be determined sites. Deliveries are expected to commence from the Projects beginning in 2014 through 2017 (see table above).

BrightSource had been pursuing project development for PPAs 5, 6 and 7 in Broadwell Dry Lake, California and has applications pending for site control with the Bureau of Land Management (BLM). PG&E explained in AL 3459-E that the Broadwell Dry Lake Projects are planned for development on BLM land that is currently being considered for national monument status, which could prevent project development.¹⁰ Our Draft Resolution identified Broadwell Dry

¹⁰ AL 3459-E, pages 1-2.

Lake as the Projects' location and discussed the development risks of the sites. On September 18, 2009, the Los Angeles Times reported a statement from BrightSource that they , " ... have ceased all activity at the Broadwell site..."¹¹ Accordingly, we revised our Final Resolution on AL 3459-E to remove PPAs' 5, 6 and 7 site designation of Broadwell Dry Lake, California. The PPAs allow BrightSource to develop the Projects at other sites, provided certain delivery terms and conditions are met. (See Section "Energy from out-of-state Projects complies with Public Resources Code 25741" and Confidential Appendix B.)

PG&E's AL 3459-E also included a Royalty Agreement, wherein PG&E has negotiated for royalty payments that are based on BrightSource's and its affiliates' world-wide sales of power generation equipment using its proprietary technology and on license fees and related revenues received from licenses of the technology. The Royalty Agreement is expected to provide financial benefits for PG&E and its customers. Any payments made pursuant to the Royalty Agreement will be recorded to PG&E's Energy Resource Recovery Account for the benefit of PG&E's customers.

Energy Division has reviewed the proposed PPAs pursuant to Commission decisions

Specifically, Energy Division evaluated the PPAs for the following criteria:

- Consistency with PG&E's 2008 RPS procurement plan
- Consistency with bilateral contracting guidelines
- Consistency with RPS standard terms and conditions (STC)
- Reasonableness of the levelized all-in price
- Consistency with RPS delivery requirements in Public Resources (PR) Code 25741
- Project viability assessment
- Consistency with Emissions Performance Standard

¹¹ <http://www.latimes.com/business/la-fi-solar18-2009sep18,0,1844073.story>

BrightSource PPAs, as modified by this Resolution, are consistent with PG&E's Commission adopted 2008 RPS Plan

California's RPS statute requires that the Commission review the results of a renewable energy resource solicitation submitted for approval by a utility.¹² The Commission reviews the results to verify that the utility conducted its solicitation according to its Commission approved procurement plan. PG&E's 2008 RPS procurement plan (Plan) was approved by D.08-02-008 on February 14, 2008. Pursuant to statute, PG&E's Plan includes an assessment of supply and demand to determine the optimal mix of renewable generation resources, consideration of flexible compliance mechanisms established by the Commission, and a bid solicitation protocol setting forth the need for renewable generation of various operational characteristics.¹³ The PPAs are based on the pro forma contracts which were approved in D.08-02-008.

BrightSource PPAs conflict with Commission rules

The PPAs include provisions relating to excess energy generated above the quantity scheduled for delivery. Under these provisions, PG&E would be authorized to procure the Green Attributes, including the renewable energy credits (RECs)¹⁴ associated with the RPS-eligible generation, separate from the energy. Because PG&E would only receive the Green Attributes associated with this generation, this constitutes an unbundled REC transaction. Under the current RPS rules, PG&E is not authorized to enter into an unbundled REC transaction for the purposes of RPS compliance.¹⁵ Accordingly, the PPAs are modified such that all PPA terms and conditions related to excess energy are not approved. (See Confidential Appendix A)

¹² Pub. Util. Code, Section §399.14

¹³ Pub. Util. Code, Section §399.14(a)(3)

¹⁴ The Commission defined the attributes of a REC for compliance with the RPS program in D.08-08-028.

¹⁵ D.06-10-019, Ordering Paragraph 23. "Transactions using unbundled energy credits, as defined in today's decision, for RPS compliance should not be allowed at this time."

BrightSource PPAs fit with PG&E's identified renewable resource needs

PG&E states that the Projects will meet the resource needs more recently identified in its 2009 RPS Plan. In its 2009 Plan, PG&E assumes that solar will provide approximately 70 percent of its long-term renewable generation but that projects selected through the 2009 solicitation will likely experience a four to six year development timeframe.¹⁶ The proposed solar thermal projects considered herein meet the identified resource need and are expected to achieve commercial operation in the relatively near term.

BrightSource PPAs compare favorably to PG&E's 2008 solicitation

Although the PPAs were negotiated bilaterally, PG&E conducted a least-cost, best-fit (LCBF) bid evaluation of the PPAs to compare them to their 2008 solicitation bids. PG&E's bid evaluation includes a quantitative and qualitative analysis, which focuses on four primary areas: 1) determination of a bid's market value; 2) calculation of transmission adders and integration costs; 3) evaluation of portfolio fit; and 4) consideration of non-price factors. The LCBF evaluation is generally used to establish a shortlist of proposals from PG&E's solicitation with whom PG&E will engage in contract negotiations. In this case, an LCBF evaluation was conducted for the bilaterally negotiated PPAs in order to evaluate the Projects' value relative to PG&E's other RPS options.

PG&E determined that the Projects are reasonable relative to proposals received in response to PG&E's 2008 solicitation because: the PPAs' market valuation compares favorably with bids from its 2008 solicitation; the Projects' on peak delivery profile provide "superior portfolio fit"; and the technology's relatively low water needs and high efficiency results in projects that are "less taxing on the environment" than most projects with a similar delivery profile."¹⁷

PG&E's Procurement Review Group (PRG) participated in review of the PPAs

The PRG for PG&E consists of: California Department of Water Resources, Union of Concerned Scientists, Division of Ratepayer Advocates, Coalition of California

¹⁶ AL 3459-E, page 6

¹⁷ AL 3459-E, page 9.

Utility Employees, The Utility Reform Network, Jan Reid as a PG&E ratepayer, and the Commission's Energy Division.

PG&E most recently informed its PRG of the BrightSource transactions on March 23, 2009. The PRG feedback, as described in the confidential information provided with the advice letter, did not provide a basis for disapproval of the PPAs.

BrightSource PPAs, as modified by this Resolution, are consistent with RPS bilateral contracting guidelines

The BrightSource PPAs are consistent with the bilateral contracting guidelines in D.06-10-019.

1. The PPAs will not be applied to PG&E's cost limitation.¹⁸
2. Pursuant to D.06-10-019, the PPAs were submitted by advice letter.¹⁹
3. The PPAs are at least one month in duration.²⁰
4. The PPAs are reasonably priced.²¹

Also, in D.09-06-050, this Commission determined that bilateral contracts should be reviewed according to the same processes and standards as contracts that come through a solicitation. Accordingly, the BrightSource PPAs were compared to PG&E's other RPS opportunities received in its 2008 RPS solicitation and the proposed agreement was reviewed PG&E's PRG. (See Sections "BrightSource PPA compares favorably to 2008 RPS solicitation" and "PPA prices are reasonable and recoverable in rates") Energy Division staff did not, however,

¹⁸ The PPAs are ineligible for the cost limitation because it did not result from a competitive solicitation. (PU Code §399.15(d)(2))

¹⁹ "For now, utilities' bilateral RPS contracts, of any length, must be submitted for approval by advice letter." (D.06-10-019, p.31)

²⁰ "All RPS-obligated LSEs are also free to enter into bilateral contracts of any length with RPS-eligible generators, as long as the contracts are at least one month in duration, to enable the CEC to verify RPS procurement claims." (D.06-10-019 p. 29)

²¹ The contract price of bilaterals must be deemed reasonable by the Commission. (D.06-10-019, p. 31)

require an Independent Evaluator report for the contract because the PPAs were executed before the Commission adopted D.09-06-050.

Consistency with RPS standard terms and conditions

The proposed PPAs conform to the Commission's decisions requiring STCs for RPS contracts.

"May Not be Modified" Terms

The PPAs do not deviate from the non-modifiable standard terms and conditions.

"May be Modified" Terms

During the course of negotiations, the parties identified a need to modify some of the modifiable standard terms in order to reach agreement. The changes were based upon mutual agreement reached during negotiations.

BrightSource PPA prices are reasonable and recoverable in rates

Based on expected online dates of 2014 through 2017 for 25-year contracts, the levelized price for the Projects do not exceed the 2008 MPR.²² The MPR is used by the Commission to evaluate the reasonableness of prices of long-term PPAs for RPS-eligible generation. The Commission's reasonableness review for RPS PPA prices also includes a comparison of the proposed PPAs to other proposed RPS projects from recent RPS solicitations, as well as, Commission approved projects.²³ Using this analysis, we determine that the PPA prices are reasonable. (See Confidential Appendix A for a detailed discussion of PPA pricing terms and conditions)

Energy from out-of-state Projects complies with Public Resources Code 25741

PG&E represents that any project developed pursuant to PPAs 3 through 7 will be interconnected to the California Independent System Operator (CAISO)

²² See Resolution E-4214.

²³ For example, see Resolution E-4222 and Resolution E-4240.

transmission system. Therefore, the Nevada sited Coyote Springs Projects will meet the in-state delivery requirements set forth in the Public Resources Code.

In the event that the Coyote Springs Projects (or any project developed under the PPAs approved by this Resolution) have their first point of interconnection in Nevada (or another state besides California), the PPAs require deliveries through a firm delivery schedule. This provision ensures that electricity produced by the facility is delivered to an in-state location, as required by PR Code §25741(b)(2)(B)(iii).

Consistency with Emissions Performance Standard

In D.07-01-039, the Commission adopted an Emissions Performance Standard (EPS) that applies to contracts with a term of five years or more for baseload generation with an annualized capacity factor of at least 60%. The PPAs do not constitute “covered procurement” under the EPS, as defined by D.07-01-039, because they concern RPS-eligible facilities with a capacity factor of less than 60% that will deliver their generation to an in-state location.

Project viability assessment and development status

PG&E believes the Projects are viable and will be developed according to the terms and conditions in the PPAs because:

Project milestones

The PPAs identify agreed upon project milestones, including the construction start date and commercial operation date. BrightSource’s obligations to meet these milestones are supported by performance assurance securities. PG&E believes that the BrightSource’s project development plan allows all milestones to be achieved.

Developer experience

PG&E explains that BrightSource Energy, Inc. was founded as Luz II, Inc. in 2004 by the CEO of Luz International Ltd. (Luz International). Luz International was the solar technology company that successfully designed, financed, and built nine solar energy plants in Southern California between 1984 and 1991.²⁴ This

²⁴ <http://www.osti.gov/accomplishments/NRELprofiles.html#luz>

development resulted in 350 MW Solar Electricity Generating Stations (SEGS) projects in the Mojave Desert, which are still in operation today. Several key members of the Luz International engineering and commercial team are now key members of BrightSource. Since then, BrightSource has refined the Luz technology, has developed a 6 megawatt pilot project, and has executed PPAs to develop 2,600 MWs of solar thermal capacity in California and Nevada.²⁵

Seller's creditworthiness and financing experience

PG&E believes that BrightSource has a reasonable likelihood of obtaining financing for the Projects. BrightSource has raised in excess of \$160 million for project development.²⁶ Also, BrightSource has applied for a Department of Energy (DOE) Loan Guarantee under the program created by the Energy Policy Act of 2005, as modified by The American Recovery and Reinvestment Act of 2009 (ARRA 2009), to support the financing of similar projects.²⁷

Given the current credit crisis, new renewable energy projects face financing risk. We believe that BrightSource's project development and financing experience will put it at an advantage when seeking financing. Nevertheless, financing is still a potential source of risk.

Investment Tax Credit (ITC) and cash grant

Section 48 of the Internal Revenue Code provides a 30 percent ITC for certain types of commercial energy projects, including solar technologies. In general, the ITC is currently available to qualified projects that are placed in service prior to the end of 2016, and the ITC is realized in the year in which the project begins commercial operation.²⁸

²⁵ PG&E ALs 3458-E (310 MW), AL 3459-E (1,000 MW), and Southern California Edison Company AL 2339-E (1,300 MW).

²⁶ http://www.brightsourceenergy.com/images/uploads/press_releases/Release5-14-08.pdf

²⁷ See Resolution E-4266.

²⁸ <http://eetd.lbl.gov/EA/EMP/reports/lbnl-1642e.pdf>

On February 17, 2009, ARRA 2009 was signed into law by President Obama. ARRA 2009 seeks to substantially impact the market for renewable energy technologies. ARRA 2009 focuses in two areas: (i) appropriations for government programs; and (ii) tax-based incentives. Specifically as it relates to these Projects, ARRA 2009 allows ITC-eligible projects to forego the ITC and instead elect a cash grant of equivalent value. To qualify for a cash grant in lieu of the ITC, a project must begin construction by December 31, 2010. If construction does not begin by that date, the Projects are eligible for the ITC.

Technology

The Projects will employ new, proprietary technology based on BrightSource's experience with the SEGS facilities. Specifically, BrightSource will develop solar thermal facilities using Luz Power Tower (LPT) technology. PG&E recounts the following benefits of LPT technology, compared to other solar thermal technologies, to include: more efficient steam production due to two-axis tracking; more efficient generation of electricity due to higher temperature steam production; less 'parasitic' energy usage for plant operation due to reduced movement of thermal mass; higher capacity factor; lower capital costs due to commodity-based inputs, no concrete foundations, and fewer pipes and cabling; and less water usage.²⁹

In June 2008, BrightSource opened the Solar Energy Development Center in Israel's Negev Desert, a solar demonstration facility used to test equipment, materials and procedures as well as construction and operating methods.³⁰ BrightSource reports that a six MW facility utilizing its LPT technology has been tested and verified by an independent engineering firm, and found to produce the world's highest temperature and pressure solar steam.

PG&E states that commercial scale development is not expected to present any issues that have not been successfully resolved during the demonstration phase. However, we note that there is risk in that the technology has never been employed at the scale provided under the PPAs.

²⁹ AL 3459-E, pp. 12-13.

³⁰ <http://www.brightsourceenergy.com/projects/sedc>

Site Control and Permitting Status

PG&E explains that the Coyote Springs site is on privately-owned land 50 miles northeast of Las Vegas on Highway 93. BrightSource has obtained site control for the privately held land through a lease option. The project site lies within a large master plan development zoned for multiple uses, including industrial use. Permitting for the projects is underway and PG&E expects the process to be completed in a timely matter.

Interconnection and transmission

BrightSource is planning to have the Coyote Springs Projects interconnect directly to Southern California Edison's El Dorado Substation, which is in the CAISO's control area.

Contribution to minimum quota requirement for long-term/new facility contracts

As new facilities, delivering pursuant to long-term PPAs, deliveries from the Projects will contribute to PG&E's minimum quota requirement under D.07-05-028, as described above.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments on August 24, 2009.

The Division of Ratepayer Advocates (DRA) filed timely comments on Draft Resolution E-4269 on Monday, September 14, 2009. In its comments, DRA states that the Draft Resolution, which approves PG&E's request with modifications,

should clarify what modifications are expected of the PPAs and how the parties should demonstrate their acceptance of and compliance with the ordered modifications.³¹ DRA notes that the Commission's standard contract term "CPUC Approval", is defined in part as "a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms: (a) approves this Agreement in its entirety. . ." ³² DRA recommends that the Draft Resolution be revised to require that PG&E file amended PPAs in a compliance filing through a Tier 1 Advice Letter.³³

On September 21, 2009, PG&E filed a timely response to DRA's comments. PG&E explains that the parties to the PPAs (BrightSource and PG&E) have agreed to accept the PPAs, as modified by the Draft Resolution.³⁴ Therefore, PG&E argues that a compliance filing is not necessary to meet the conditions of "CPUC Approval".

We appreciate DRA's comments seeking clarification on the Draft Resolution. Due to DRA's comments, the Commission received notice by PG&E that the parties to the PPAs, BrightSource and PG&E, understand and agree with the Commission's findings and conclusions in this Resolution. Specifically, that certain provisions in the PPAs conflict with this Commission's RPS procurement rules and are not approved. To be certain, we require that PG&E submit a letter signed by both parties agreeing to the terms as modified as a compliance filing, by Tier 1 Advice Letter.

³¹ DRA comments, page 1.

³² *Ibid*, page 2.

³³ *Ibid*.

³⁴ PG&E response, page 1.

FINDINGS

1. PG&E filed Advice Letter (AL) 3459-E on May 13, 2009 requesting Commission review and approval of five renewable energy resource power purchase agreement (PPAs) with BrightSource Energy, Inc.
2. The RPS Program requires each utility, including PG&E, to increase the amount of renewable energy in its portfolio to 20 percent by 2010, increasing by a minimum of one percent per year.
3. On November 17, 2008, Governor Schwarzenegger issued Executive Order S-14-08, which sets a target for energy retailers to deliver 33 percent of electrical energy from renewable resources by 2020.
4. The Commission requires each utility to establish a Procurement Review Group to review the utilities' procurement process and selected contracts.
5. The California Energy Commission is responsible for certifying the eligibility of renewable energy facilities for the RPS program, as well as verifying and tracking the generation and delivery of renewable energy claimed for compliance with the RPS program.
6. The PPAs, with the exception of provisions concerning excess energy generated above the quantity scheduled for delivery, are consistent with PG&E's approved 2008 RPS Procurement Plan, which was approved by D.08-02-008.
7. The PPA provisions concerning excess energy generated above the quantity scheduled for delivery constitute an unbundled REC transaction.
8. Pursuant to D.06-10-019, PG&E is not authorized to enter into unbundled REC transactions for the purposes of RPS compliance.
9. The PPA provisions concerning excess energy generated above the quantity scheduled for delivery are not approved.
10. The PPAs fit with PG&E's most recently identified renewable resource needs.
11. D.04-06-014 and D.07-11-025 set forth standard terms and conditions to be incorporated into each RPS PPA. Those terms were compiled and published by D.08-04-009, as modified by D.08-08-028.
12. The PPAs include the Commission adopted RPS standard terms and conditions deemed "non-modifiable".

13. The PPAs include terms and conditions to ensure that energy from the Projects is delivered consistent with the requirements established in Public Resources Code § 25741.
14. The PPAs do not constitute “covered procurement” under the EPS, as defined by D.07-01-039, because they concern RPS-eligible facilities with a capacity factor of less than 60% that will deliver their generation to an in-state location.
15. On September 14, 2009, DRA filed timely comments on the Draft Resolution. PG&E filed a timely response on September 21, 2009.
16. Any stranded costs that may arise from the PPA are subject to the provisions of D.08-09-012 that authorize recovery of stranded renewables procurement costs over the life of the contract.
17. Procurement pursuant to the PPAs, as modified to render inoperative provisions concerning excess energy generated above the quantity scheduled for delivery, is procurement from an eligible renewable energy resource for purposes of determining PG&E’s compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 et seq.), D.03-06-071 and D.06-10-050, or other applicable law.
18. The payments made under the PPAs, as modified to render inoperative provisions concerning excess energy generated above the quantity scheduled for delivery, between PG&E and BrightSource Energy, Inc. are reasonable and in the public interest; accordingly, the payments to be made by PG&E are fully recoverable in rates over the life of the projects, subject to Commission review of PG&E’s administration of the PPAs.
19. PG&E included with AL 3459-E a Royalty Agreement between PG&E and BrightSource Energy, Inc.
20. Certain material filed under seal pursuant to Public Utilities (Pub. Util.) Code Section 583 and General Order (G.O.) 66-C, and considered for possible disclosure, should not be disclosed. Accordingly, the confidential appendices, marked “[REDACTED]” in the redacted copy, should not be made public upon Commission approval of this resolution.
21. The PPAs, except for provisions concerning excess energy generated above the quantity scheduled for delivery, are reasonable and should be approved.

22. AL 3459-E should be approved effective today, subject to the modification described above.

THEREFORE IT IS ORDERED:

1. Pacific Gas and Electric Company's Advice Letter 3459-E, requesting Commission review and approval of five power purchase agreements with BrightSource Energy, Inc., is approved with modifications.
2. The power purchase agreement terms and conditions concerning excess energy generated above the quantity scheduled for delivery, filed by Pacific Gas and Electric Company in Advice Letter 3459-E, are not approved.
3. Within 30 days of the effective date of this Resolution, Pacific Gas and Electric Company shall file a Tier 1 Advice Letter with the Energy Division containing a letter signed by BrightSource Energy, Inc. and Pacific Gas and Electric Company agreeing that the power purchase agreement terms and conditions that concern an unbundled renewable energy credit transaction are not approved.
4. Any proceeds from the Royalty Agreement between Pacific Gas and Electric Company and BrightSource Energy, Inc. will be credited to Pacific Gas and Electric Company's Energy Resource Recovery Account for the benefit of Pacific Gas and Electric Company's ratepayers.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on September 24, 2009; the following Commissioners voting favorably thereon:

/s/ PAUL CLANON
PAUL CLANON
Executive Director

MICHAEL R. PEEVEY
PRESIDENT
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY ALAN SIMON
Commissioners

Confidential Appendix A

PPA Price Analysis and
Royalty Agreement

[REDACTED]

Confidential Appendix B

Summary of Site Control; Permitting and
Interconnection Status; PPA Terms and Conditions

[REDACTED]

ATTACHMENT B
PG&E PROJECT DEVELOPMENT STATUS REPORT
EXCERPTS

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue
Implementation and Administration of
California Renewables Portfolio Standard
Program.

Rulemaking 11-05-005
(Filed May 5, 2011)

**AUGUST 2013 RENEWABLES PORTFOLIO STANDARD
PROJECT DEVELOPMENT STATUS REPORT OF
PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
(PUBLIC VERSION)**

M. GRADY MATHAI-JACKSON
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Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

August 1, 2013

	A	B	C	D	E	AK	AL	AM	AN	AO	AP	AQ
26	Data is current as of July 15, 2013.											
	Overall Status	CPUC ID	IOU ID	IOU Contact Person (name, e-mail, phone number)	Project Name	Guaranteed Construction Start Date	Expected or Actual Construction Start Date	Construction Status	Guaranteed COD	Expected or Actual COD	Milestone Progress Notes	General Project Information Notes
27												
28	Under Negotiation											
29	Under Negotiation											
30	Under Negotiation											
31	Under Negotiation											
32	Under Negotiation											
33	Under Negotiation											
34	Under Negotiation											
35	Under Negotiation											
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40	Under Negotiation											
41	Under Negotiation											
42	Under Negotiation											
43	Under Negotiation											
44	In Development	PG7085	33R087		TransAlta REC			Complete		10/31/2011		
45	In Development	PG2047	33R254		SPI Biomass Portfolio					10/1/2014		
46	In Development	PG5130	33R256		Lost Hills Solar					12/31/2019		
47	In Development	PG5116	33R257		Cuyama Solar Array					12/31/2019		
48	In Development		33R258		Blackwell Solar					12/31/2019		
49	In Development	PG5103	33R084		Agua Caliente Solar Project					3/2/2015		
50	In Development	PG5084	33R073		AV Solar Ranch One					1/9/2015		
51	In Development	PG1034	33R283		ABEC Bidart-Old River LLC					2/28/2014		
52	In Development	PG7036	33R136		Blackspring Ridge IA					6/24/2014		
53	In Development	PG7037	33R137		Blackspring Ridge IB					6/24/2014		
54	In Development	PG6004	33R063		Ivanpah Unit 1					9/13/2013		
55	In Development	PG6005	33R064		Ivanpah Unit 3					12/31/2013		
56	In Development	PG6007	33R068		Solar Partners XXII (Palen SEGS, BrightSource PPA 6)					12/1/2016		
57	In Development	PG6008	33R069		Solar Partners XXIII (Palen, BrightSource PPA 7)					7/1/2017		
58	In Development	PG5115	33R166		Copper Mountain Solar 2					7/15/2015		
59	In Development	PG5088	33R121		Corcoran					10/1/2013		
60	In Development	PG5089	33R138		Desert Center Solar Farm					9/9/2015		
61	In Development	PG5097	33R052		High Plains Ranch II					12/26/2013		
62	In Development	PG6013	33R089-AR		Mojave Solar Project					11/21/2014		
63	In Development	PG5131	33R148		North Star Solar 1					6/20/2015		
64	In Development	PG1046	33R133		Potrero Hills Landfill					6/15/2015		
65	In Development	PG6000	33R090		Genesis Solar Energy Project					11/30/2014		
66	In Development	PG2028	33R099		DTE Stockton			Complete		9/1/2013		
67	In Development	PG1049	33R132		Sunshine Landfill					4/14/2015		
68	In Development	PG5098	33R056		Topaz Solar Farm					8/18/2015		
69	In Development	PG5127	33R255		Kansas					12/31/2016		

DAVID S. SCHLOSBERG

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Oakland, CA 94612

EXPERIENCE

- 2013 – Present **BrightSource Energy** – Regulatory & Market Affairs, Senior Manager Oakland, CA
- Manage and shape energy market strategy and policy positions in regulatory proceedings to ensure proper valuation of concentrating solar power and thermal energy storage
 - Liaise with key political and regulatory stakeholders, including the governor’s office, legislature, CARB, EPA, CPUC, CEC and CAISO on strategic company and industry issues
 - Monitor and intervene in legislative processes, such as those related to renewable portfolio standards, greenhouse gas emissions, distribution generation, energy storage and integration issues
 - Represent BrightSource within multiple solar, renewable energy and storage industry associations
- 2011 – 2012 **BrightSource Energy** – Origination Manager Oakland, CA
- Executed and negotiated 1GW of PPA amendments with SCE, incorporating 600MW of storage
 - Devised power marketing strategy based on competitive assessment of energy market conditions
 - Initiated BrightSource business development relationships with U.S. utilities in new geographies
 - Built and administered contract management process for 2.4GW of PPAs with SCE and PG&E
 - Primary team liaison to development, transmission, regulatory and project finance departments
- 2010 **SunPower Corporation** – O&M and Asset Management Richmond, CA
- Designed retail performance guarantee pricing model to stem market share gains by solar lessors
 - Negotiated O&M and performance guarantee agreements for multiple utility-scale solar projects
 - Initiated relationships with photovoltaic module warranty insurers and solar derivatives providers

EDUCATION

- University of California at Berkeley, Walter A. Haas School of Business**
Master of Business Administration, May 2011
– Graduated with Honors
- University of Pennsylvania, The Wharton School of Business**
Bachelor of Science in Economics, May 2002
– Magna Cum Laude, Concentration in Finance