

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



December 29, 2010

**Advice Letter 3629-E**

Jane K. Yura  
Vice President, Regulation and Rates  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10B  
P.O. Box 770000  
San Francisco, CA 94177

**Subject: Contract Between PG&E and Desert Sunlight Holdings LLC for  
Procurement of Renewable Energy Resources Resulting from  
PG&E's 2008 Renewables Portfolio Solicitation**

Dear Ms. Yura:

Advice Letter 3629-E is effective September 23, 2010 per Resolution E-4357.

Sincerely,

A handwritten signature in blue ink that reads "Julie A. Fitch".

Julie A. Fitch, Director  
Energy Division

March 8, 2010

**Advice 3629-E**  
(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

**Subject: Contract Between PG&E and Desert Sunlight Holdings LLC for  
Procurement of Renewable Energy Resources Resulting From  
PG&E's 2008 Renewables Portfolio Solicitation**

**I. INTRODUCTION**

**A. Purpose**

Pacific Gas and Electric Company ("PG&E") seeks the California Public Utilities Commission's ("Commission" or "CPUC") approval of a power purchase agreement ("PPA") that PG&E has executed with Desert Sunlight Holdings, LLC ("Desert Sunlight"). PG&E submits the PPA for CPUC approval to establish PG&E's ability to recover the cost of payments made pursuant to the PPA through its Energy Resource Recovery Account ("ERRA").

**B. Subject**

The Commission's approval of the PPA will authorize PG&E to accept deliveries of 300 megawatts ("MW") of Renewables Portfolio Standard ("RPS") – eligible energy from a new solar photovoltaic ("PV") project (the "Project") located in Desert Center, California, for a term of 25 years. The project will interconnect to the California Independent System Operator ("CAISO") controlled grid at Southern California Edison's ("SCE") new Red Bluff substation. When completed, the Project is expected to deliver on average approximately 619 gigawatt hours ("GWh") per year, which will contribute to PG&E's long-term RPS goals. The Project is being developed by Desert Sunlight, which is a limited liability

corporation. Desert Sunlight is a wholly-owned subsidiary of First Solar, Inc. (“First Solar”), a well-established solar developer and manufacturer of thin-film solar photovoltaic panels.

The PPA resulted from the 2008 RPS Solicitation. Consistent with the protocol used for review of RPS contracts resulting from the 2008 RPS Solicitation, PG&E has included Confidential Appendices A through G and public Appendix H, which demonstrate the reasonableness of the PPA. As discussed below, PG&E requests confidential treatment for the information contained in Appendices A through G.

PG&E requests that the Commission issue a resolution no later than September 23, 2010 approving the PPA in its entirety, and all payments to be made by PG&E under the PPA, and containing the findings required by the definition of CPUC Approval adopted by Decision (“D.”) 07-11-025 and D.08-04-009.<sup>1</sup>

### C. General Project Description

The following table summarizes the substantive features of the Project:

|  |   |
|--|---|
| <b>Project Name</b>                              | Desert Sunlight                             |
| <b>Owner/Developer</b>                           | Desert Sunlight Holdings LLC                |
| <b>Technology</b>                                | Solar PV                                    |
| <b>Capacity (MW)</b>                             | 300 MW                                      |
| <b>Capacity Factor</b>                           | 24% at guaranteed commercial operation      |
| <b>Expected Generation (GMWh/Year)</b>           | 619 GWh average per year over contract term |
| <b>Initial Commercial Operational Date (COD)</b> | July 1, 2015                                |
| <b>Date Contract Delivery Term Begins</b>        | Commercial Operation Date                   |

---

<sup>1</sup> As provided by D.07-11-025 and D.08-04-009, the Commission must approve the PPA and payments to be made thereunder, and find that the procurement will count toward PG&E’s RPS procurement obligations to avoid rescission.

|  |   |
|--|---|
| <b>Delivery Term (Years)</b>   | 25 years  |
| <b>Vintage (New / Existing / Repower)</b>  | New   |
| <b>Location (City and State)</b>   | Desert Center, CA   |
| <b>Control Area (e.g., CAISO, BPA)</b>   | CAISO   |
| <b>Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI)</b> | The project is within the Riverside East CREZ, and is sited within a Solar Energy Study zone as designated under the Programmatic Solar Energy Development EIS <sup>2</sup> . |
| <b>Type of cooling, if applicable</b>  | Not applicable  |
| <b>Price relative to MPR (i.e., above/below)</b>   | Exceeds the applicable 2009 MPR for a project coming online in 2015. Cost information is discussed in further detail in Confidential Appendices A and D.                      |

A copy of the PPA is provided in Confidential Appendix F. A contract analysis is provided in Confidential Appendix D.

#### **D. General Deal Structure**

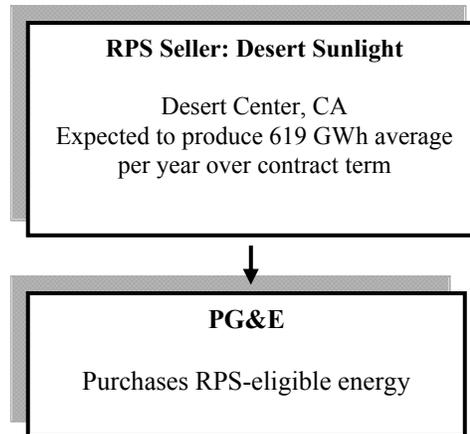
The Project is the 300-MW contract executed as a result of PG&E's 2008 RPS Solicitation. Desert Sunlight is a wholly-owned subsidiary of First Solar. As discussed above, the Project will interconnect into the CAISO-controlled grid on the SCE system at the new Red Bluff substation. PG&E will act as scheduling coordinator. There is no firming and shaping associated with this deal.

A diagram of the delivery structure is included below:

---

<sup>2</sup>[http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS\\_REALTY\\_AND\\_RESOURCE\\_PROTECTION/\\_energy/solar\\_and\\_wind/solar\\_energy\\_study.Par.38387.File.dat/SESAs\\_CA\\_rev\\_Jul\\_23\\_09\\_sm.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/solar_and_wind/solar_energy_study.Par.38387.File.dat/SESAs_CA_rev_Jul_23_09_sm.pdf)

### Diagram of Delivery Structure for Desert Sunlight RPS Transaction



#### E. RPS Statutory Goals

Senate Bill (“SB”) 1078 established the California RPS Program, requiring an electrical corporation to increase its use of eligible renewable energy resources to 20 percent of total retail sales no later than December 31, 2017. The legislature subsequently accelerated the RPS goal to reach 20 percent by the end of 2010. In addition, California is actively considering increasing its renewable goals beyond the current 20 percent renewable energy target. Governor Schwarzenegger’s Executive Order issued in November 2008 describes a new target for California of 33 percent renewable energy by 2020, and his executive order issued in September 2009 directs the California Air Resources Board to adopt a regulation consistent with this 33 percent target by July 31, 2010. Finally, the California Air Resources Board’s Scoping Plan, adopted in December 2008, identifies an increase in the renewables target to 33 percent by 2020 as a key measure for reducing greenhouse gas emissions and meeting California’s climate change goals. The Project is scheduled to become operational in 2015. The PPA will contribute to maintaining PG&E’s 20 percent RPS goal, and will also contribute to California’s potentially higher renewable energy goals (*i.e.*, 33%) in the years beyond 2010.

#### F. Confidentiality

In support of this Advice Letter, PG&E has provided the confidential information listed under Section C “Request for Confidential Treatment” below, including the PPA and other information that more specifically describes the rights and obligations of the parties. This information is being submitted in the manner directed by D.08-04-023 and the August 22, 2006 Administrative Law Judge’s Ruling Clarifying Interim Procedures for Complying with D.06-06-066 to demonstrate the confidentiality of the material and to invoke the protection of

confidential utility information provided under either the terms of the IOU Matrix, Appendix 1 of D.06-06-066 and Appendix C of D.08-04-023, or General Order 66-C. A separate Declaration Seeking Confidential Treatment is being filed concurrently with this Advice Letter.

## **II. CONSISTENCY WITH COMMISSION DECISIONS**

### **A. Consistency with PG&E's Adopted RPS Procurement Plan**

PG&E's 2008 renewable procurement plan ("2008 Plan") was conditionally approved in D.08-02-008. As required by statute, the 2008 Plan included an assessment of supply and demand to determine the optimal mix of renewable generation resources, consideration of compliance flexibility mechanisms established by the Commission, and a bid solicitation setting forth the need for renewable generation of various operational characteristics.<sup>3</sup>

The goal of PG&E's 2008 Plan was to procure approximately one to two percent of its retail sales volume, or between 800 GWh and 1,600 GWh per year. With expected RPS-eligible energy deliveries, on average, of 619 GWh per year commencing in 2015, the PPA meets the criteria for the renewables procurement contained in the 2008 Plan. Additionally, the PPA will contribute to PG&E's longer-term RPS goals.

The PPA is also consistent with PG&E's 2008 Plan because it was solicited, negotiated and executed through PG&E's adherence to its Solicitation Protocol, which is the primary component of the 2008 Plan. PG&E generally followed the RPS Solicitation schedule set forth in its Solicitation Protocol, but, ultimately, the schedule for concluding negotiations was necessarily extended. The resulting 2008 Solicitation schedule is shown below:

---

<sup>3</sup> Pub. Util. Code § 399.14(a)(3).

| <b>Date</b>                 | <b>Event</b>   |
|-----------------------------|--|
| <b>March 7, 2008</b>        | PG&E issues Solicitation   |
| <b>March 14, 2008</b>       | Deadline for Participant to submit non-binding Notice of Intent to Bid and reservation for Bidders Conference                          |
| <b>March 17, 2008</b>       | Bidders Conference   |
| <b>May 12, 2008</b>         | Deadline for Participants to submit Offer(s)   |
| <b>July 1, 2008</b>         | PG&E notifies Shortlisted bidders  |
| <b>July 15, 2008</b>        | PG&E submits final shortlist to Commission and procurement review group (“PRG”)  |
| <b>By December 31, 2008</b> | PG&E and Participants negotiate and execute Agreements subject to Regulatory Approval; PG&E submits Agreements for Regulatory Approval |
| <b>December 22, 2008</b>    | PG&E submits first power purchase agreement for Commission approval  |
| <b>June 4, 2009</b>         | PG&E submits second power purchase agreement for Commission approval   |
| <b>July 27, 2009</b>        | PG&E submits third power purchase agreement for Commission approval  |
| <b>September 16, 2009</b>   | PG&E submits fourth power purchase agreement for Commission approval   |
| <b>October 15, 2009</b>     | PG&E submits fifth power purchase agreement for Commission approval  |
| <b>February 10, 2010</b>    | PG&E submits sixth power purchase agreement for Commission approval  |
| <b>March 8, 2010</b>        | PG&E submits seventh power purchase agreement, the Desert Sunlight PPA, for Commission approval  |

## **B. Consistency with Commission Guidelines for Bilateral Contracting**

Because the PPA is a result of the 2008 RPS Solicitation, this section is not applicable.

## **C. Consistency of Bid Evaluation Process with Least-Cost Best Fit Decision**

The RPS statute requires PG&E to procure the “least-cost, best fit” (“LCBF”) eligible renewable resources.<sup>4</sup> The LCBF decision directs the utilities to use certain criteria in their bid ranking<sup>5</sup> and offers guidance regarding the process by which the utility ranks bids in order to select or “shortlist” the bids with which it will commence negotiations. PG&E’s approved process for identifying the LCBF renewable resources focuses on four primary areas:

1. Determination of market value of bid,
2. Calculation of transmission adders and integration costs,
3. Evaluation of portfolio fit, and
4. Consideration of non-price factors.

PG&E examined the reasonableness of the PPA using the same comparison tools used with other RPS transactions received in the 2008 RPS Solicitation and with bilaterals currently being offered to PG&E. The general finding is that this Project is reasonably priced. A more detailed discussion of PG&E’s evaluation of the PPA is provided in Confidential Appendices A and D.

### **1. Market Valuation**

In a “mark-to-market analysis,” the present value of the bidder’s payment stream is compared with the present value of the product’s market value to determine the benefit (positive or negative) from the procurement of the resource, irrespective of PG&E’s portfolio. This analysis includes evaluation of the bid price and indirect costs, such as transmission and integration costs. PG&E’s analysis of the market value of the PPA is addressed in Confidential Appendix A.

---

<sup>4</sup> Pub. Util. Code § 399.14(a)(2)(B).

<sup>5</sup> D.04-07-029.

## **2. Portfolio Fit**

Portfolio fit considers how well an offer's features match PG&E's portfolio needs. As part of the portfolio fit assessment, PG&E differentiates offers by the firmness of their energy delivery and by their energy delivery patterns. A higher portfolio fit measure is assigned to the energy that PG&E is sure to receive and fits the needs of the existing portfolio. As the project is a solar photovoltaic plant, and will be providing energy that is somewhat coincident with the profile of demand throughout the day, the portfolio fit is good. Thus, the PPA fits PG&E's portfolio in a satisfactory manner.

## **3. Consistency with the Transmission Ranking Cost Decision**

Under the transmission ranking cost decision, the customer's potential cost of accepting energy deliveries from a project must get considered when determining the project's value. PG&E determined the Transmission Ranking Cost Report ("TRCR") cluster at which each shortlisted project would interconnect to the transmission grid. Consistent with Commission decisions, PG&E assigned a transmission adder to each offer for evaluation based on the potential transmission congestion, the associated proxy transmission network upgrades and the associated capital costs that may be needed to accommodate delivery at this cluster. Further transmission details are discussed in Confidential Appendices A and D.

## **4. Consistent Application of TODs**

Application of the time of delivery ("TOD") factors is addressed in Confidential Appendix A.

## **5. Qualitative Factors**

PG&E considered qualitative factors as required by D.04-07-029 and D.07-02-011 when evaluating the PPA, including benefits to low-income or minority communities, environmental stewardship, local reliability, and resource diversity benefits.

Riverside County, where the Project is located, had an unemployment rate of 14% as of December, 2009.<sup>6</sup> Desert Sunlight has informed PG&E that the Project is anticipated to provide approximately 430 construction jobs at peak over 3-4 years and approximately 15 head-of-household jobs for ongoing monitoring and

---

<sup>6</sup> [http://www.bls.gov/eag/eag.ca\\_riverside\\_msa.htm](http://www.bls.gov/eag/eag.ca_riverside_msa.htm)

maintenance once the project is constructed. The Project will also bring approximately \$100 million in sales tax revenue to California of which approximately \$10 million would go to local community during construction and operation.

#### **D. Compliance with Standard Terms and Conditions**

The Commission set forth standard terms and conditions to be incorporated into contracts for the purchase of electricity from eligible renewable energy resources in D.04-06-014 and D.07-02-011, as modified by D.07-05-057 and D.07-11-025. These terms and conditions were compiled and published in D.08-04-009. Additionally, the non-modifiable term related to Green Attributes was finalized in D.08-08-028.

The non-modifiable terms in the PPA conform exactly to the “non-modifiable” terms set forth in Attachment A of D.07-11-025 and Appendix A of D.08-04-009, as modified by D.08-08-028.

The terms in the PPA that correspond to the “modifiable” standard terms and conditions drafted in D.07-11-025 and D.08-04-009 have been modified, based upon mutual agreement reached during negotiations. A comparison of the terms in the PPA against the terms in PG&E’s 2009 RPS PPA form in the Solicitation Protocol dated June 29, 2009 is provided in Confidential Appendix E.

Each provision in the PPA is essential to the negotiated agreement between the parties, and therefore, the Commission should not modify any of the provisions. The Commission should consider the PPA as a whole, in terms of their ultimate effect on utility customers. The PPA protects the interests of PG&E’s customers while achieving the Commission’s goal of increasing procurement from eligible renewable resources. The following table sets forth the specific page and section number where the Commission’s non-modifiable terms are located in the PPA.

| <b>Non-Modifiable Term</b>       | <b>PPA Section No.</b> | <b>PPA Page No.</b> |
|----------------------------------|------------------------|---------------------|
| STC 1: CPUC Approval             | 1.53                   | 5                   |
| STC 2: RECs and Green Attributes |                        |                     |
| • Definition of Green Attributes | 1.103                  | 11                  |
| • Conveyance of Green Attributes | 3.2                    | 33-34               |
| STC 6: Eligibility               | 10.2(b)(i)             | 68                  |
| STC 17: Applicable Law           | 10.12                  | 76                  |

**E. Consistency with Unbundled Renewable Energy Credit Transactions**

The PPA is for the purchase of bundled RPS-eligible energy and therefore does not include the purchase of unbundled renewable energy credits.

**F. Consistency with Minimum Quantity Decision**

In D.07-05-028, the Commission determined that in order to count energy deliveries from short-term contracts with existing facilities toward RPS goals, RPS-obligated load-serving entities must contract for deliveries equal to at least 0.25 percent of their prior year's retail sales through long-term contracts or through short-term contracts with new facilities. The PPA is a long-term contract executed in 2010 and thus counts toward PG&E's contracting obligation under D.07-05-028. PG&E expects that in 2010, it will be in compliance with the minimum quantity requirement set forth in D.07-05-028.

**G. Tier 2 Short-Term Contract "Fast Track" Process**

PG&E is not submitting this contract under the "Fast Track" Process.

**H. Market Price Reference**

The actual price under the PPA is confidential, market sensitive information. As the PPA was executed over 18 months from the close of PG&E's 2008 RPS Solicitation, it is appropriate to compare the PPA price with the most recently approved market price referent ("MPR") and the TOD factors associated with that

solicitation year,<sup>7</sup> which are the 2009 MPR established in Resolution E-4298, on December 17, 2009 and PG&E's 2009 TOD factors. The TOD-adjusted price under the PPA is above the applicable 2009 TOD-adjusted 2009 MPR. Total cost information is discussed in Confidential Appendices A and D.

### **I. Above Market Funds**

Because the PPA is a long-term contract for a bundled renewable energy product from a new facility that was selected through PG&E's competitive solicitation, the PPA is consistent with SB 1036 and is eligible for above-market funds ("AMF"). However, although the PPA is technically eligible for AMFs, PG&E was notified by the CPUC on May 28, 2009 that PG&E had exhausted its portion of the AMFs available for contract payments that are above the MPR. Since exhausting its AMFs, PG&E has continued to voluntarily procure renewables that are priced above the MPR, subject to Commission approval and a finding that the procurement is just and reasonable and fully recoverable in rates. PG&E is proposing to voluntarily procure this above-MPR renewable energy pursuant to Public Utilities Code section 399.15(d)(4). PG&E's AMF analysis is included in Confidential Appendix D.

### **J. Compliance with Interim Emissions Performance Standard**

A greenhouse gas emissions performance standard ("EPS") was established by Senate Bill 1368 ("SB 1368"), 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.

In D.07-01-039, the Commission adopted an Emissions Performance Standard ("EPS") that applies to contracts for a term of five or more years for baseload generation with an annualized plant capacity factor of at least 60 percent. The PPA is not a covered procurement subject to the EPS because the generating facility has a forecast annualized capacity factor of less than 60% and therefore is not baseload generation under paragraphs 1(a)(ii) and 3(2)(a) of the Adopted Interim EPS Rules.

Notification of compliance with D.07-01-039 is provided through this Advice Letter, which has been served on the service list in the RPS rulemaking, R.08-08-009.

---

<sup>7</sup> See Resolution E-4199 at 36 ("Contracts executed after 18 months from the close of the bid's solicitation should be compared against the most recently approved MPR and the TODs associated with that solicitation year.").

### **K. Procurement Review Group Participation**

The Procurement Review Group (“PRG”) for PG&E includes representatives of the California Department of Water Resources (“DWR”)<sup>8</sup>, the Commission’s Energy Division and Division of Ratepayer Advocates, Union of Concerned Scientists (“UCS”), the Utility Reform Network (“TURN”), the California Utility Employees (“CUE”), and Jan Reid, as a PG&E ratepayer. PG&E initially informed its PRG of the Desert Sunlight offer on June 20, 2008. The PRG was subsequently updated on the Project on July 15, 2008, August 2009 and December 2009. PG&E further addresses PRG feedback in Confidential Appendix A.

### **L. Independent Evaluator**

The independent evaluator (“IE”), Lewis Hashimoto from Arroyo Seco Consulting, evaluated the PPA and concluded that the PPA merits CPUC approval. However, the IE did raise several concerns and issues regarding specific PPA provisions. PG&E addresses these concerns and issues in more detail in Appendices A and D., Please refer to Appendix H for public information on the Independent Evaluation of the PPA and Appendix C for confidential information on the Independent Evaluation of the PPA.

Any findings of the IE to the PRG regarding the applicable solicitation, the project/bid, and or contract negotiations are contained in those appendices and in Confidential Appendix A.

## **III. PROJECT DEVELOPMENT STATUS**

### **A. Company / Development Team**

First Solar, the parent company of Desert Sunlight, is a well-capitalized public company, with 2008 revenues of over \$1.2 billion. First Solar has supplied panels to several utility-scale PV plants, and has been charged with the construction and operation of those plants, including Sempra’s El Dorado plant located in Nevada, which has been in operation since 2009, and NRG’s 21 MW Blythe plant, for which SCE is the off-taker.

### **B. Technology**

---

<sup>8</sup> As of January 14, 2010, DWR no longer participates in the RPS portions of the PRG meetings and does not receive information on PG&E’s RPS activities.

### **1. Technology Type and Level of Technology Maturity**

The Project will use First Solar's high efficiency "thin-film" PV panel. Thin-film PV panels, including panels manufactured by First Solar, have been used in installations throughout the world, in both small and utility scale applications. As noted above, First Solar has provided the panels for the 10 MW El Dorado, Nevada PV facility, which is owned by Sempra and the 21 MW NRG Blythe facility. In addition, First Solar will be supplying the panels for Sempra's 48 MW Copper Mountain, Nevada PV facility. PG&E is the off-taker for both Sempra facilities mentioned above.

### **2. Quality of Renewable Resource**

The Project is in a well-known and highly predictable solar resource area, and the resource has been verified by an independent third party. Please see confidential Appendices A and C for more on the solar resource at the site.

### **3. Other Resources Required**

No other resources are required.

## **C. Development Milestones**

### **1. Site Control**

As the site is on Bureau of Land Management ("BLM") land, the project is undergoing a National Environmental Policy Act ("NEPA") permitting process. The developer submitted a Plan of Development for the site in December, 2009, and review is under way. Please see confidential Appendices A, C and D for further details.

First Solar has an SF 299 and cost recovery agreement with the BLM, which grants them exclusive right to pursue development on the site.

## 2. Equipment Procurement

First Solar will be the equipment provider and Engineering, Procurement and Construction (“EPC”) contractor on the Project.

## 3. Permitting / Certification Status

The PPA includes the non-modifiable representation and warranty that during the delivery period, the Project will constitute an eligible renewable energy resource certified by the CEC.

First Solar is currently in the Federal NEPA review process. First Solar has submitted its Environmental Impact Statement (“EIS”), and is working with BLM, the lead agency, on the project review. In addition, the Project has been designated as a “fast track” project by the Department of Interior (“DOI”). This fast track designation means that the DOI, through the NEPA process, would like to approve the project so that it can begin construction by the end of 2010 to qualify for the Treasury Cash In-Lieu of Investment Tax Credit Grant.

The following tables summarize key, non-confidential permits, agreements, and licenses that Desert Sunlight has identified may be necessary for the construction and operation of the generation facility.

### Permit Table

| Permit          | Lead Agency | Description     | Status  | Expected Date |
|-----------------|-------------|-----------------|---|---------------|
| FLPMA ROW Grant | BLM         | Land use permit | The original FLPMA Standard Form 299 ROW application was submitted to BLM in November 2006; three updates were later submitted, one in February 2007, one in June 2009, and one in October 2009. The original POD was submitted in April 2007 with an update based on BLM’s July 2008 POD guidelines submitted in October 2008. This POD is an update to the 2007 and 2008 PODs.<br><br>The ROW Grant is subject to NEPA review and terms and conditions as set forth under FLPMA and BLM’s | November 2010 |

| Permit   | Lead Agency                          | Description   | Status   | Expected Date |
|--|--------------------------------------|---|--|---------------|
|  |                                      |   | implementing regulations. BLM will issue a ROW grant and ROD at the end of the NEPA process.   |               |
| Section 404 Clean Water Act (CWA) Permit   | U.S. Army Corps of Engineers (USACE) | Expect to receive concurrence that USACE does not have jurisdiction       | The preliminary investigation and assessment of the Preferred Project Site indicates that the Site does not contain waters or wetlands subject to Federal CWA jurisdiction. First Solar will work with the USACE to obtain written concurrence regarding the lack of Federal jurisdiction under CWA.   | N/A           |
| Endangered/Threatened Species Consultation and Incidental Take Statement under the Federal ESA | USFWS                                | Permit for impacting endangered or threatened species                     | First Solar and the BLM will engage the USFWS in the ESA Section 7 consultation process concurrently with the NEPA review process and will obtain incidental take statement authority, as necessary. Informal meetings, e-mail discussions, and phone calls are being conducted to streamline this process by familiarizing USFWS with the Project and eliciting agency concerns to be addressed throughout the process. Biological surveys for federally-listed species have been conducted for the Preferred Project Site, including the Proposed Transmission Corridors and substation locations. | August 2010   |
| National Historic Preservation Act Section 106 Compliance                                      | BLM                                  | Procedures to be followed by BLM in the course of its NEPA review process | Identification of cultural resources within the Project's Area of Potential Effects is ongoing. BLM will initiate consultation with the State Historic Preservation Office after Class III cultural resource inventories have been completed and   | August 2010   |

| Permit  | Lead Agency                                | Description   | Status  | Expected Date |
|---|--|---|---|---------------|
|   |  |   | approved. Section 106 compliance requirements will be met prior to the completion of NEPA analysis.   |               |
| Archaeological Resources Protection Act, Cultural Resource Use Permit | BLM, State Office                          | Permit for testing and recording data regarding any affected cultural resources | A BLM Cultural Resource Use Permit will be obtained for the purposes of testing to determine the National Register of Historic Places significance of identified sites and to conduct data recovery on sites adversely affected by project construction and operation.  | August 2010   |
| Fieldwork Authorization   | BLM, Palm Springs-South Coast Field Office | Authorization to conduct cultural resource inventories                          | A BLM Fieldwork Authorization will be obtained prior to conducting Class III cultural resource inventories.   | August 2010   |
| Native American Consultation  | BLM  | Procedures to be followed by BLM in the course of its NEPA review process       | First Solar is coordinating with BLM to support BLM's consultation with Native American tribes for the purpose of identifying sacred sites and other places of traditional religious and cultural importance. Consultation with tribes has been initiated and will continue throughout the NEPA and Section 106 compliance processes. | August 2010   |
| CDCA Plan Amendment   | BLM  | Amendment to BLM's California Desert Conservation Area Plan                     | The Project will require a CDCA Plan Amendment. The Plan Amendment will be addressed as part of the FLPMA and NEPA processes as provided for in the BLM Planning Regulations (43 CFR Part 1600), and BLM Land Use Planning Handbook (H-1601-1).   | November 2010 |
| Department of Defense (DOD) Review                                    | DOD  | Procedures to be followed by BLM in the course of its NEPA review process       | First Solar will request a review of the project by DOD for its potential impact on military overflights and operations. This review will   | August 2010   |

| Permit  | Lead Agency  | Description  | Status  | Expected Date |
|---|--|--|---|---------------|
| Endangered/Threatened Species Take Authorization under CESA and Sections 2050 (general provision for endangered species) and 2080 (take of endangered species) of the California Fish and Game Code | CDFG   | Permit for impacting endangered or threatened species    | be done by the DOD R-2508 Complex Sustainability Office, Region IX.<br>CESA review and approval will be required for impacts to State-listed species. Focused biological surveys for sensitive species have been conducted with the Solar Farm Site (Appendix D). CDFG is expected to be a full participant in agency discussion between First Solar/BLM and the USFWS so that CDFG can complete a Consistency Determination with the project BO issued by the USFWS. Informal meetings, e-mail discussions, and phone calls are being undertaken to streamline this process by familiarizing CDFG with the project and eliciting agency concerns to be addressed throughout the process. | November 2010 |
| Section 1600-1602 Streambed Alteration Agreement process under the California Fish and Game Code  | CDFG   | Agreement to be reached between Desert Sunlight and CDFG | First Solar will work with the CDFG to prepare a notification under the Fish and Game Code Sections 1600-1602.  | August 2010   |
| Construction and Operations Phase Storm Water Permits under California Water Code/CWA   | California State Water Resources Control Board (SWRCB) | Construction and operation permits                       | First Solar will be required to prepare SWPPPs incorporating Best Management Practices for storm water management and control, and to file NOIs with the SWRCB to obtain coverage under the general construction and industrial storm water permits.  | November 2010 |
| Section 401 Certification under CWA   | Regional Water Quality                                 | Expect investigation will show no certification          | CWA Section 401 certification would only be   | N/A           |

| Permit                     | Lead Agency                             | Description   | Status  | Expected Date |
|----------------------------|---|---|---|---------------|
|                            | Control Board (RWQCB)                   | required  | required in the event that a USACE Section 404 permit is required, which is not expected based on First Solar's preliminary investigation and assessment of potential jurisdictional waters and wetlands under the CWA. To the extent certification is required, First Solar will apply to the RWQCB to obtain certification. |               |
| Interconnection Agreement  | CAISO                                   | Agreement between CAISO, SCE, and Desert Sunlight for interconnection and transmission services | See Section 4.1.5 for the status of the Interconnection Agreement.  | April 2010    |
| Permit to Construct (PTC)  | CPUC                                    | Land use permit for transmission facilities   | SCE will need to obtain a PTC for Red Bluff Substation. SCE is preparing the CPUC application. The Project NEPA document will provide environmental review coverage pursuant to CPUC's CEQA and Proponent's Environmental Assessment requirements, as described in the joint CPUC-BLM MOU for the CPUC application approval.  | November 2010 |
| Encroachment Permit        | California Department of Transportation | Permit to build electrical line across roadway easement   | An encroachment permit will be needed for the Preferred Transmission Corridor to cross the I-10 highway corridor in order to reach the Preferred SCE Red Bluff Substation Site located south of I-10.   | November 2010 |
| Fugitive Dust Control Plan | South Coast Air Quality                 | Plan required for construction permits  | A fugitive dust control plan will be developed in   | November 2010 |

| Permit  | Lead Agency                      | Description   | Status   | Expected Date |
|---|----------------------------------|---|--|---------------|
| Consultation on sacred areas to comply with State requirements. | Management District<br><br>NAHC  | Procedures to be followed by BLM in the course of its NEPA review process | accordance with South Coast Air Quality Management District requirements prior to construction<br><br>The NAHC has been contacted. Follow-up contacts with Native Americans will be made prior to beginning the NEPA analysis. | August 2010   |
| Public Use Permit   | Riverside County                 | Expect to receive concurrence that none will be required                  | First Solar is in discussions with Riverside County to determine applicability of a discretionary permit allowing a specific land use  | November 2010 |
| Construction Permits (e.g., Grading, Building, Electrical)      | Riverside County and/or BLM      | Construction permits  | If such permits are required, they will be secured before construction activities commence.  | November 2010 |
| Encroachment Permit   | Riverside County, MWD and/or BLM | Permit to build electrical line across roadway easement                   | Permit will be secured before construction activities commence as necessary for crossing Kaiser Road.  | November 2010 |

#### 4. Production Tax Credit / Investment Tax Credit

Desert Sunlight has informed PG&E it is eligible for the ITC. Please see Confidential Appendices A and C for more information on tax credits.

#### 5. Transmission

The Project will interconnect into the CAISO controlled grid on the SCE system. The point of interconnection will be the Pnode at the new Red Bluff substation. Additional transmission information is discussed in Confidential Appendix A under the section entitled "Transmission."

#### **D. Financing Plan**

Desert Sunlight's plans to obtain financial and any other capital resources are confidential and are described in Confidential Appendix A under the section entitled "Financing Plan."

#### **IV. CONTINGENCIES AND/OR MILESTONES**

The PPA includes certain performance criteria and milestones that PG&E includes in its form RPS PPA contract. These and other contingencies and milestones are addressed in Confidential Appendix D.

#### **V. REGULATORY PROCESS**

##### **A. Requested Effective Date**

PG&E requests that the Commission issue a resolution approving this advice filing on September 23, 2010. Justification for this date is provided in Confidential Appendix D.

##### **B. Earmarking**

PG&E reserves the right to earmark deliveries from this PPA.

##### **C. Request for Confidential Treatment**

In support of this Advice Letter, PG&E has provided the following confidential information, including the PPA and other information that more specifically describes the rights and obligations of the parties. This information is being submitted in the manner directed by D.08-04-023 and the August 22, 2006 Administrative Law Judge's Ruling Clarifying Interim Procedures for Complying with D.06-06-066 to demonstrate the confidentiality of the material and to invoke the protection of confidential utility information provided under either the terms of the IOU Matrix, Appendix 1 of D.06-06-066 and Appendix C of D.08-04-023, or General Order 66-C. A separate Declaration Seeking Confidential Treatment is being filed concurrently with this Advice Letter.

**Confidential Attachments:**

**Appendix A – Consistency with Commission Decisions and Rules and Project Development Status**

**Appendix B – 2009 Solicitation Overview**

**Appendix C – Independent Evaluator Report (Confidential)**

**Appendix D – Contract Terms and Conditions Explained**

**Appendix E – Comparison of Contract with Utility’s Pro Forma Power Purchase Agreement**

**Appendix F – Power Purchase Agreement**

**Appendix G – Project’s Contribution Toward RPS Goals**

**Public Attachments:**

**Appendix H – Independent Evaluator Report (Public)**

**VI. REQUEST FOR COMMISSION APPROVAL**

PG&E requests that the Commission issue a resolution not later than September 23, 2010 that:

1. Approves the PPA in its entirety, including payments to be made by PG&E pursuant to the PPA, subject to the Commission’s review of PG&E’s administration of the PPA.
2. Finds that any procurement pursuant to the PPA 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 PPA is consistent with PG&E's 2008 RPS procurement plan.
  - b. The terms of the PPA, 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 PPA:
  - a. The utility's costs under the PPA shall be recovered through PG&E's Energy Resource Recovery Account.
  - b. Any stranded costs that may arise from the PPA 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 PPA is not a covered procurement subject to the EPS because the generating facilities have a forecast capacity factor of less than 60 percent each and, therefore, are not baseload generation under paragraphs 1(a)(ii) and 3(2)(a) of the Adopted Interim EPS Rules.

**Protests:**

Anyone wishing to protest this filing may do so by sending a letter by **March 29, 2010**, which is **21** days from the date of this filing.<sup>9</sup> The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. Protests should be mailed to:

CPUC Energy Division  
Attention: Tariff Unit, 4<sup>th</sup> Floor  
505 Van Ness Avenue  
San Francisco, California 94102

Facsimile: (415) 703-2200  
E-mail: mas@cpuc.ca.gov and jnj@cpuc.ca.gov

Copies should also be mailed to the attention of the Director, Energy Division, Room 4005 and Honesto Gatchalian, Energy Division, at the address shown above.

The protest also should be sent via U.S. mail (and by facsimile and electronically, if possible) to PG&E at the address shown below on the same date it is mailed or delivered to the Commission.

Pacific Gas and Electric Company  
Attention: Jane Yura  
Vice President, Regulation and Rates  
77 Beale Street, Mail Code B10B  
P.O. Box 770000  
San Francisco, California 94177

Facsimile: (415) 973-7226  
E-Mail: PGETariffs@pge.com

---

<sup>9</sup> The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

**Effective Date:**

PG&E requests that the Commission issue a resolution approving this advice filing on **September 23, 2010**.

**Notice:**

In accordance with General Order 96-B, Section IV, a copy of this Advice Letter excluding the confidential appendices is being sent electronically and via U.S. mail to parties shown on the attached list and the service lists for R.08-08-009, R.06-02-012 and R.08-02-007. Non-market participants who are members of PG&E's Procurement Review Group and have signed appropriate Non-Disclosure Certificates will also receive the Advice Letter and accompanying confidential attachments by overnight mail. Address changes and electronic approvals should be directed to [PGETariffs@pge.com](mailto:PGETariffs@pge.com). Advice letter filings can also be accessed electronically at: <http://www.pge.com/tariffs>.

Handwritten signature of Jane Yura in cursive script.

Jane K. Yura  
Vice President – Regulation and Rates

cc: Service List for R.08-08-009  
Service List for R.06-02-012  
Service List for R.08-02-007  
Paul Douglas – Energy Division  
Sean Simon – Energy Division

Attachments

**Limited Access to Confidential Material:**

The portions of this Advice Letter marked Confidential Protected Material are submitted under the confidentiality protection of Section 583 and 454.5(g) of the Public Utilities Code and General Order 66-C. This material is protected from public disclosure because it consists of, among other items, the contract itself, price information, and analysis of the proposed RPS contract, which are protected pursuant to D.06-06-066 and D.08-04-023. A separate Declaration Seeking Confidential Treatment regarding the confidential information is filed concurrently herewith.

**Confidential Attachments:**

**Appendix A – Consistency with Commission Decisions and Rules and Project Development Status**

**Appendix B – 2009 Solicitation Overview**

**Appendix C – Independent Evaluator Report (Confidential)**

**Appendix D – Contract Terms and Conditions Explained**

**Appendix E – Comparison of Contract with Utility's Pro Forma Power Purchase Agreement**

**Appendix F – Power Purchase Agreement**

**Appendix G – Project's Contribution Toward RPS Goals**

**Public Attachments:**

**Appendix H – Independent Evaluator Report (Public)**

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## ADVICE LETTER FILING SUMMARY

### ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **Pacific Gas and Electric Company (ID U39 M)**

Utility type:

ELC       GAS  
 PLC       HEAT       WATER

Contact Person: David Poster and Linda Tom-Martinez

Phone #: (415) 973-1082 and (415) 973-4612

E-mail: dxpu@pge.com and lmt1@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric      GAS = Gas  
 PLC = Pipeline      HEAT = Heat      WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: **3629-E**

Tier: **3**

Subject of AL: **Contract Between PG&E and Desert Sunlight Holdings, LLC, for Procurement of Renewable Energy Resources Resulting From PG&E's 2008 Renewables Portfolio Solicitation**

Keywords (choose from CPUC listing): Contracts, Portfolios

AL filing type:  Monthly  Quarterly  Annual  One-Time  Other \_\_\_\_\_

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL: \_\_\_\_\_

Is AL requesting confidential treatment? If so, what information is the utility seeking confidential treatment for: Yes. See the attached matrix that identifies all of the confidential information.

Confidential information will be made available to those who have executed a nondisclosure agreement:  Yes  No All members of PG&E's Procurement Review Group who have signed nondisclosure agreements will receive the confidential information.

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: Neha Patel (415) 973-6095

Resolution Required?  Yes  No

Requested effective date: **September 23, 2010**

No. of tariff sheets: N/A

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed<sup>1</sup>: N/A

Pending advice letters that revise the same tariff sheets: N/A

Protests, dispositions, and all other correspondence regarding this AL are due no later than 20 days after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:

**CPUC, Energy Division**  
**Tariff Files, Room 4005**  
**DMS Branch**  
**505 Van Ness Ave.,**  
**San Francisco, CA 94102**  
**jnj@cpuc.ca.gov and mas@cpuc.ca.gov**

**Pacific Gas and Electric Company**  
**Attn: Jane Yura**  
**Vice President, Regulation and Rates**  
**77 Beale Street, Mail Code B10B**  
**P.O. Box 770000**  
**San Francisco, CA 94177**  
**E-mail: PGETariffs@pge.com**

**DECLARATION OF NEHA R. PATEL  
SEEKING CONFIDENTIAL TREATMENT  
FOR CERTAIN DATA AND INFORMATION  
CONTAINED IN ADVICE LETTER 3629-E  
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)**

I, Neha R. Patel, declare:

1. I am presently employed by Pacific Gas and Electric Company (“PG&E”), and have been an employee at PG&E since 2008. My current title is Principal within PG&E’s Energy Procurement organization. In this position, my responsibilities include negotiating PG&E’s Renewables Portfolio Standard Program (“RPS”) power purchase agreements with counterparties in the business of producing electric energy. In carrying out these responsibilities, I have acquired knowledge of such sellers in general and, based on my experience in dealing with facility owners and operators, I am familiar with the types of data and information about their operations that such owners and operators consider confidential and proprietary.

2. Based on my knowledge and experience, and in accordance with Decision (“D.”) 08-04-023 and the August 22, 2006 “Administrative Law Judge’s Ruling Clarifying Interim Procedures for Complying with Decision 06-06-066,” I make this declaration seeking confidential treatment of Appendices A, B, C, D, E, F and G to Advice Letter 3629-E, submitted on March 8, 2010. By this Advice Letter, PG&E is seeking this Commission’s approval of a power purchase agreement that PG&E has executed with Desert Sunlight Holdings LLC.

3. Attached to this declaration is a matrix identifying the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is seeking to protect constitutes the particular type of data and information listed in Appendix 1 of D.06-06-066 and Appendix C of D.08-04-023 (the “IOU Matrix”), or constitutes information that should be protected under General Order 66-C. The matrix also specifies the category or

categories in the IOU Matrix to which the data and information corresponds (where applicable), and why confidential protection is justified. Finally, the matrix specifies that: (1) PG&E is complying with the limitations specified in the IOU Matrix for that type of data or information (where applicable); (2) the information is not already public; and (3) the data cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. By this reference, I am incorporating into this declaration all of the explanatory text in the attached matrix that is pertinent to this filing.

I declare under penalty of perjury, under the laws of the State of California, that to the best of my knowledge the foregoing is true and correct. Executed on March 8, 2009 at San Francisco, California.



---

Neha R. Patel

|                                  |   | PACIFIC GAS AND ELECTRIC COMPANY<br>Advice Letter 3629-E<br>March 9, 2010   |   | IDENTIFICATION OF CONFIDENTIAL INFORMATION PER DECISION 06-06-066 AND DECISION 08-04-023 |   | PG&E's Justification for Confidential Treatment  |  | Length of Time  |  |
|----------------------------------|---|---|---|--|---|--|--|---|--|
| Redaction Reference              | 1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 and Appendix C to D.08-04-023 (Y/N) | 2) Which category or categories in the Matrix the data correspond to:   | 3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data (Y/N) | 4) That the information is not already public (Y/N)                                      | 5) The data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure (Y/N) | PG&E's Justification for Confidential Treatment  |  | Length of Time  |  |
| 1 Document: Advice Letter 3629-E | Y   | Item VII F) Renewable Resource Contracts under RPS program - Contracts with SEPs.<br>Item VII (un-numbered category following VII G) Score sheets, analyses, evaluations of proposed RPS projects.<br>Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.<br>General Order 66-C. | Y   | Y  | Y   | This Appendix contains bid information and evaluation from the 2009 Solicitation; discusses, analyzes and evaluates the Project and the terms of the PPA; contains information concerning and evaluations of project viability; and contains confidential information of the counterparties. Disclosure of this information would provide valuable market sensitive information to competitors. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential. Release of this information would be damaging to negotiations. In addition, if information about and evaluations of project viability is made public, it could harm the counterparties and adversely affect project viability.<br>Finally, this information has been obtained in confidence from the counterparties under an expectation of confidentiality. It is in the public interest to treat such information as confidential because if such information were made public, it would put the counterparties at a business disadvantage, could create a disincentive to do business with PG&E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparties. |  | For information covered under Item VII F) and Item VII, remain confidential for three years<br>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.<br>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.<br>For information covered under General Order 66-C, remain confidential. |  |
| 3 Appendix B                     | Y   | Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.  | Y   | Y  | Y   | This Appendix contains bid information and bid evaluations from the 2009 Solicitation. This information would provide market sensitive information to competitors and is therefore considered confidential. Furthermore, offers from the 2005, 2006, 2007, 2008, and 2009 solicitations and offers received outside of those solicitations are still under negotiation, further substantiating why releasing this information would be damaging to the negotiation process.  |  | For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval<br>For information covered under Item VIII B), remain confidential for three years after winning bidders selected  |  |

| Redaction Reference | 1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 and Appendix C to D.06-04-023 (Y/N) | 2) Which category or categories in the Matrix the data correspond to:   | 3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data (Y/N) | 4) That the information is not already public (Y/N) | 5) The data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure (Y/N) | PG&E's Justification for Confidential Treatment  | Length of Time  |
|---------------------|---|---|---|---|---|--|---|
| 4 Appendix C        | Y   | Item VII F) Renewable Resource Contracts under RPS program - Contracts with SEPs.<br>Item VII (un-numbered category following VII G) Score sheets, analyses, evaluations of proposed RPS projects.<br>Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.<br>General Order 66-C. | Y   | Y   | Y   | This Appendix contains bid information and evaluation from the 2009 Solicitation; discusses, analyzes and evaluates the Project and the terms of the PPA; contains confidential information of the project viability, and contains confidential information of the counterparties. Disclosure of this information would provide valuable market sensitive information to competitors. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential. Release of this information would be damaging to negotiations. In addition, if information about and evaluations of project viability is made public, it could harm the counterparties and adversely affect project viability.<br>Finally, this information has been obtained in confidence from the counterparties under an expectation of confidentiality. It is in the public interest to treat such information as confidential because if such information were made public, it would put the counterparties at a business disadvantage, could create a disincentive to do business with PG&E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparties. | For information covered under Item VII F) and Item VII, remain confidential for three years<br>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.<br>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.<br>For information covered under General Order 66-C, remain confidential. |
| 5 Appendix D        | Y   | Item VII F) Renewable Resource Contracts under RPS program - Contracts with SEPs.<br>Item VII (un-numbered category following VII G) Score sheets, analyses, evaluations of proposed RPS projects.<br>Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.<br>General Order 66-C. | Y   | Y   | Y   | This Appendix contains bid information and evaluation from the 2009 Solicitation; discusses, analyzes and evaluates the Project and the terms of the PPA; and contains confidential information of the counterparties. Disclosure of this information would provide valuable market sensitive information to competitors. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential. Release of this information would be damaging to negotiations. Furthermore, the counterparties to the PPA have an expectation that the terms of the PPA will remain confidential pursuant to confidentiality provisions in the PPA.  | For information covered under Item VII F) and Item VII, remain confidential for three years<br>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.<br>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.<br>For information covered under General Order 66-C, remain confidential. |
| 6 Appendix E        | Y   | Item VII F) Renewable Resource Contracts under RPS program - Contracts with SEPs.   | Y   | Y   | Y   | This Appendix contains the terms of the PPA. Disclosure of certain terms of the PPA would provide valuable market sensitive information to competitors. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential. Release of this information would be damaging to negotiations. Furthermore, the counterparties to the PPA have an expectation that the terms of the PPA will remain confidential pursuant to confidentiality provisions in the PPA.  | Remain confidential for three years   |

|              | 1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 and Appendix C to D.08-04-023 (Y/N) | 2) Which category or categories in the Matrix the data correspond to:   | 3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data (Y/N) | 4) That the information is not already public (Y/N) | 5) The data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure (Y/N) | PG&E's Justification for Confidential Treatment   | Length of Time                      |
|--------------|---|---|---|---|---|---|-------------------------------------|
| 7 Appendix F | Y   | Item VII F) Renewable Resource Contracts under RPS program - Contracts with SEPs.   | Y   | Y   | Y   | This Appendix contains the PPA. Disclosure of the PPA would provide valuable market sensitive information to competitors. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential. Release of this information would be damaging to negotiations. Furthermore, the counterparties to the PPA have an expectation that the terms of the PPA will remain confidential pursuant to confidentiality provisions in the PPA. | Remain confidential for three years |
| 8 Appendix G | Y   | Item VII (un-numbered category following VII G) Score sheets, analyses, evaluations of proposed RPS projects.<br>Item VI B) Utility Bundled Net Open Position for Energy (MWh). | Y   | Y   | Y   | This Appendix contains information that, if disclosed, would provide valuable market sensitive information to competitors and allow them to see PG&E's remaining RPS net open energy position. Since negotiations are still in progress with bidders from the 2005, 2006, 2007, 2008, and 2009 solicitations and with other counterparties, this information should remain confidential for three years.  | Remain confidential for three years |

## **Appendix H**

### **Independent Evaluator Report (Public)**

PACIFIC GAS AND  
ELECTRIC COMPANY  
2008 RENEWABLE  
POWER SOLICITATION

---

SIXTH ADVICE LETTER REPORT OF THE  
INDEPENDENT EVALUATOR ON THE BID  
EVALUATION AND SELECTION PROCESS

MARCH 8, 2010

# TABLE OF CONTENTS

|  |    |
|--|----|
| EXECUTIVE SUMMARY .....  | 3  |
| 1. ROLE OF THE INDEPENDENT EVALUATOR.....  | 5  |
| 2. FAIRNESS OF OFFER EVALUATION AND SELECTION METHODOLOGY.....                           | 10 |
| 3. FAIRNESS OF HOW PG&E ADMINISTERED THE OFFER EVALUATION<br>AND SELECTION PROCESS ..... | 29 |
| 4. ADEQUACY OF OUTREACH TO PARTICIPANTS AND ROBUSTNESS OF<br>SOLICITATION .....          | 41 |
| 5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS.....  | 47 |
| 6. MERIT FOR CPUC APPROVAL .....   | 49 |
| 7. CONCLUSIONS.....  | 52 |

# EXECUTIVE SUMMARY

This report provides an evaluation of the process by which the Pacific Gas and Electric Company (PG&E) undertook a competitive solicitation to procure eligible renewable resources in 2008. An independent evaluator, Arroyo Seco Consulting (Arroyo), conducted a broad range of oversight activities to review, test, and check PG&E's processes as the utility conducted outreach to renewable electricity developers, solicited Offers, evaluated Offers, selected a short list of Offers with which to enter negotiations, and negotiated contracts.

Following the evaluation of Offers and selection of a short list by PG&E, Arroyo submitted its Report of the Independent Evaluator (IE) on the Bid Evaluation and Selection Process, on July 29, 2008. The high-level finding of that Short List Report was that PG&E conducted a fair evaluation of Offers received in its 2008 competitive solicitation for renewable resources, and used a fair process to select a short list. To the extent issues arose during the evaluation and selection process to achieve a short list in July, they were resolved without preferential treatment to one Participant at the expense of others. Some specific recommendations for improvement in future renewable solicitations were identified.

Subsequent to the selection of a short list, PG&E negotiated with the selected Participants to seek agreement on the terms of Power Purchase Agreements (PPAs) for renewable power. On February 24, 2010, PG&E executed a PPA from the 2008 renewable power solicitation, an agreement for the purchase of 300 MW from Desert Sunlight Holdings, LLC (or "Desert Sunlight"), currently a wholly-owned subsidiary of First Solar, Inc., or "First Solar", of Tempe, Arizona) from its proposed solar photovoltaic project in Riverside County north of the unincorporated town of Desert Center. The original offer to PG&E for the Desert Sunlight project had been proposed by OptiSolar, Inc. of Hayward, California; subsequently First Solar acquired the projects under development of OptiSolar.

The purpose of this report is to provide an independent review of the extent to which the project-specific negotiations regarding Desert Sunlight were fair, and an opinion about whether the contract for the output of the Desert Sunlight project merits approval by the California Public Utilities Commission (CPUC).

The text of this report details what criteria were applied to evaluate the fairness of the negotiations regarding Desert Sunlight, and how that process met or failed to meet rigorous standards for fairness. Arroyo concurs with PG&E management that, based on information currently available about the Desert Sunlight project, the PPA merits approval by the CPUC.

# 1. ROLE OF THE INDEPENDENT EVALUATOR

Pacific Gas and Electric Company issued a Request for Offer (RFO) on March 7, 2008, a solicitation for power generation that qualifies as eligible renewable energy resources (ERRs) under the California Renewables Portfolio Standard (RPS) Program. The RPS Program was established by state law to ensure that retail sellers of electricity meet targets for procurement of ERRs as a percentage of annual retail sales. In its Solicitation Protocol for its 2008 RPS RFO, PG&E announced its intent to procure approximately 1 to 2% of its retail sales volume through the 2008 process, or about 800 to 1,600 GWh annually.

The California Public Utilities Commission had conditionally approved PG&E's RPS procurement plan in its Decision 08-02-008 issued on February 14, 2008. PG&E issued its amended 2008 Renewable Energy Procurement Plan, including the 2008 Solicitation Protocol for the RPS RFO, on February 29, 2008, in compliance with that CPUC Decision.

This chapter elaborates on the basis for an Independent Evaluator's participation in the 2008 RPS RFO, describes the role of the IE, details oversight activities performed by the IE in this solicitation, and identifies the treatment of confidential information.

---

## A. CPUC DECISIONS REQUIRING INDEPENDENT EVALUATOR PARTICIPATION

---

The CPUC first mandated a requirement for an independent, third-party evaluator to participate in competitive solicitations for utility power procurement in its Decision 04-12-048 on December 16, 2004 (Findings of Fact 94-95, Ordering Paragraph 28). In that Decision, which addressed the approval of three utilities' long-term procurement plans, the CPUC required the use of an IE when Participants in a competitive procurement solicitation include affiliates of investor-owned utilities (IOUs), IOU-built projects, or IOU-turnkey projects. The Decision envisaged that establishing a role for an IE would serve as a safeguard in the process of evaluating IOU-built or IOU-affiliated projects competing against Power Purchase Agreements (PPAs) with third parties, a safeguard to protect consumers from any anti-competitive conduct between utilities and their corporate affiliates or from anti-competitive conduct by utilities developing their own generation.

Later, in approving the IOUs' 2006 RPS procurement plans and solicitation protocols, the CPUC issued Decision 06-05-039 on May 25, 2006. In that Decision, the CPUC expanded its requirement, ordering that each IOU use an IE to evaluate and report on the entire solicitation, evaluation, and selection process, for the 2006 RPS RFO and all future competitive solicitations. This requirement to employ an IE now applies whether or not IOU-owned or IOU-affiliate generation participates in the solicitation (Finding of Fact 20, Conclusion of Law 3, and Ordering Paragraph 8). This requirement, among others, was

intended by the CPUC to increase the fairness, equity, and transparency of the Offer selection process.

Decision 06-05-039 required the IOU's IE to report separately from the utility on the bid, solicitation, evaluation, and selection process. Based on the Decision, the IE should provide a preliminary report along with the IOU submitting its short list. This document represents that preliminary report for the 2008 renewable solicitation.

---

## **B. KEY INDEPENDENT EVALUATOR ROLES**

---

To comply with the requirements ordered by the CPUC in these Decisions, PG&E retained Arroyo Seco Consulting to serve as IE in the 2008 competitive solicitation for renewable resources. Arroyo was selected in late March 2008 shortly after the RFO was issued and after the pre-bid conference for potential participants had taken place.

The CPUC stated its intent for participation of an IE in competitive procurement solicitations to "separately evaluate and report on the IOU's entire solicitation, evaluation and selection process", in order to "serve as an independent check on the process and final selections."<sup>1</sup> More specifically, the Energy Division (ED) of the CPUC has provided a template to guide how IEs should report on the 2008 RPS competitive procurement process, outlining five specific issues that should be addressed:

- Did the IOU do adequate outreach to potential bidders, and did its outreach activities result in an adequately robust solicitation to promote competition?
- Was the IOU's methodology for RPS bid evaluation and selection designed fairly?
- Was the IOU's RPS bid evaluation and selection process fairly administered?
- Were project-specific negotiations fair?
- Does the proposed contract merit CPUC approval?

The structure of this report, setting out detailed findings for each of these key questions, is organized around the template provided by the ED.

---

## **C. IE OVERSIGHT ACTIVITIES**

---

To fulfill the role of evaluating and providing oversight to PG&E's 2008 RPS RFO procurement process, several tasks were undertaken, both prior to Offer Opening and subsequently.

Prior to Offer Opening, the IE performed several tasks to assess PG&E's methodology for evaluating Offers:

---

<sup>1</sup> CPUC Decision 06-05-039, May 25, 2006, "Opinion Conditionally Approving Procurement Plans for 2006 RPS Solicitations, Addressing TOD Benchmarking Methodology", page 46

- Reviewed the 2008 RPS RFO Solicitation Protocol and its various attachments including the Forms of Power Purchase Agreement and Power Purchase and Sale Agreement (PSA) and the detailed LCBF evaluation criteria
- Examined the confidential protocols detailing how PG&E proposed to evaluate Offers against various criteria, including market valuation, portfolio fit, transmission adders, credit, project viability, and RPS goals. These nonpublic internal protocols were evaluated to test whether they were consistent with the approved public Solicitation Protocol and whether the procedures, inputs, parameters, and standards were fair and reasonable.
- Read the RPS Bidders' Conference presentation materials from March 17, 2008, its list of attendees, and the question and answer transcript from that conference<sup>2</sup>
- Attended the RFO Bidders' Workshop on April 11, 2008, via webinar, and reviewed the website-posted question and answer transcript from that workshop
- Examined PG&E's RFO master contact list; performed a detailed analysis of contacts added in 2008 with respect to industry and technology representation
- Interviewed members of PG&E's evaluation committee and evaluation sub-committees regarding the process, data inputs and parameters, background industry and utility information, quantitative models, and other considerations taken into account in evaluating Offers against non-quantitative criteria and in performing market valuation of Offers
- Interviewed PG&E middle-office staff regarding the internal review process that serves as a check on market valuation modeling and its inputs
- Reviewed in detail various data inputs and parameters used in PG&E's market valuation methodology

During the period between Offer Opening and PG&E's development of a final short list, Arroyo's activities included:

- Participating in opening the Offers. The IE was present during the opening of each Offer, and observed the PG&E team's initial review and process of recording and documenting basic information from each Offer. The IE took an electronic copy (where present) from each Offer package, and independently built a database for tracking the Offers.

---

<sup>2</sup> The RPS Bidders' Conference was held before PG&E selected an IE; consequently Arroyo Seco Consulting did not attend that conference. A recommendation for PG&E for future solicitations is to select the IE prior to the Bidders' Conference to ensure that the IE can observe the release of RFO information to Participants in that setting

- Taking part in discussions of the PG&E evaluation committee regarding what additional information should be requested immediately from individual Participants (e.g. amount of Delivery Term Security, detailed site information where this information was missing) in an effort to ensure that each Offer included sufficient information to complete an evaluation and to minimize the number of Offers disqualified as non-conforming.
- Reviewing the outbound correspondence (“deficiency letters”) from PG&E to Participants identifying issues with the completeness of the Offers and requesting clarification or additional information. Arroyo reviewed the detailed responses of Participants as they complied with these requests (or not). Arroyo monitored other communications between PG&E and Participants to check for fairness in the release of information.
- Reading the Offers in detail. Arroyo particularly scrutinized Offers for utility purchase and those which provided options for utility buyout.
- Participating in PG&E evaluation committee discussions about which Offers to disqualify for non-conformity with the requirements of the Solicitation Protocol.
- Spot-checking offer-specific data inputs to PG&E’s valuation model.
- Building an independent valuation model and using it to value the Offers. This served as a cross-check against PG&E’s market valuation model. The IE model used independent inputs and a different methodology than PG&E’s model. It was simpler and lacked the granularity used in aspects of the PG&E model such as hourly detail for market price as opposed to block prices. Its main value was to provide an independent check on the ranking of Offers provided by PG&E’s valuation model and to scan for data input errors. Where variances in the ranking of Offers between the two models were large (and there were very few such situations) the cross-comparison was helpful in identifying such errors such as incorrect assignments of TOD factors to energy pricing or inclusion of RA value where the Participant had chosen to withhold RA benefit from the Offer.
- Preparing test cases for the PG&E team to run through its valuation model, and reviewing the results to check the performance of the PG&E model.
- Attending and participating in team discussions of PG&E’s evaluation committee for the 2008 RPS RFO. This included discussing what scores were assigned to each Offer for the various non-valuation criteria, and why. Participation provided an opportunity to test the objectivity, fairness, and reasonableness of how PG&E assessed Offers on these criteria. It also provided insight into how, specifically, the evaluation criteria were considered as the team selected and refined its draft short list, in order to judge the fairness of these decisions. Examples include decisions to exclude specific Offers from the short list based on low scores for project viability, and the decision whether to consider a utility ownership Offer for a project as opposed to its PPA Offer.

- Reviewing PG&E’s scoring of each Offer for the criteria other than market valuation, testing for consistency and fairness in the treatment of projects. This included scrutiny of the scoring of those Offers and on those criteria that PG&E’s team used as the basis for rejection of Offers from the short list, or for the inclusion of Offers into the short list despite lower market valuation.
- Investigating in detail the second ranking of Offers incorporating transmission cost adders. PG&E’s Solicitation Protocol takes into account proxies for transmission network upgrade costs (both those in PG&E’s service territory and elsewhere) that may be required to incorporate increments of renewable generation likely to incur congestion. The protocol also provides for PG&E to consider “alternative commercial arrangements”, such as remarketing power, executing swaps, or buying non-firm transmission, to avoid transmission network upgrade costs. The data inputs for this analysis are complex and the analysis itself is time-consuming, but the second iteration of valuation that includes these adders has a significant impact on the value ranking of Offers.
- Attending and participating in discussions of PG&E’s steering committee for the 2008 RPS RFO.
- Attending meetings of PG&E’s Procurement Review Group (PRG), including presenting a preliminary IE update reporting on the robustness of outreach and of the solicitation, the fairness of the evaluation methodology and its inputs, and the fairness and reasonableness of decisions made in drafting the short list. Members of the PRG raised issues regarding the fairness of the analytic treatment of specific Offers which required follow-up and clarification by the PG&E team. Arroyo reviewed specific data affecting that issue.
- Providing PG&E’s evaluation committee and steering committee commentary based on independent opinion and judgment regarding the fairness and reasonableness of proposed short list drafts. Provided feedback on specific Offers and independent opinions about attributes such as participant experience and technology viability.

Following PG&E’s completion of a short list in July, 2008, Arroyo’s activities focused on the project-specific negotiations that ensued:

- Sitting in, telephonically, on several negotiation sessions between PG&E transactors and Participants;
- Reviewing documents central to the negotiations, including draft term sheets, draft PPAs, issue lists, and correspondence, with an eye towards whether individual participants were being unfairly advantaged with information or contractual provisions not offered to others;
- Participating in routinely scheduled discussions with PG&E transactors about the status of negotiations, contract issues that had arisen, and PG&E’s proposed approach;

- Participating in PG&E's RPS RFO steering committee meetings to raise concerns or to provide independent input about proposed actions, as necessary;
- Participating in PRG meetings regarding updates on 2008 RPS RFO negotiations; and
- Providing independent counsel and suggestions to the PG&E team as needed, such as input on contract size issues and possible inclusion of non-shortlisted parties.

---

**D. TREATMENT OF CONFIDENTIAL INFORMATION**

---

The CPUC's Decision 06-06-066, issued on June 29, 2006, detailed specific guidelines for the treatment of information as confidential vs. non-confidential in the context of IOU electricity procurement and related activities, including competitive solicitations or RFOs. For example, the Decision provides for confidential treatment of "Score sheets, analyses, evaluations of proposed RPS projects",<sup>3</sup> as opposed to public treatment (after submittal of final contracts for CPUC approval) of the total number of projects and megawatts bid by resource type.

---

<sup>3</sup>"Interim Opinion Implementing Senate Bill No. 1488, Relating to Confidentiality of Electric Procurement Data Submitted to the Commission", June 29, 2006, Appendix 1, page 17

## 2. FAIRNESS OF OFFER EVALUATION AND SELECTION METHODOLOGY

The key finding of this chapter is that, based on IE oversight activities and findings, PG&E's evaluation and selection methodology for identifying a short list for the 2008 RPS RFO was designed fairly.

The following discussion identifies principles for evaluating the methodology, describes the methodology, evaluates the strengths and weaknesses of the chosen methodology, and identifies some specific issues with the methodology and its inputs that Arroyo recommends be addressed in future solicitations.

---

### A. PRINCIPLES FOR EVALUATING THE METHODOLOGY

---

The Energy Division of the CPUC has usefully provided a set of principles for evaluating the process used by IOUs for selecting Offers in competitive solicitations, within the template intended for use by IEs in reporting. This list was previously developed by Jonathan Jacobs of PA Consulting, serving as IE for San Diego Gas & Electric Company (SDG&E).

Mr. Jacobs' principles include:

- The procurement target should be large enough to ensure that the utility has a reasonable chance of meeting its 20% RPS target (taking into account potential contract failures).
- The IOU evaluation should only be based on those criteria requested in the response form. There should be no consideration of any information that might indicate whether the bidder is an affiliate.
- The methodology should identify how quantitative measures will be considered and be consistent with an overall metric.
- There should be no differences in the evaluation method for different technologies that cannot be explained in a technology-neutral manner.
- The methodology does not have to be the one that the IE would independently have selected but it needs to be 'reasonable'.

Some additional considerations appear relevant to the specific situation PG&E finds itself in during the 2008 RPS RFO. In this year's solicitation PG&E streamlined its evaluation process by dropping its prior approach of "partial ordering." Instead, the team

ranks Offers by market value, after which, using “the information and scores from the other evaluation criteria, PG&E will then apply judgment and PRG feedback to decide which Offers to include or not include on the shortlist.”<sup>4</sup> The application of judgment in bringing the non-valuation criteria to bear on decision-making, rather than a rigorously mathematical, quantitative means of doing so, implies an opportunity to test the fairness and consistency of the method using additional principles:

- The methodology should identify how non-valuation qualitative measures will be considered; non-valuation criteria used in selecting Offers should be clear to Participants.
- The logic of using non-valuation criteria to reject high-value Offers and select low-value Offers should be applied consistently and without bias.
- The valuation methodology should be reasonably consistent with industry practices.

---

#### **B. PG&E’S LEAST-COST BEST-FIT METHODOLOGY**

---

The California state legislation that mandated the RPS program required that the procurement process use criteria for the selection of least-cost and best-fit (LCBF) renewable resources; in its Decisions D.03-06-071 and D.04-07-029 the CPUC laid out detailed guidelines for the IOUs to select LCBF renewable resources. PG&E adopted Offer selection and evaluation processes and criteria for its 2008 RPS RFO. These are summarized in Section XI of PG&E’s 2008 Solicitation Protocol for its renewable solicitation, and detailed in Attachment K to that Solicitation Protocol.

Additionally, PG&E developed confidential documents for internal use that detail the protocols for each individual criterion used in the evaluation process. The criteria described by the Solicitation Protocol and its Attachment K include:

- Market valuation
- Portfolio fit
- Credit (including provision of collateral requirements)
- Project viability (including its constituent elements: project status, technology viability, and participant experience)
- RPS goals
- Transmission cost adders

---

<sup>4</sup> “2008 Renewable Energy Procurement Plan and Draft Solicitation Protocol of Pacific Gas and Electric Company”, August 1, 2007, CPUC Rulemaking 06-05-027, page 2

This section summarizes PG&E's methodology briefly and at a high level; readers are referred to the Solicitation Protocol and its Attachment K for a fuller treatment of the detailed methodology.

## MARKET VALUATION

PG&E measures market value as benefits minus costs. Benefits include energy value and capacity value (resource adequacy value); ancillary services value is assumed zero. Costs are PG&E's payments to the Participant, appropriately adjusted by Time-of-Delivery (TOD) factors as specified in the Solicitation Protocol. The TOD factors serve as a multiplier to the contract price per megawatt-hours (MWh) based on the time of day and season of the delivery, and are intended to reflect the relative value of the energy and capacity delivered in those time periods. Also, costs are adjusted to reflect transmission adders. The costs of integrating an intermittent resource into the electric system, such as load-following and regulation, are assumed zero. Both benefits and costs are discounted from the entire contract period to 2009 dollars per MWh in the methodology.

For as-available energy delivery, which was the category specified by most of the Offers received in the 2008 RPS RFO, PG&E measures energy value by projecting a forward energy curve (in hourly granularity) out to the time horizon of the contract period, and multiplying projected hourly energy price by the projected hourly generation specified by the Offer's generation profile. For peaking or baseload Offers, the energy quantity is based on the performance requirements of the Offer.

For dispatchable Offers, the protocol specifies use of a real-option pricing model to measure energy benefit; however, there were no conforming Offers in the 2008 solicitation that were dispatchable. Similarly, the protocol specifies use of a real-option pricing model to value the utility buyout option attached to Offers that provide for a PPA plus such an option. Very few Participants in the 2008 RPS RFO process offered projects with utility buyout options.

PG&E projects capacity value as a nominal dollar per kilowatt-year estimate. For as-available products, capacity quantity is calculated based on the annual average of the generation profile for the noon to 6 p.m. period; this calculation was adopted by the CPUC in Decision D.05-10-042 as the peak period for the purpose of measuring qualifying RA capacity from wind and solar resources.<sup>5</sup> For baseload and dispatchable resources, the capacity quantity is determined by the performance requirements of the Offer. Capacity benefit is calculated as the product of capacity value and quantity, and discounted to 2009 nominal dollars.

## PORTFOLIO FIT

PG&E employs a scoring system to assess the portfolio fit of an Offer into its overall set of energy resources and obligations. The team assesses one score for the firmness of

---

<sup>5</sup> CPUC Decision D.05-10-042, "Opinion on Resource Adequacy Requirements", October 27, 2005, page 101

delivery of the offered resource and another score for the time of delivery of the resource (relative to PG&E's portfolio needs). The overall score for portfolio fit is the average of the two.

### CREDIT

PG&E assesses the degree to which a Participant making an Offer proposes to meet the requirements for providing collateral to meet the Participant's obligations. The requirements for collateral, described in detail in Section VII of the Solicitation Protocol, include posting Project Development Security after a PPA or PSA is executed and before Commercial Operation Date of the project, and posting Delivery Term Security following the commencement of commercial operation.

### PROJECT VIABILITY

PG&E employs a scoring system to assess the viability of each proposed project. The project viability score is an average of two separate evaluation scores, one for project status and the other for technology viability and participant experience.

The project status score is developed through an assessment of several attributes of the project provided in the detailed Offer, including

- The extent to which the Participant has obtained site control and easements needed to develop the project at the proposed location,
- The degree to which the project has been advanced through the various environmental applications and permits, and the extent to which the project may have a deleterious environmental impact on protected or endangered species, cultural resources, or communities of socioeconomic concern,
- Progress made towards feasibility studies, detailed design, contracting for engineering, procurement, and construction,
- Progress made to acquire major components of equipment (e.g. wind turbines, photovoltaic arrays), and
- Progress made towards obtaining a grid connection, including application for an interconnection queue and the status of a system impact study and/or feasibility study.

The PG&E team evaluates the degree to which the proposed technology is in the research stage vs. having been demonstrated in pilot scale or in early stages of commercialization, vs. an established technology in wide commercial application. It evaluates the extent to which a Participant can demonstrate experience developing, constructing, and operating projects which employed the specific technology of its proposed Offer, or no experience in that technology but general experience with other renewable technologies, or is unable to demonstrate experience developing power projects at all.

## RPS GOALS

PG&E assesses the degree to which the Offer is consistent with and will contribute to the state of California's goals for the RPS Program, and the degree to which the Offer will contribute to PG&E's goals for supplier diversity. The CPUC has articulated specific attributes of renewable generation projects which can be considered in utility procurement evaluations, such as benefits to low-income or minority communities, environmental stewardship, and resource diversity, that do not clearly fall within the other evaluation criteria. Similarly, the CPUC has issued a Water Action Plan, and to the extent a renewable energy project makes use of water on site, its proposed use of water is evaluated for consistency or inconsistency with the CPUC's recommended water conservation practices.

The Governor of California issued Executive Order S-06-06 that, among other things, established a goal that the state will meet 20% of its renewable energy needs with electricity generated from biomass. PG&E assesses the extent to which an Offer supports that goal.

PG&E has objectives for supplier diversity, and evaluates whether the Participant is, or will make a good faith effort to subcontract with, Women-, Minority-, and Disabled Veteran-owned Business Enterprises.

## TRANSMISSION COST ADDERS

The cost of transmission to move power from a project offered in the solicitation to PG&E retail customers is considered twice in the process of market valuation. In the first ranking of Offers by market value, projects whose delivery points are outside the control area of the California Independent System Operator (or "CAISO") (such as projects interconnecting to other utilities' grids in the Pacific Northwest or the desert Southwest, or those within California that interconnect to the grids of utilities that are not CAISO members) are loaded with a proxy estimate of the wheeling cost to transmit power from the delivery point to the border of the CAISO.

In the second step, the methodology takes into account the possible need to upgrade the transmission network in order to accommodate the increment of new renewable generation in locations (clusters) that may require significant capital outlay, either by PG&E or by other IOUs. Each California IOU publishes a Transmission Ranking Cost Report (TRCR) which identifies clusters that would require network upgrades to accommodate some level of new generation, and estimates a proxy for the cost of upgrades and the amount of new generation that would trigger the need for upgrades.

The Solicitation Protocol and its Attachment K lay out the somewhat complex analysis required to allocate network upgrade costs to individual Offers. This includes the use of a model to calculate the present value of the impact of the network upgrade capital cost on revenue requirement, estimating in 2009 dollars per MWh the impact on customers of the upgrade.

The Solicitation Protocol states that PG&E will consider "alternative commercial arrangements" as well as network upgrade costs from the TRCRs. Such arrangements could include the possibility of remarketing power, swapping the power with other utilities, or

purchasing transmission rights as means to integrate the added renewable power into the system. The methodology calls for PG&E to use the lesser of the TRCR-based network upgrade cost proxy and the alternative commercial arrangement cost estimate to adjust the Offer valuation for the cost of potential network upgrades.

### SELECTION OF A SHORT LIST

Having performed the two-step ranking of Offers by market valuation, including the impact of transmission adders, and having scored the Offers against the non-valuation criteria, based on the protocol PG&E decides which Offers to include on the short list.

As described in PG&E's procurement plan, the 2008 RPS RFO methodology differs from prior years. The valuation-ranked list of Offers is the starting point for making a short list, as opposed to the use in prior years of a partial ordering analysis that incorporated the scoring for non-valuation criteria in an objective way to classify Offers. In other words, the process of selecting the short list with the current methodology makes greater use of subjective judgment to consider the import of non-valuation criteria, as opposed to relying on an objective analysis or on a quantitative weighting formula.

In the 2008 RPS solicitation, the procurement plan calls for PG&E to apply "judgment and PRG feedback", using "the information and scores from the other evaluation criteria"<sup>6</sup> to decide which Offers to include or not include on the short list. In conditionally accepting the 3 California IOUs' procurement plans for 2008 RPS solicitations, the CPUC noted that "some subjective judgment will always be a necessary part of the selection process"<sup>7</sup> and that the Commission would "continue to employ the presumption that utilities are able to use their business judgment in running their solicitations"<sup>8</sup> within the parameters established and guidance provided by the CPUC.

The texts of both the Solicitation Protocol and PG&E's 2008 RPS RFO procurement plan suggest that the subjective judgment the utility employs in making the short list should be based specifically on information regarding, and scores for, the four specific non-valuation criteria listed in the protocol, and not other criteria.

---

### **C. STRENGTHS AND WEAKNESSES OF PG&E'S METHODOLOGY**

---

PG&E's evaluation methodology for renewable energy solicitations has been revised over the course of several years, and its evolution has benefitted from input from IEs and the utility's PRG. Consequently, it has achieved a certain degree of refinement that has strengthened the process from the perspective of fairness and reasonableness.

---

<sup>6</sup> "2008 Renewable Energy Procurement Plan and Draft Solicitation Protocol of Pacific Gas and Electric Company (U 39 E)", August 1, 2007, CPUC Rulemaking 06-05-027, page 2

<sup>7</sup> CPUC Decision 08-02-008, "Opinion Conditionally Accepting Procurement Plans for 2008 RPS Solicitations", February 14, 2008, page 28

<sup>8</sup> Ibid., page 4

At a high level, PG&E's methodology has several strengths, particularly when compared to approaches employed by many utilities in other jurisdictions:

- Use of an IE and the PRG for oversight and review, and their particular focus on evaluation of utility-affiliate offers, utility-owned generation, Power Purchase and Sale Agreements, and buyout options, allow for more transparent consideration of the fairness of how affiliate or utility-owned generation is treated vs. independent developers. The lack of such safeguards against anti-competitive behavior in some jurisdictions is strikingly different. In at least one jurisdiction it is straightforward for a utility to reject multiple independent power developers' offers in favor of utility-owned generation simply by scoring itself higher on non-price factors.<sup>9</sup>
- A methodology that allows the use of subjective judgment in creating a short list provides PG&E with more latitude to emphasize key non-valuation criteria that have current importance, such as project viability, in contrast to a rigid weighting system for price and non-price criteria as employed by other utilities.
- The public issuance of PG&E's Solicitation Protocol and its attachments, and the transparency and detail that it provides to potential Participants about how, specifically, the Offers will be evaluated, gives renewable power developers clearer and more detailed guidance than typical utility industry practice. For example, a currently active competitive solicitation for up to 250 MW of renewable power by Seminole Electric Cooperative, Inc. provides a total of 22 pages of documentation (mostly forms), of which only 1 page explains the bid evaluation.<sup>10</sup> Another utility actually declines to state publicly what its non-valuation criteria for offer evaluation are, other than transmission feasibility and relevant experience. PG&E's attachment K to the Solicitation Protocol provides Participants with 15 pages of clearly written guidance on the RFO's evaluation and selection process and criteria.
- Providing both a pre-bid conference and a bidders' workshop to explain Offer forms in detail and answer Participant's questions is unusual outside California. Many utilities simply issue a written RFP to document and explain the process; others hold a pre-bid conference, including a general question-and-answer session, and post the presentation materials on a website. PG&E's approach takes an extra outreach step to assist potential Participants to develop and submit conforming Offers.

However, PG&E's methodology has vulnerabilities that come along with these strengths.

---

<sup>9</sup> See for example "Certificate of Need Application: Elk River Peaking Station, Great River Energy", May 2007, in which the utility acknowledged that its utility-owned project was not less costly than those of five bidding participants, but selected its own project because (1) the utility owned the land for its peaker site (its corporate office) rather than holding an option to purchase a site as the independent developers did, (2) the utility rated its own generation department as "having the best reputation for developing generation projects", and (3) the utility rated itself as having superior information regarding necessary transmission upgrades, compared to independent developers.

<sup>10</sup> "Request for Proposals: Request for Renewable Capacity and Energy, RFP No. RCE 2008-B, Seminole Electric Cooperative, Inc.", May 2, 2008

- The two-step process for incorporating transmission adders into the ranking by market value is complex and time-consuming. Given the short period allowed by the schedule it can be a challenge for the PG&E evaluation committee to complete the first-step valuation analysis with a rigorously high degree of quality control, and then complete the second step to incorporate the transmission adders, in time to provide anything other than a draft version of the short list for review by the PRG. Arroyo recommends that PG&E consider building in an additional week in the schedule between Offer Opening and the PRG meeting for short list review, in order to help ensure that what the PRG reviews incorporates valuations with TRCR adders.
- Relying on subjective judgment to create the short list opens the risk that other considerations than those publicly identified within the Solicitation Protocol's stated list of non-valuation criteria may play a role in selecting or rejecting Offers for the short list. This risk is lower when a mechanical weighting approach or other objective process is used to incorporate the non-valuation criteria in creating the short list.
- The valuation methodology has some properties that, when combined with the specific elements of some Offers, may appear counterintuitive to some observers. These curious propensities of the model may occasionally need to be overridden by business judgment when making the short list, which is accommodated by PG&E's protocol.
- The methodology takes into account the cost of potential transmission network upgrades identified by the three California IOUs as necessary when enough new generation is added at a local "cluster" to trigger such a need. However, the evaluation of these costs relies on data provided in Transmission Ranking Cost Reports of the IOUs and on the practices of those utilities in compiling the reports. If the TRCRs provide inconsistent guidance, it can skew or bias the outcome of the valuation with transmission adders.

Specifically, Southern California Edison's (SCE's) TRCR treats the approved Tehachapi Renewable Transmission Project (TRTP) and associated new facilities as incremental network upgrade costs, so that the approximately \$2.6 billion of upgrade costs translate into a transmission adder of "approximately 1.62 cents" or \$16.2/MWh.<sup>11</sup> In contrast, SDG&E's TRCR treats the Sunrise Powerlink transmission project as a sunk cost, with that 500 kV line assumed into SDG&E's transmission modeling, along with all "transmission upgrades included in SDG&E's Grid Assessment studies that have been approved by the CAISO".<sup>12</sup> As a result, using the TRCRs results in a rather large transmission adder being applied to

---

<sup>11</sup> "Transmission Ranking Cost Report of Southern California Edison Company (U338-E) for Renewable Portfolio Standard Procurement", filed September 18, 2007 in Rulemaking 06-05-027, page 5-11

<sup>12</sup> "Transmission Ranking Cost Report of San Diego Gas & Electric Company (U 902 E) for Renewable Portfolio Standard Procurement", filed September 10, 2007 in Rulemaking 06-05-027, page 1

generation projects proposed to interconnect into facilities of the TRTP (such as projects located near Tehachapi Pass, Mojave, or the Antelope Valley) while none of the costs of the Sunrise Powerlink, which SDG&E originally estimated to cost \$1.256 billion<sup>13</sup>, are loaded onto generation projects proposed to interconnect near the Imperial Valley substation.

As a result, use of TRCR data in the valuation methodology tends to disfavor new generation interconnecting to TRTP facilities but doesn't penalize new generation sited in Imperial County with the costs of Sunrise Powerlink. This inconsistent treatment is a feature of the other IOU's practices, not of PG&E's general approach, but PG&E is obligated to employ the unequal, apparently biased cost loading.

The remainder of this section focuses on issues identified in the Energy Division's IE template as specific topics of interest to describe the strengths and weaknesses of PG&E's evaluation methodology.

## 1. COMPARISON OF PG&E'S METHODOLOGY TO THOSE IN OTHER STATES

There is a very wide range of practice among electric utilities in how they conduct competitive procurement for new resources. As noted above, PG&E's methodology is generally more transparent regarding process and criteria, has more safeguards against utility or utility-affiliate self-dealing, and provides an extra degree of outreach to potential Participants. Here are some other general observations:

- As with the PG&E Solicitation Protocol, most utilities specify both a valuation or price criterion and non-valuation criteria for evaluating Offers.
- The range of non-valuation criteria other utilities apply is extremely wide, including attributes employed in PG&E's methodology (credit/collateral, project viability, and their sub-topics) as well as others that PG&E's Solicitation Protocol does not explicitly consider.
- "Portfolio Fit" is seldom used as an explicit non-valuation criterion in offer evaluation outside California.<sup>14</sup> To the extent that valuation methods such as production cost models assign greater value to dispatchable resources and to resources that produce more on peak than off peak, the fit of a resource is captured in that analysis.

---

<sup>13</sup> "Phase 1 Opening Brief of San Diego Gas & Electric Company", filed November 9, 2007 in Application No. 06-08-010, page 74

<sup>14</sup> Arizona Public Service is employing "Portfolio Fit" as a non-quantitative evaluation criterion in its 2008 renewable solicitation: "APS 2008 Renewable RFP Bidder's Conference, June 25, 2008", page 7. Duke Energy, Nevada Power, and Sierra Pacific use "Portfolio Fit" as an evaluation criterion in their renewable solicitations, but for these companies the term refers specifically to the timing of the utility's RPS obligation and the offered project's ability to come into operation to meet the scheduled need

- Some utilities have rather narrower criteria for minimum eligibility of offers than required by PG&E.
- Relatively few utilities employ a real-option pricing approach to value generation, as PG&E does for dispatchable resources.<sup>15</sup> More typically, utilities employ production cost or dispatch models, such as PROSYM or STRATEGIST, to evaluate the impact on system operation and cost of a new resource and to identify a least-cost plan. Another common approach is for the utility to value the hourly generation of the new resource using the system marginal cost estimated by such a production cost model. Many utilities, when evaluating renewable resources that are not dispatchable, perform their valuation against an internal, proprietary set of forward curves, as PG&E does.
- It is typical for utilities to use an avoided-cost economics approach to valuing the capacity provided by a new resource, as PG&E does.
- In other jurisdictions, utilities are often allowed to consider integration costs when evaluating intermittent resources such as new wind generation. These cost adders can range from \$3 to \$10/MWh and are considered appropriate by regulators in those jurisdictions to capture the increased system costs needed to accommodate resources with unpredictable generation profiles.

To summarize, when compared to typical practices employed by utilities in other U.S. jurisdictions, PG&E's evaluation methodology appears to be designed to stimulate a more robust response from participants by suppressing some of the constraints applied in other RFPs. One would expect a trade-off that PG&E's more accommodating eligibility requirements may imply more challenges in making projects viable, especially when they are outside the CAISO and need transmission to wheel the power, when the developer is permitting, designing, and constructing a project whose technology is outside his/her experience, and when utility and Participant must negotiate detailed contract terms and conditions that differ considerably from the standard form agreement.

## 2. BIAS AGAINST TECHNOLOGY OR OPERATING CHARACTERISTICS

PG&E's evaluation methodology, unlike those of some other utilities, does not explicitly incorporate a preference for one renewable technology over another (such as for landfill gas over wind power) or for one operating characteristic over another (such as for baseload resources over as-available resources). The market valuation analysis, by which the initial ranking is performed, is designed to be neutral to technology.

That being said, some technologies should tend to score higher than others in PG&E's non-valuation criteria as defined in this solicitation. Offers that use technologies that are well-commercialized and which have been built and placed into operation by the dozens should score higher on "technology viability" than technologies that have only undergone trial in the laboratory or in experimental pilot tests on the scale of kilowatts. Intermittent

---

<sup>15</sup> Such tools are more often used by wholesale marketing and trading firms for valuing contracts

resources such as wind generation which have relatively poor forecast accuracy on a day-ahead basis should score lower on “portfolio fit” than baseload resources that are relatively firm, such as geothermal or landfill gas projects. PG&E’s methodology assigns a higher score for portfolio fit for resources whose energy “PG&E is sure to receive.”<sup>16</sup>

Similarly, PG&E’s market valuation methodology calculates a capacity value based on the annual average hourly generation profile measured between noon and 6 p.m. All else being equal, a project which delivers most of its generation in that afternoon block will be assigned a higher capacity value than a project that delivers energy at a flat level around the clock, if they have the same annual generation. So, all else being equal, a technology that strongly shapes its generation into the afternoon block is favored over technologies with baseload or flattish generation profiles. (Note that there is an offsetting effect: projects that peak in afternoons generally have higher weighted TOD factors on their production, increasing their energy cost to customers.)

These attributes of PG&E’s protocol do not appear to be biases intended to tilt towards one technology or one operating regime. Reasonable business judgment should favor resources with energy production that is highly predictable on a day-ahead basis over those with poor firmness and uncertain predictability. To increase the likelihood that PG&E customers will benefit from renewable projects that are built on schedule and deliver the promised levels of generation, the methodology should on average favor projects with well-commercialized technology. When planning to ensure a reliable electric system, a project with a predictable profile of generation peaking in the afternoon should on average get a higher capacity valuation than one with a flat baseload profile, all else being equal. If the methodology is administered fairly these attributes of the market valuation and non-valuation scoring process should not result in short list decisions biased towards one technology or operating regime.

### 3. THE ROLE OF “PORTFOLIO FIT” IN PG&E’S OFFER EVALUATION

In this year’s renewable solicitation, PG&E chose to represent portfolio fit with a numerical score based on a qualitative evaluation of firmness of energy delivery and of the time of delivery of energy delivery. In the prior year PG&E used a quantitative measure to evaluate the hourly and seasonal timing of energy delivery.

One issue with the design of PG&E’s methodology is the challenge of capturing the impact of adding new renewable resources on remarketing costs. To the extent new must-take resources are generating in periods when the utility might otherwise be net long power anyway, such as in the early hours of the morning in springtime, adding the resource may exacerbate the challenge of either dispatching down other resources or remarketing that extra power in a market that does not value it, creating opportunity costs or increasing total system costs to accommodate redispatch.<sup>17</sup> Utilities that employ a production cost or utility

---

<sup>16</sup> “Attachment K – Detailed Least Cost Best Fit Evaluation Criteria”, attachment to PG&E’s 2008 RPS Solicitation Protocol, page 7

<sup>17</sup> Hypothetically, a system operator may choose to commit more small thermal units in those hours instead of a few big ones in order to decrease the system minimum load point, increasing system  
*(Footnote continued)*

dispatch model have the ability to assess quantitatively how the thermal unit commitment may change, how units may need to be redispatched, and what the cost of that may be when a new must-take renewable resource is added.

On an unrelated note, new renewable resources that have poor day-ahead predictability may add to total system costs (relative to new resources that have a firm generation profile or good day-ahead predictability). All else being equal, a risk-averse system operator may choose to commit more dispatchable resources to take into account the volume uncertainty associated with unpredictable resources. More units committed, operating at lower load points, on average may increase total system cost.

PG&E's methodology for market valuation does not have the specific means to review such impacts on unit commitment and dispatch. PG&E's approach to valuing as-available renewable generation basically attributes a low value to the new project's production in those springtime off-peak periods because the forward curve assigns low prices to those hours. However, absent a tool that looks at unit commitment decisions, redispatch decisions, and remarketing costs, these impacts of building intermittent, poorly predictable, must-take generation aren't captured by the analysis (this is not meant to imply that production cost models do an excellent job of capturing the real costs of these impacts). Also, the methodology is required to treat integration costs as zero, even if intermittent wind generation were to increase as a major portion of the overall portfolio.

Consequently, there would seem to be a role for the use of portfolio fit as a criterion in addition to the market valuation step. To the extent that the portfolio fit criterion is designed to capture, even in a non-quantitative way, a sense of the costs or opportunity losses the customer bears when a new must-take resource affects remarketing costs and other system costs when it is added, this criterion may be helpful in the overall RFO evaluation, at the margin.

#### 4. GENERATION PROJECT TIMING VS. TRANSMISSION PROJECT TIMING

There are clearly situations in the California power market where the commercial operation date (COD) of a new renewable generation project is dependent on the COD of a major transmission network upgrade, as when a project proposes to interconnect to a yet-to-be-built substation or transmission line of SCE's Tehachapi Renewable Transmission Project or of SCE's proposed Devers-Palo Verde 2 transmission project. Alternatively, there are situations where a new project can come into commercial operation prior to the COD of a major transmission project, but the value of the project will be harder to realize and the operation and output of the project may be constrained until a major transmission upgrade is completed, as with generators proposing to interconnect in Imperial County and to inject power to IID or SDG&E substations prior to completion of the Sunrise Powerlink project.

In such situations, if the timing of the transmission project's COD is uncertain, it poses additional risks to the renewable power project to the extent that a delay in completing the

---

fixed costs that day. The utility that takes delivery of poorly predicted must-take power may need to sell it to other parties at short notice, driving down its price in an illiquid market.

network upgrade could prevent the utility from taking delivery of the renewable generation, or reduce the value and/or volume of that generation because of transmission congestion. Sadly, in the California market there are uncertainties about the timing of the completion of major transmission upgrades; even though transmission owners can make estimates for how long construction will take once all regulatory approvals are obtained, estimating when approvals are likely to be completed is challenging when the merits or impacts of proposed transmission projects are contentious, as with Devers-Palo Verde 2 and Sunrise Powerlink. The PG&E evaluation committee likely has no better insight into the timing of regulatory approvals than other industry observers.

Attachment K of PG&E's Solicitation Protocol specifically states that the team has the ability to consider "timing and viability of transmission upgrades relative to commercial operation date"<sup>18</sup> in developing a score for each Offer's project viability. However, there is apparently no specific means in the actual procedure used by the PG&E evaluation committee to provide a demerit to an Offer's project viability score if there is a mismatch between transmission operation date and generation project operation date, or if there is a strong risk that network upgrades will be incomplete when the project is commercially ready. This is an omission that Arroyo recommends be addressed in the next revision of PG&E's internal protocols prior to future solicitations. Either (1) the protocol used to evaluate project viability should be rewritten to be consistent with this language in Attachment K, or (2) the attachment and the procurement plan for future solicitations should omit this issue.

The information developed by the evaluation team regarding timing and viability of transmission upgrades can be used in subjective decision-making to select a short list. Therefore the methodology allows the PG&E team to make a judgment about whether or not to short-list a project for which the proposed COD is threatened by potentially adverse outcomes in the timing of a closely-related transmission upgrade, even if that threat is not reflected in the numerical score for Project Viability.

Is it fair to reject from the short list an Offer in such a situation, where concerns about the timing of a transmission project reduce the generation project's viability score or put into question the value of the project prior to transmission COD? One could argue that it is likely that locations that are currently constrained, in which new generation will suffer lower prices and/or reduced volume because of transmission congestion, will eventually be debottlenecked by network upgrades so that a proposed new renewable project in such a location will sooner or later be freed from the constraint. Allowing the PG&E team to use its judgment in making tradeoffs between market value and the risk of a mismatch between transmission upgrade timing and project COD is a reasonable approach.

---

<sup>18</sup> "Attachment K – Detailed Least Cost Best Fit Evaluation Criteria", attachment to PG&E's 2008 RPS Solicitation Protocol, page 9

## 5. TRANSMISSION COST ANALYSIS

The PG&E methodology provides for four major sources of transmission cost information to be used in valuing Offers when making a short list<sup>19</sup>:

1. For some projects, transmission wheeling costs from an Offer's delivery point outside the CAISO grid to the boundary of the CAISO grid must be estimated. For the purposes of making a short list, the methodology calls for the use of the full cost of third-party transmission tariffs as a proxy for this cost (the Participant has the opportunity to propose a price premium to move its power to a CAISO delivery point in its Offer).
2. Transmission adders published in the IOUs' Transmission Ranking Cost Reports are used as proxies for those network upgrade costs potentially needed to accommodate incremental renewable generation in locations that may become congested.
3. If a project has already progressed to an advanced state of development or construction, the specific cost of network upgrades needed to accommodate its incremental production have been estimated in a System Impact Study and/or Feasibility Study through the CAISO interconnection process.
4. The methodology affords PG&E an opportunity to estimate the cost of "alternative commercial arrangements", such as remarketing the project's power, undertaking swaps, or purchasing non-firm transmission rights, to avoid network upgrades.

PG&E had procedures in place to obtain publicly available third-party transmission tariffs to apply adders for Offers proposing to deliver at points outside the CAISO. PG&E also had the capability to estimate the feasibility and cost of alternative commercial arrangements. Under the protocol, a Participant should submit the estimated cost of network upgrades if a System Impact Study and/or Feasibility Study have been completed. The TRCR data for both PG&E and the other California IOUs are publicly available.

The Standards of Conduct mandated by the Federal Energy Regulatory Commission (FERC) prohibit PG&E's transmission planning group from sharing non-public transmission-related information with employees of PG&E's marketing or "merchant" function, including members of the evaluation committee. The solicitation methodology included a request to Participants to sign a waiver authorizing such sharing of information if the offered project is planned to interconnect to PG&E's grid.

The Solicitation Protocol envisaged that, if an Offer proposed to provide unique benefits to grid operation, such as local reliability support, transmission-related information would need to be shared in order to evaluate such benefits. In the period of time between Offer Opening and finalizing a short list, the evaluation committee did not seek to obtain such non-public information, though some Offers claimed that bringing their projects on-line

---

<sup>19</sup> The cost of transmission facilities needed to connect the project to the first point of interconnection in the grid, or "gen-tie" costs, are supposed to be incorporated into the price of the Offer

would provide benefits to the reliability of electricity service and the avoidance of future network upgrade costs for PG&E circuits. In the opinion of Arroyo Seco Consulting, the absence of non-public data from PG&E transmission planners and the fact that the evaluation committee did not seek it before making a short list did not have a material effect on the fairness and reasonableness of the selection process.

PG&E's evaluation committee initially evaluated the feasibility and cost of "alternative commercial arrangements" in two situations, for power entering the PG&E system from the north and south. For Offers that delivered power at the California Oregon Border (COB) and for Offers that delivered in the SP-15 zone where power would enter the PG&E system at Midway substation, the team estimated the cost of alternative commercial arrangements to accommodate increase generation while avoiding the need for network upgrades to deal with congestion at Round Mountain and Midway, respectively.

In order to keep the methodology's treatment of northern and southern projects outside PG&E's territory unbiased, the committee also estimated the cost of alternative commercial arrangements for projects interconnecting in ZP-26 or NP-15 in the Midway cluster or Round Mountain cluster. This avoided an outcome where, for example, a project in ZP-26 was loaded with the TRCR adder for Midway while a competing project in SP-15 transmitting power through Midway was loaded with a smaller adder based on alternative commercial arrangements.

## 6. WEIGHTINGS APPLIED TO EVALUATION CRITERIA

The PG&E methodology does not use quantitative weights to apply to evaluation criteria. In its current form, the methodology does not provide for, say, an assignment of a 60% weight to market valuation and a 20% weight to project viability in ranking Offers. Instead, a valuation-based ranking is the starting point for decision-making, and PG&E uses subjective judgment to reject or include Offers from the short list using information and scoring of the non-valuation criteria.

Because weighting of the criteria is absent from the protocol, the issue of whether PG&E applied appropriate emphasis on one criterion vs. another in this solicitation is better treated in the section below on the fairness of the administration of the methodology and the use of judgment in considering non-valuation criteria in making the short list.

## 7. POTENTIAL IMPROVEMENTS TO PG&E'S METHODOLOGY

The methodology employed in PG&E's 2008 renewable energy solicitation has benefitted from several iterations over the years with input from IEs, guidance from PG&E's PRG, and internal discussions on how to improve the approach. Consequently significant progress has been made to streamline the Offer evaluation process, to encourage participation, to enlarge the pool of possible Participants, and to make the process flexible enough to accommodate a wide range of Offers. Still, incremental improvements are still possible, and this section suggests areas where these may be made.

- Transparency of evaluation criteria: supplier concentration. Supplier concentration, or the degree to which PG&E's RPS procurement portfolio is concentrated in the

hands of relatively few counterparties, is a legitimate business concern. In this stage of the development of the industry, several developers of renewable power are start-up enterprises, lack project experience, rely on technologies that have seldom or never been constructed on the massive scale now being undertaken, and face other project-specific risks related to equipment, permitting, site control, etc. It would be imprudent for PG&E to make a short list that placed a large fraction of counterparty risk in the hands of one or two competitors who, for example, had never developed a biomass generation project previously but proposed to construct a number of biomass facilities. The risk of failure to meet RPS goals would be increased if PG&E were to rely on a very few renewable developers to build and operate very large numbers of projects successfully in the next few years, as opposed to several developers with a diverse set of skills, experience, and technologies, each assigned a manageable volume of project awards.

Supplier concentration is closely related to project viability. The risk of failure to bring a renewable generation project to fruition is one thing; to multiply that risk by including several projects of a single counterparty is another. A small development company that might easily be able to manage a PG&E contract for one or two projects of a dozen MW apiece might find itself overwhelmed if it were awarded a contract for dozens of such projects totaling hundreds of MW, jeopardizing its ability to complete more than a few projects on schedule and on budget.

Thus, supplier concentration is a commercial consideration that should be seriously considered when making decisions about renewable power procurement. Several of the Offers that were ranked high for market valuation were put forward by firms which lacked project experience in siting, developing, permitting, constructing, and operating generation projects using the specific technologies they proposed. Several proposed projects much larger than any they had previously undertaken.

However, the attribute of supplier concentration, applicable to a short list or a procurement portfolio as a whole, is not identical to project viability. The current protocol is designed for the evaluation committee to score individual Offers on their stand-alone viability. If, hypothetically, 50 projects offered by one developer each received a score of 4.0 out of 5.0 for project viability, it means that each project individually is quite viable, but it does not mean that accepting all 50 projects and negotiating contracts for all 50 is a viable, prudent, or reasonable strategy for PG&E.

PG&E's Solicitation Protocol does not mention supplier concentration as a criterion for evaluating Offers or as a consideration for selecting Offers for a short list. The procurement plan states that PG&E will use information and scores from evaluation criteria to decide which Offers to include in its short list. This appears to imply that if supplier concentration is not an evaluation criterion, it should not be taken into account in making the short list. In fact, considerations of supplier concentration were a key focus in making the short list, and appropriately so, given the heightened degree of counterparty and project risk present in the 2008 proposals.

PG&E's original procurement plan for the 2008 RPS RFO asserted that the revision in the portfolio fit criterion would allow it to "strike a balance on the shortlist

regarding the offers' location, technology, online date, and counterparty concentration"<sup>20</sup> So there is an opening for a consideration of supplier concentration through the portfolio fit scoring. However, the portfolio fit score isn't well suited for this, since the evaluation committee creates a score for each individual Offer, and the decision to avoid excessive concentration must in some cases be based on having accepted several Offers onto the short list. Excess concentration is an attribute of the process of making a short list, not usually an attribute of an individual Offer. In any case, the actual 2008 Solicitation Protocol has no mention of counterparty concentration in the text describing the portfolio fit criterion.

Arroyo Seco Consulting recommends that in future Solicitation Protocols PG&E should explicitly identify supplier concentration as a consideration used in Offer selection. This would improve the transparency to the developer community of how PG&E makes the short list decision. It would make the Solicitation Protocol more consistent with how Offer selection is actually conducted. Supplier concentration need not be a separate evaluation criterion but could, perhaps, be incorporated in the protocol's discussion of the Project Viability criterion or of what factors will be taken into account as subjective judgment is applied to make a short list.

- Transparency of evaluation criteria: emerging technologies. The CPUC decision that conditionally approved PG&E's 2008 RPS Procurement Plan explicitly stated that "We [the Commission] also expect utilities to consider projects which employ emerging technologies." To the extent that such projects are evaluated in RPS solicitations, "utilities may need to develop slightly different evaluation criteria for emerging, pilot and demonstration projects."<sup>21</sup>

For the 2008 RPS solicitation, PG&E had not as yet modified its Solicitation Protocol to accommodate this concept of setting up different evaluation criteria for emerging technologies within the RPS RFO than for mainstream renewable projects. Indeed, the criterion for project viability explicitly includes a consideration of technology viability: a project that uses an "established technology in wide commercial use" will score higher than one that is based on a technology "still in R&D stage" or "in demonstration phase or early commercialization."<sup>22</sup>

The CPUC's guidance to consider projects using emerging technologies directly contradicts the overall imperative for utilities to select commercially viable Offers with the greatest likelihood of coming into operation and serving the policy objective of meeting RPS goals. Going forward, the regulator and utility could identify an

---

<sup>20</sup> "2008 Renewable Energy Procurement Plan and Draft Solicitation Protocol of Pacific Gas and Electric Company", August 1, 2007, CPUC Rulemaking 06-05-027, page 14

<sup>21</sup> CPUC Decision 08-02-008, "Opinion Conditionally Accepting Procurement Plans for 2008 RPS Solicitations", February 14, 2008, pages 31-32

<sup>22</sup> "Attachment K – Detailed Least Cost Best Fit Evaluation Criteria", attachment to PG&E's 2008 RPS Solicitation Protocol, page 10

alternative procurement process than the RPS RFO solicitation for selecting commercial-scale projects based on emerging technologies and awarding contracts.<sup>23</sup>

In the absence of such an alternate process, PG&E should revise its Solicitation Protocol in the next RPS RFO to carve out, set aside, or otherwise target a portion of the short list for Offers based on emerging technologies, a carve-out of candidate Offers for which the technology viability sub-criterion does not apply in the evaluation. Such a revision should include specific guidelines for how PG&E would decide which emerging technologies are deserving of short-listing despite weaker project viability and what portion of volumes in the solicitation should be targeted for these less viable technologies.

- Eligibility criteria: hybrid renewable/fossil technology. In future RPS solicitations, PG&E should give explicit guidance to potential participants about the conditions under which a hybrid renewable/fossil project can be evaluated vs. will be rejected as non-conforming. A few Participants offered multi-fuel projects in this RFO.

For example, the 2008 RPS Solicitation Protocol is explicit in stating that the objective of this solicitation is to procure RPS-eligible generation from eligible renewable resources. But Section X.B, which describes eligible resources, is silent on the subject of multi-fuel generators which include nonrenewable fuels, whereas the CEC explicitly sets guidelines for how a portion of their production can be RPS-eligible. Section IX, which describes Offer Pricing, does not explicitly call for the Offer to provide proposed prices for the renewable portion of generation alone, and it should. PG&E should improve the transparency of its guidance to developers by explicitly describing the conditions, if any, under which Offers from multi-fuel projects that include nonrenewable fuels will be considered in an RPS RFO or not.

- Inputs to market valuation: extrapolating forward curves. The valuation analysis relies on PG&E making a forward energy curve and volatility curve that stretches far into the future, to the termination date of the longest proposed PPA. This requires extrapolation of gas and electric forwards beyond the furthest date of what is observable based on market transactions or broker quotes; the power market is illiquid beyond a reasonably short time horizon.

In extrapolating so far into the future, the PG&E team must assume escalation rates for both gas and power forwards. The gas forwards serve as input to the calculation of projected RA value. Escalating forward gas and power prices at different rates has an effect on the predicted RA price. For example, if the power forward price is extrapolated to escalate faster than gas price, the implied market heat rate increases. This would be consistent with a future in which the gas-fired unit needed at the margin to serve peak demand will be increasingly inefficient. It implies that no technological improvements in unit efficiency are anticipated. It would also imply

---

<sup>23</sup> For example, the Emerging Renewable Resource Program, which serves as a vehicle for confirming the commercial feasibility of technologies that have been tested only in a preliminary manner, could possibly form the basis for awarding utility procurement contracts for commercialized projects using these technologies

that a new marginal generating unit's utilization increases over time. This result would affect the projected capacity value used in the market valuation protocol.

Arroyo Seco Consulting suggests that the gas and power forward prices be extrapolated to increase at about the same escalation rate beyond the point in time when the California power market is assumed to be in capacity equilibrium. That would tend to reduce effects on the capacity valuation caused by disparate assumptions about gas and power price escalation.

- Inputs to market valuation: adjustment assumptions. The current market valuation protocol includes adjustments to take into account the likely impact of transmission congestion. The data used to make these adjustments are obsolete and need to be updated.

Because this step of the market valuation analysis can play a major role affecting the ranking of projects that interconnect in historically congested locales, Arroyo recommends that in future years the public market valuation protocol be expanded to discuss the methodology at a summary level. This would improve the transparency of the solicitation and evaluation process so that potential Participants would better understand the means by which the ranking of their projects in the selection process may be affected by their choice in siting.

### 3. FAIRNESS OF HOW PG&E ADMINISTERED THE OFFER EVALUATION AND SELECTION PROCESS

This section describes the extent to which PG&E's administration of its protocols for Offer evaluation and selection of a short list in the 2008 renewable solicitation was conducted fairly. The overall conclusion is that the process in this case was conducted in a fair and consistent manner, with some issues in the process worthy of detailed review. This chapter discusses the process of how PG&E developed a "final shortlist" submitted to the CPUC on July 15, 2008.

---

#### A. PRINCIPLES USED TO DETERMINE FAIRNESS OF PROCESS

---

The Energy Division has provided a set of principles proposed to guide IEs in determining whether an IOU's evaluation and selection process was fair:

- Were affiliate Offers treated the same as non-affiliate?
- Were Participants' questions answered fairly and consistently and the answers made available to all?
- Did the utility ask for "clarifications" that provided the Participant an advantage over others?
- Were Offers given equal credibility in the economic evaluation?
- Was there a reasonable justification for any fixed parameters that enter into the methodology (e.g., RMR values; debt equivalence parameters)?
- What qualitative and quantitative factors were used to evaluate bids?

Some other considerations appear relevant to the specific situation PG&E found itself in during the 2008 RPS RFO. Specifically, in this year's solicitation PG&E streamlined its evaluation process by dropping its prior methodology of partial ordering analysis. Instead, the team ranks Offers by market value, after which, using "the information and scores from the other evaluation criteria, PG&E will then apply judgment and PRG feedback to decide which Offers to include or not include on the shortlist."<sup>24</sup> The application of subjective judgment in bringing the non-valuation criteria to bear on decision-making, rather than a

---

<sup>24</sup> "2008 Renewable Energy Procurement Plan and Draft Solicitation Protocol of Pacific Gas and Electric Company", August 1, 2007, CPUC Rulemaking 06-05-027, page 2

rigorously mathematical, objective means of doing so, implies an opportunity to test the fairness of the administration of the process using additional principles:

- Were the decisions to reject higher-valued Offers from the short list because of low scores in criteria other than valuation applied consistently across all Offers?
- Were the decisions to accept lower-valued Offers into the short list based on superior scores in criteria other than valuation, despite lower values of those specific Offers, applied consistently across all Offers?
- Were the judgments used to create the short list based on explicit evaluation criteria that were publicly made available to Participants prior to Offer submittal through the Solicitation Protocol or other documents such as the procurement plan?

---

**B. REVIEWING PG&E'S ADMINISTRATION OF ITS EVALUATION AND SELECTION PROCESS**

---

PG&E provided Arroyo Seco Consulting with many detailed inputs to its valuation model and with results of market valuation at several steps during the evaluation process. Arroyo also had copies of all Offers and of correspondence between PG&E and Participants during this period, and was able to make independent judgments about the strengths and weakness of individual Offers against the evaluation criteria laid out in PG&E's protocols.

Arroyo was also present at evaluation committee and steering committee meetings in which draft proposals for the short list of Offers were developed, reviewed, questioned, modified, argued, and finalized. The logic and priorities underlying why specific Offers were rejected and accepted to the short list were made evident in these sessions. Arroyo had access to members of the evaluation committee responsible for scoring the Offers against each of the evaluation criteria. Arroyo was able to perform the role of questioning decisions that appeared unfair or inconsistent from an independent perspective, and stating the basis for these concerns to the steering committee.

Additional elements of Arroyo's approach for evaluating fairness of the process include:

- Building an independent valuation model that directly used detailed Offer information, to construct an independent ranking of Offers by net market value
- Comparing PG&E's valuation ranking to the IE model's ranking in detail, identifying outliers (e.g. where PG&E ranked an Offer much higher than the IE), identifying the root cause for variances, and determining whether variances were justified by different inputs and methodology or stemmed from errors by either PG&E or IE
- Checking intermediate analysis and inputs to the valuation model, e.g. assignment of Offers to nodes and weighted-average TOD factors, for accuracy and consistency
- Reviewing in detail PG&E's decisions to reject higher-ranked Offers for nonconformity or for material weaknesses in non-valuation criteria, and

independently evaluating whether the factual basis for nonconformity and for low scores in non-valuation criteria were justified; also reviewing decisions to accept Offers with material deficiencies

- In situations where PG&E proposed to accept lower-ranked Offers for inclusion in the short list, reviewing in detail the factual basis for the higher scores these Offers received for criteria other than valuation, and testing whether the logic for elevating Offers for such higher scores was applied consistently or showed evidence of bias
- Testing these rejection and acceptance decisions for consistency; reviewing whether the logic for rejection and acceptance was consistently applied to all Offers

---

### C. FAIRNESS OF REJECTION OF OFFERS FOR NONCONFORMITY

---

Only two Offers were rejected by PG&E for nonconformity to the Solicitation Protocol. PG&E rejected one Offer structured as the sale of renewable fuel. PG&E concluded that potentially substantial utility costs beyond the price of the fuel would need to be incurred in order to use the fuel. Full costs to produce renewable power for customers were unknown.

Arroyo agreed that PG&E's decision to reject this Offer was fair and reasonable. Arroyo's opinion was that because the Offer did not propose to supply renewable power, it didn't conform to the specific terms of the 2008 RPS RFO Solicitation Protocol, and PG&E could reject the Offer on that basis, as opposed to the basis of unknown, possibly substantial utility costs. PG&E has other procedures and standards in place to evaluate the purchase of renewable fuel than the RPS RFO, which is designed as a solicitation for power.

The other Offer rejected by PG&E for nonconformity proposed the sale of bundled renewable and fossil-fueled power, mostly from nonrenewable energy. PG&E's judgment was that an Offer to sell mostly fossil-fueled energy did not conform to the RFO protocol.

Arroyo agreed with PG&E that rejecting this Offer was fair and reasonable, but for a different reason. The Participant proposed a pricing arrangement with uncertainty about the price of power. PG&E would be responsible for the actual cost of energy consumed by the project on a day-to-day, month-to-month basis. This would expose PG&E and its customers to considerably more price risk than competing Offers. However, the Solicitation Protocol for this RFO specifically states that "Prices should be fixed for the delivery term of the Agreement, *i.e.*, no indexed prices, although they may be different from year-to-year."<sup>25</sup> The failure of the Offer to state its proposed energy price as a fixed price for each contract year rendered this Offer non-conforming, in Arroyo's opinion.

Arroyo did not believe that the language of the Solicitation Protocol clearly and specifically rejected bundled hybrid projects that include fossil-fueled energy. It seems unclear whether such bundled projects have a natural "home" for evaluation and selection,

---

<sup>25</sup> "Renewables Portfolio Standard, 2008 Solicitation Protocol, Pacific Gas and Electric Company, February 29, 2008", page 28

because they aren't well-suited for evaluation in an RPS RFO and are likely uncompetitive against purely fossil-fueled projects in an all-source RFO.

Both these Offers were rejected for nonconformity based on qualitative attributes. Among the other Offers accepted for evaluation were some with serious qualitative deficiencies. In Arroyo's opinion, only one Offer selected for the short list had deficiencies approaching those of the two Offers which were rejected for nonconformity. Arroyo expressed concerns about this Offer to PG&E and its PRG but judged that PG&E's decision to accept it did not disadvantage other Participants.

---

#### D. REASONABLENESS OF PARAMETERS AND INPUTS

---

The vast majority of the many parameters and inputs that PG&E used in its evaluation of the 2008 RPS RFO Offers were reasonably chosen, in the opinion of Arroyo Seco Consulting. There are three minor issues regarding the choices PG&E made about inputs that merit discussion.

PG&E used a discount rate of 7.6% to bring future Offer costs and benefits to a 2009 present value. Members of the PG&E evaluation committee indicated that this value is based on PG&E's approved cost of capital proceeding. It represents the approved weighted average cost of capital (WACC) for PG&E, on an after-tax basis.

A public filing by PG&E Corporation described the approval by the CPUC, on December 20, 2007, of the utility's capital structure and authorized rate of return for 2008, at the same levels as had been approved for 2007.<sup>26</sup> As reported in the filing, the "adopted cost of capital" on a weighted return basis was 8.79%; this is a pre-tax weighted average cost of capital. Applying an assumption for marginal tax rate of 40.75% to the debt component of this adopted pre-tax WACC yields an after-tax WACC of about 7.66%, close to the value used as discount rate.

It is not clear that an after-tax WACC is a reasonable choice to use for discounting Offer benefits and costs in a present value analysis. The costs of a PPA are based on payments by the utility to the Participant, payments based on prices that are expressed in pre-tax nominal dollars per MWh in the Offers. The benefits to utility customers are based on a forward curve and a projection of capacity value, each denominated in pre-tax nominal dollars per MWh or per kW-year. Utility customers who purchase renewable power from PG&E pay their bills out of pre-tax dollars. PG&E's approach for calculating levelized margin does not include a step for applying a tax rate to annual margins to convert them to after-tax margins (as the MPR methodology does). So a reasonable approach would be to discount annual net pre-tax margin of a PPA using a discount rate based on pre-tax cost of capital, not after-tax.

If the focus of the analysis were to place an equity value on the renewable project for its shareholders by discounting the future cash flows flowing to project equity holders, net of interest and taxes, then an appropriate and reasonable approach would be to apply an appropriate after-tax cost of capital to those equity cash flows. However, the focus of this

---

<sup>26</sup> PG&E Corporation, Form 8-K, filed December 21, 2007

evaluation analysis is to assess the net benefit to ratepayers by inspecting future (pre-tax) payments to a Participant relative to the (pre-tax) market value of the delivered energy, capacity, and environmental attributes.

Using the discount rate for this purpose which is based on an after-tax WACC (smaller value than a pre-tax WACC) has the effect of placing a larger weighting on the more distant future benefits and costs of the project than is appropriate. All else being equal, this tends to favor Offers that propose flat nominal pricing for energy over Offers that propose escalating prices over the contract term, compared to an evaluation using the larger pre-tax WACC.

Another open issue is whether it is appropriate to use a regulated utility's authorized cost of capital as the discount rate for net revenues from PPAs with renewable generation developers. These developers are generally not regulated utilities but are rather private or public companies in the independent power producer (IPP) sector. The cost of equity and cost of debt for the riskier IPP sector are both considered higher than for regulated utilities. For example, the cost of debt assumed into the California Energy Commission's (CEC's) 2007 analysis of the Market Price Referent (MPR), an analysis that represents the risks of an IPP developer building a proxy plant under a long-term PPA, was 7.72%<sup>27</sup> compared to PG&E's authorized 6.05%, and the assumed cost of equity underlying the proxy plant developer was 13.28% compared to PG&E's authorized 11.35%.

One could argue that the flow of net benefits of power deliveries from IPPs contracting in long-term PPAs has more risk associated with it than PG&E's risk (e.g. higher credit risk, bankruptcy risk, liquidity risk) that merits discounting the net benefits at the higher WACC associated with the IPP industry. That suggests that the appropriate WACC to be used when evaluating Offers in this solicitation should be closer to the 8.93% pre-tax WACC for the proxy plant cited in the 2007 MPR spreadsheet than to 7.6%. Arroyo Seco Consulting suggests that PG&E use the pre-tax WACC of the proxy plant in the 2008 MPR as the discount rate for the next renewable solicitation.<sup>28</sup>

---

#### **E. TRANSMISSION ANALYSIS AND TRANSMISSION INFORMATION**

---

PG&E followed its transmission analysis protocols in administering its procedures for market valuation. The team utilized a set of detailed information on full transmission tariffs as a proxy to bring power delivered outside the CAISO grid to delivery points on the boundary of that grid. The team used the TRCR information of the three California IOUs to estimate the cost of network upgrades for new projects interconnecting in congested locations; in the case of projects within PG&E's service territory, the team was able in most cases to estimate a lower cost using alternative commercial arrangements. This is a great deal

---

<sup>27</sup> Resolution E-4118, Energy Division of the Public Utilities Commission of the State of California, October 4, 2007, page 24

<sup>28</sup> Note that Arroyo does not suggest the use of a pre-tax IPP WACC as an input parameter to the Black option pricing model utilized for valuing dispatchable generation, described in Attachment K. Arroyo suggests using traditional proxies for the "risk-free rate" input to Black's model, such as U.S. Treasury securities. This discussion of pre-tax IPP WACC applies only to use of a rate for discounting pre-tax benefits and costs of as-available, baseload, and peaking Offers.

of transmission information to process in a short period of time and the team should be commended for its success in having developed, acquired, and applied a full set of this data within the deadline.

---

#### **F. PG&E'S USE OF OTHER ANALYSIS TO CREATE A SHORT LIST**

---

The general approach PG&E's evaluation committee used to create a draft short list was to begin with the list of Offers ranked by market valuation and to:

1. Reject Offers judged to be non-conforming;
2. Ignore Offers that were withdrawn by their developers after Offer Opening and before short-list notification;
3. Reject Offers that scored quite low on the Project Viability criterion;
4. Accept to the short list three Offers whose developers had been provided short list status prematurely by another utility, a utility that had requested that these Participants sign an exclusivity agreement;
5. Accept to the short list the highest valued Offers, marching down the ranking, although...
6. Rejecting Offers in situations where accepting an incremental Offer from a Participant whose had an Offer or Offers that had already been accepted (or who holds existing contracts with PG&E from prior solicitations or negotiations) would lead to excessive supplier concentration, in the team's judgment.

Using this logic, and with some exceptions, a preliminary draft of a short list was developed that fell within the volume target for the RFO. This draft was based on the preliminary market valuation ranking without TRCR adders or alternative commercial arrangement adders, so it had to be revised when that transmission analysis was completed and Offers were re-ranked. This section discusses the extent to which non-quantitative evaluations or criteria other than those stated in the solicitation protocol were employed.

#### **1. PREMATURE SHORT-LISTING BY ANOTHER UTILITY**

The early inclusion of the three Offers to the short list was an exceptional decision, in which PG&E sought guidance from the PRG, the Energy Division of the CPUC, and the IE. The three California IOUs had arranged their 2008 RPS RFO schedules so that each IOU publicly proposed to inform the short-listed Participants of their status on June 30 or July 1. However, Participants informed PG&E that another California IOU had placed some of their Offers on its short list and requested that they sign agreements for exclusive negotiations by deadlines in early June, prior to the publicly posted date for short-listing.

This was quite awkward. PG&E had not yet completed a market valuation with TRCR adders, and had not completed scoring against non-valuation criteria. If PG&E were to let

the other utility secure exclusive negotiations for contracts with these 3 projects, it could be to the detriment of PG&E customers to not have access to the projects' renewable power at the attractive offered pricing. If PG&E were to offer the projects short list status prior to completing its evaluation in full, it might later turn out that the projects should not have been included, based on complete analysis.

The guidance PG&E received included a view that if an Offer was a "sure bet winner", then providing it short list status before the scheduled July 1 date would not change the solicitation or disadvantage the other Participants. PG&E's team used its best judgment to determine that the 3 Offers were very likely to be short-listed at the completion of the evaluation, and put them on the short list in June. Arroyo Seco Consulting agreed with this judgment for 2 of the 3 Offers, and expressed concern about whether the third could be judged a "sure bet winner". In the actual outcome of the fully completed evaluation, all 3 Offers were ranked high in market value and scored high on the non-valuation criteria, and would have merited short list status anyway using PG&E's completed decision process.

Because a situation such as this places a burden on the utility to make a judgment about an Offer without complete information or analysis, with a risk of making the error of unfairly short-listing an undeserving Offer, it would be desirable for the regulator to find a means to avert premature short-listing in future solicitations. This would help avoid future "bidding wars" in which utilities compete to drive more and more Participants into exclusive negotiations through premature short-listing. However, if there is no legal means to require the IOUs to synchronize the timing of when they actually announce short list status to Participants and demand exclusive negotiation rights, then it would be helpful if clear guidelines were provided to PG&E about the circumstances in which it would be fair and reasonable to respond by offering short list status prior to its deadline (in other words, what constitutes a "sure bet winner"?).

## 2. IMPACT OF PROJECT VIABILITY EVALUATIONS

Review of the short list by the PRG led to discussion of several issues, and to the inclusion of two Offers in the revised short list. The history of competitive solicitations has included various projects with which utilities negotiated procurement contracts, but that did not come to fruition or have been delayed considerably because of a variety of project-specific issues. Members of the PRG placed a strong emphasis on the viability of projects. A concern was expressed that the draft list did not include some projects offered by those few firms that had actual experience in developing, constructing, and operating projects based on the proposed renewable technologies.

Based on this discussion, two Offers were added to the short list that were lower ranked in market valuation than the lowest-ranked Offer on the draft list (including the impact of TRCR adders) but which scored higher on the Project Viability criterion than any other Offer not accepted on the draft list but six. Of those six, equally or higher ranked for project viability, two had been withdrawn by their Participants and four had been rejected by the PG&E evaluation team based on concerns of excess supplier concentration. Essentially PG&E took the input of PRG members as guidance to reach down the valuation-based ranking list to select two lower-valued projects with superior project viability for the short list.

### 3. CONSIDERATIONS OF SUPPLIER CONCENTRATION

To summarize, PG&E used two criteria or analyses other than those identified in its solicitation protocol to make decisions about the short list. One is obvious; Offers were not short-listed if the Participant withdrew them from consideration after having originally submitted them. The second criterion and analysis was to avoid excess supplier concentration. As described previously, future solicitations would benefit if this criterion were made explicit within the solicitation protocol, to increase transparency regarding how PG&E considers this issue as it applies judgment to make a short list.

The team applied a general rule of thumb of avoiding a short list that would result in an excessive volume or share for any one Participant. The team also exercised its commercial judgment to keep the total volume of Offers on the short list lower still for Participants who had little or no demonstrated experience in developing, permitting, designing, constructing, and/or operating projects of the specific technology they proposed in their Offers. This was a straightforward analytic approach that required subjective judgment to be exercised by the team. Arroyo Seco Consulting's opinion is that criterion of supplier concentration in making a short list is a legitimate business concern, and the decisions to exclude Offers based on PG&E's analysis of supplier concentration were fair and reasonable.

### 4. NON-QUANTITATIVE ANALYSES

PG&E used two key non-quantitative analyses to make short list decisions. One was to determine which Offers were non-conforming, as discussed in section C, above. The second was to determine scores for project viability. In this case, the distinction between projects with poor viability and those with a strong likelihood of being completed was fairly clear. Offers that were rejected for poor project viability scores stood out for several attributes, for example:

- Projects whose developers had no prior experience in the energy industry or in developing renewable generation
- Technologies that had been demonstrated previously in pilot scale but never in commercial application
- Offers for site ownership lacking adequate documentation of resource availability

The PG&E evaluation committee's judgment was that projects such as these had sufficiently small likelihood to come to fruition as commercial ventures, based on poor scores for Participant experience, technological viability, the status of the project's development, evidence of progress on grid interconnection, and/or progress on design, construction, and equipment acquisition. While it is a subjective decision to identify which projects to reject for poor viability, the judgment exercised by the PG&E team was fair and reasonable in Arroyo's opinion, although Arroyo expressed concern about one decision described below.

Arroyo does recommend that more specific guidance in the solicitation protocol be provided to Participants who offer sites for development under utility ownership, guidance

about what information should be included in their Offers. While the current protocol spells out the need to submit a project description and contact information, and for “all of the information required of other utility ownership proposals”,<sup>29</sup> it seems that more specific guidance is needed to elicit useful information in these Offers.

## 5. EFFORTS TO CORRECT DEFICIENCIES

In the case of the two Offers that were outright rejected for non-conformity with the Solicitation Protocol, PG&E made efforts to rectify the deficiencies in the proposals prior to making the decision to reject.

In the case of the Offer which did not propose to deliver renewable electricity, to sell a renewable generation project, or to sell a site for ownership, the submitted proposal was quite incomplete and failed to provide required information spelled out in the Solicitation Protocol, such as a description of the project, of site control, of a project schedule, of experience and qualifications of the project team, etc. PG&E requested the missing information and posed a specific query regarding the eligibility of the Offer under the CEC RPS Program, in a letter sent in mid-May. The Participant responded with detailed information. However, the Offer remained a proposal that did not offer renewable electricity to the utility, and did not otherwise qualify as a PSA or site ownership offer. PG&E’s decision to reject the Offer for non-conformity to the Solicitation Protocol was fair and reasonable, in Arroyo’s opinion.

The other rejected Offer had a variety of issues that needed clarification. In mid-May PG&E sent the Participant a deficiency letter identifying specific information that was missing from the initial Offer; the Participant responded with those documents. PG&E followed up with an e-mail communication requesting additional specific information to establish how the Offer would qualify as an ERR. The Participant provided some information but not other requested data. The Participant did not modify its proposed pricing structure, which did not offer fixed energy price for each contract year. PG&E subsequently rejected the Offer for non-conformity.

Awkwardly, two Offers were delivered to PG&E’s offices on May 13, the day after the deadline for Participants to submit Offers. The May 12 deadline was clearly stated in the Solicitation Protocol. In Arroyo’s opinion, PG&E could have rejected these two Offers for non-conformity. After some discussion, it was observed that the Participants may have misinterpreted the language in the Protocol: “Deadline for Participants to submit Offer(s)”<sup>30</sup> The intent was for the Offers to be received by 5 p.m. on May 12.<sup>31</sup> However, one possible interpretation would be to read the text of the solicitation as allowing Participants to

---

<sup>29</sup> “Renewables Portfolio Standard, 2008 Solicitation Protocol, Pacific Gas and Electric Company, February 29, 2008”, page 23

<sup>30</sup> “Renewables Portfolio Standard, 2008 Solicitation Protocol, Pacific Gas and Electric Company, February 29, 2008”, page 4

<sup>31</sup> For example, the presentation used in the March 17, 2008 bidders’ conference explicitly stated the 5 p.m. deadline

“submit” their Offers to a delivery service on May 12 with the expectation that they would physically arrive at PG&E’s offices on May 13.

The PG&E steering committee, with input from the PRG, decided to accept the late Offers. In the actual evaluation on the valuation and non-valuation criteria, these 2 Offers failed to be selected for the short list, so the issue of whether short-listing a late-arriving Offer was unfair to other Participants who delivered their Offers on time is moot. Going forward to future solicitations PG&E will use clearer language in specifying the deadline within its solicitation protocols.

---

#### G. ANALYSIS OF PG&E’S SHORT LIST RESULTS

---

While the PG&E evaluation committee and Arroyo Seco Consulting did disagree on some specific decisions in the administration of the evaluation process, most of these minor issues were quickly resolved in the course of discussion. Issues underlying the disagreements included:

- Arroyo disagreed with the PG&E team’s initial assignments of some Offers to local nodal areas or to pricing zones. After discussion, these disagreements were resolved, either through changes to the assignments, agreement that the assignments were correct, or agreement that which assignment is appropriate remains unclear given limited available Offer information.
- Arroyo expressed a concern about using an after-tax, approved utility WACC as the discount rate for net benefit of Offers<sup>32</sup> as opposed to a pre-tax, IPP WACC. This disagreement was not resolved and Arroyo recommends the future use of a pre-tax, IPP WACC, such as the one used in the CEC’s MPR analysis for a proxy plant built by independent power developers. While using a higher pre-tax IPP WACC may have resulted in a slightly different valuation ranking of Offers, it seems unlikely that a short list built from that different ranking would differ materially from PG&E’s final list using an after-tax utility WACC, because of the important role that considerations of supplier concentration and project viability played in making the short list.
- Arroyo raised an objection to elevating one low-valued Offer to the short list, based on the inconsistent treatment of competing Offers that were not selected. This was resolved by PG&E replacing it with a different Offer, so that the logic for including that low-valued Offer was fairly and consistently applied to evaluate competitors’ Offers as well.
- Arroyo expressed concern about the market valuation of one Offer for which substantial capacity value was assigned; the cover letter from the Participant stated that the Offer did not include any resource adequacy value. Also, Arroyo questioned the Time-Of-Delivery factor applied to the Offer, which seemed low

---

<sup>32</sup> Specifically, as-available, baseload, or peaking Offers valued against a forward curve in nominal dollars and discounted to 2009 dollars

for a project delivering in on-peak hours. The PG&E team deleted the RA value and identified an error in the Participant's submittal that had resulted in an incorrect TOD factor.

- Arroyo questioned the selection of which Offers were assigned to merit a higher capacity value based on their contribution to local resource adequacy, as opposed to general resource adequacy. After some discussion and review, the PG&E team reassigned the designation of local RA contributors and re-ranked the valuation list.

Comparing results of PG&E's model and the independent model was useful in surfacing issues for discussion. Where large variances between the models were observed, further investigation led to discussion of inputs and of how the methodology was administered. These variances were generally resolved and eliminated through such dialogue. Figure 1 shows a comparison of the ranking of the top Offers between the two models; the diagonal line shows where data points would fall if the two models agreed exactly on valuation rankings. The fit between model rankings is imperfect, but is fairly good considering how simplified the IE model is; the comparison is useful for identifying points of disagreement.

Figure 1



Despite these minor disagreements and concerns, most of which were resolved, Arroyo Seco Consulting's overall judgment is that PG&E's administration of its protocols to arrive at a short list submitted to the CPUC on July 15, 2008 was fair, unbiased, consistent, and reasonable. The CPUC decision that conditionally approved the 2008 renewable solicitation provided PG&E with latitude to exercise its subjective judgment in making decisions, within the bounds of the Solicitation Protocol.

Some of these decisions, including specifically the choice to include in the short list an Offer that was ranked quite low in market valuation on the basis that its project viability was scored quite high, fall into the category of choices that Arroyo would have not made if it were administering the solicitation. But even that short list decision was made using logic that was consistently applied to all Offers. No competing Offer was rejected that had both higher valuation and higher viability score than this one project.

Based on this sort of test of consistent treatment of Offers in deciding which to reject and which to elevate from the lower tiers of the valuation ranking, the Offer selection process through July 15, 2008 was fair and consistent, and reflected the strong emphasis PG&E placed on project viability.

## 4. ADEQUACY OF OUTREACH TO PARTICIPANTS AND ROBUSTNESS OF THE SOLICITATION

In its 2008 renewable solicitation, PG&E undertook to meet a goal of procuring 1 to 2% of its retail load through Offers that lead to successfully negotiated contracts. This section discusses an assessment of the degree to which PG&E adequately conducted outreach activities to drum up sufficient participation in the solicitation, and the degree to which the solicitation may be judged robust enough to be competitive.

---

### A. PRINCIPLES TO ASSESS ADEQUACY OF OUTREACH

---

Here are some considerations used to evaluate whether PG&E performed successfully in reaching out to the community of renewable power developers:

- How many individuals were contacted?
- To what extent were these contacts in companies that develop renewable power?
- Was a diverse set of renewable technologies covered in the contacts, or was the outreach excessively focused on one or two technologies?
- How widely was information about the solicitation disseminated?
- Was information about the solicitation readily available to the public?
- To what extent did Participants appear well-informed about the details of the solicitation?

---

### B. PRINCIPLES TO ASSESS ROBUSTNESS OF THE SOLICITATION

---

Here are some considerations used to evaluate whether PG&E performed successfully in conducting a robust solicitation:

- Was the response to the solicitation large enough for PG&E to reasonably expect to achieve its goal of procuring 1 – 2% of retail load, given the likely attrition of Offers between short list and actual production, without having to accept a majority of Offers?

- Was the response to the solicitation diverse with respect to technologies?
- Was the distribution of responses tilted towards projects that were assessed as generally viable, or was there an excess of less viable Offers?

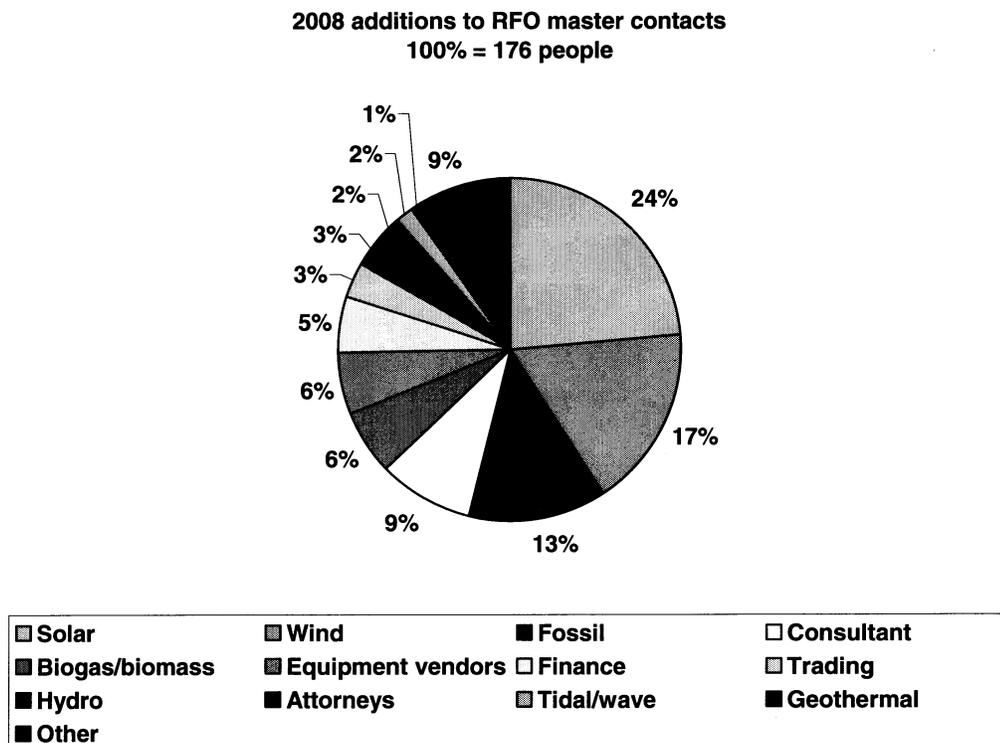
---

**C. ADEQUACY OF OUTREACH**

---

By the beginning of May 2008, PG&E had compiled a contact list for use in publicizing its RFOs, totaling about 1,022 individuals with unique names and e-mail addresses. Of these, about 176 contacts were clearly identified as having been added in 2008, the period running up to the release of the RPS RFO and through its submittal deadline. When analyzed to attempt to assess which industry the individual contacts represented, the largest segment was made up of individuals in the solar power sector, followed by wind power and fossil-fueled generation. Figure 2 displays the estimated shares by industry sector of these 2008 additions. Note that this contact list is employed not just for renewable solicitations but for all-source RFOs as well.

Figure 2



Inspection of the overall contact list reveals that many of the major developers of renewable energy in North America are included, particularly among solar and wind developers. It cannot be determined from inspecting the contact list whether PG&E proactively sought to add these individuals to the list or whether PG&E reacted to contacts coming to the utility and requesting information about procurement opportunities.

PG&E's press release announcing the issuance of the 2008 RPS RFO was picked up and reported broadly in the electric power trade press, including publications such as:

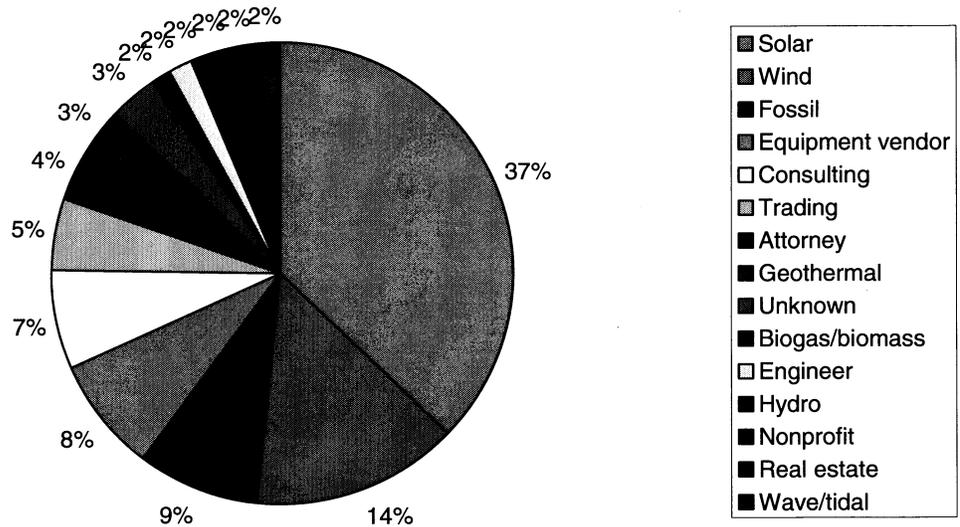
- Platts Power Markets Week
- Global Power Report
- Megawatt Daily
- Power Market Today
- Targeted News Service
- NewsTrak Daily
- Platts Commodity News
- Dow Jones News Service
- PR Newswire

In addition, the detailed solicitation protocol and its attachments, the schedule, and other RFO informational items were posted on PG&E's website for public access.

Another indicator of the adequacy of the outreach for the RFO was the response of attendees for the bidders' conference. Figure 3 shows the breakdown of individuals who registered for the conference (there is no means to check who actually attended) by the sector of the industry their employer represents. A turnout of 126 individuals is a healthy response. As with the contact list's 2008 additions, the largest share of attendees represented the solar and wind sectors of the renewable industries. While several of the attendees appeared to be individuals representing themselves only, or employees of small consulting firms or non-profit organizations, several other attendees represented leading manufacturers of solar and wind generation hardware and developers of wind and geothermal power projects.

Figure 3

Breakdown of attendees for conference  
100% = 126



Inspection of the written Offers submitted for the RFO suggests that, while many Participants (particularly those who attended the bidders' workshop or who had participated in prior RPS RFOs) had developed a strong overall comprehension of what information to submit in order to provide a proposal that conformed to the Solicitation Protocol's requirements, many had substantial weaknesses. Two common themes emerged in deficiencies: (1) Participants failed to fill in the fields on the Proposal Project Description for credit information such as their proposed amounts of Project Development Security and Delivery Term Security, and (2) Participants failed to fill in the field for energy pricing without Production Tax Credit (PTC) or 30% Investment Tax Credit (ITC), or they left pricing without PTC and ITC the same as pricing with PTC and ITC. These errors or omissions had to be corrected by sending Participants deficiency letters.

The bidders' workshop presentation dealt with how to fill in these fields in some detail, so it is hard to fault PG&E for insufficient outreach on these specific points. No Offer was disqualified for an initial failure to fill in these fields properly, and participants generally addressed the defects following issuance of the deficiency letters. A recommendation for future solicitations would be to revise the Instructions page in Attachment D to the Offer to clarify exactly what fields on credit information and energy pricing without PTC and ITC must be filled in, with what information, to achieve compliance.

Arroyo Seco Consulting's conclusion is that PG&E conducted substantial outreach to the community of renewable power developers in North America. The number of individuals contacted, the breadth of distribution of the news of the solicitation in the electric power trade press, and the substantial participation in the bidders' conference suggest that overall outreach was strong. There may be room for future improvement in one specific area, discussed below.

---

**D. ROBUSTNESS OF SOLICITATION**

---

The Offers PG&E received total a large volume of projected generation and capacity. The offered volume totaled a substantial fraction of PG&E's expected retail load, and should provide plenty of opportunity for PG&E to negotiate, contract for, and procure 1 to 2% of retail load, taking into account that a number of the Participants chose exclusive negotiation with other utilities instead of PG&E, some projects are likely to fall out of negotiation, and some projects that are contracted may yet fail to be completed and enter commercial operation. The risks of failure may be high in this year's solicitation if only because many of the submitted proposals are for large solar facilities, larger than any actually constructed in the U.S. in the last decade, which may carry substantial execution risk. However, the ratio of offered volume to targeted procurement volume reflects a healthy, robust response, suggesting a strong likelihood that the target will be achieved at some point in time.

The Offers for solar generation were disproportionately represented in the total compared to solar power's portion of 2008 outreach contacts and bidders' conference attendees. This may be a comment on the attractiveness of the solar resource in the southern part of California and the increasing degree to which photovoltaic, solar trough, and solar tower technologies are expected to capture scale economies.

The representation of wind generation in the Offers is roughly the same as its share of the 2008 additions to the PG&E RFO contact list and attendance at the bidders' workshop. The same is true for biomass/biogas and geothermal generation. However, since the contact list and the workshop attendees include large numbers of attorneys, consultants, equipment manufacturers, wholesale power marketers and traders, and farmers or other real estate owners, who are less likely to directly propose actual generation projects, the representation of wind, biomass, and geothermal Offers is rather lower than their representation among actual developers in the contact list additions and workshop attendees.

This may reflect the increased attractiveness of wind power development in other jurisdictions and markets in the U.S. with the more recent implementation of RPS standards elsewhere than California. Or it may reflect the uncertain status of federal tax credit renewal, the scarcity of wind turbines, the relatively high penetration of wind development in California, the relative challenge of the permitting process in California vs. other states, and/or the burden and delay of obtaining transmission access for new California wind projects. This may also represent the technological challenges and risks of developing new geothermal resources and the burden of obtaining transmission access to the CAISO grid from regions where geothermal resources are most attractive.

Without directly obtaining feedback from developers who did not submit Offers (such as those developers who submitted Notices of Intent to participate but chose not to offer) it is hard to know what factors may be limiting the response to the RFO from these other technologies. Arroyo recommends that PG&E make follow-up contacts to the geothermal, biomass, and wind development companies that submitted Notices of Intent but did not make Offers, in order to obtain feedback on their decisions to pass on this solicitation, and possibly to identify how to alleviate impediments to their making Offers in the future.

Executive Order S-06-06 states a goal for California to obtain 20% of its renewable electric generation from biomass. In PG&E's case, the share of renewable power currently procured from biomass generation is already well above that. However, as PG&E continues to succeed in negotiating large procurement contracts for renewable power using other technologies, a need may eventually emerge to increase the share of new procurement represented by biomass. Individuals associated with biomass and biogas generation made up about 6% of the contacts added to PG&E's list in 2008, and biomass and biogas power made up roughly 4% of the production volume of the Offers (not counting hybrid projects utilizing both biomass and other technologies). PG&E may have an opportunity to increase the extent to which it focuses a portion of its outreach to biomass power developers in its future RPS solicitations, along with the company's other innovative programs to capture biogas for commercial use.

---

**E. SOLICITING FEEDBACK FROM PARTICIPANTS**

---

After arriving at a final short list, PG&E sent e-mails to Participants whose Offers were not selected for the short list. Each communication included an offer to engage in a discussion of that outcome, if desired. About half of these Participants expressed an interest in such a follow-up discussion.

In a few cases, Participants who were notified that their Offers were included in the short list responded by withdrawing the Offers. In these cases PG&E proactively contacted the Participants to seek to find out the reasons for withdrawal from the solicitation. Arroyo concluded that PG&E's efforts to seek adequate feedback from all Participants about the RFO process were thorough.

## 5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

This chapter details an independent review of the extent to which PG&E's negotiations regarding Desert Sunlight should be considered to have been fair. A more detailed narrative of points of the negotiation and how its fairness can be judged is provided in the confidential appendix to this report.

---

### A. PRINCIPLES FOR EVALUATING THE FAIRNESS OF NEGOTIATIONS

---

Arroyo took into account several principles to evaluate the degree of fairness with which First Solar was treated in negotiations regarding the Desert Sunlight Offer.

- Were Participants treated fairly and consistently by PG&E during negotiations? Were all Participants given equitable opportunities to advance their Offers towards final PPAs? Were individual Participants given unique opportunities to move their Offers forward or concessions to improve their contracts' commercial value, opportunities not provided to others?
- Was the distribution of risk between Seller and Buyer in the PPAs distributed equitably across PPAs? Did PG&E's ratepayers take on a materially disproportionate share of risks in some contracts and not others? Were individual Participants given opportunities to shift their commercial risks towards ratepayers, opportunities that were not provided to others?
- Was non-public information provided by PG&E shared fairly with all shortlisted Participants? Were individual Participants uniquely given information that advantaged them in securing contracts or realizing commercial value from those contracts?
- If any individual Participant was given preferential treatment by PG&E in the course of negotiations, is there evidence that other Participants were disadvantaged by that treatment? Were other Offers of comparable value to ratepayers assigned materially worse outcomes?

---

### B. FAIRNESS OF NEGOTIATIONS BETWEEN OPTISOLAR, AND LATER FIRST SOLAR, AND PG&E REGARDING DESERT SUNLIGHT

---

To a large extent PG&E's negotiations regarding Desert Sunlight were handled in a manner consistent with the treatment of other Participants, with the routine give-and-take of detailed revisions in disputed contract language. More specific information on contract issues resolved in the negotiations regarding the Desert Sunlight PPA is provided in the confidential appendix to this report.

PG&E has generally provided fair opportunities for Participants to seek modifications to specific elements of its PPA terms. When PG&E and one Participant negotiate specific modifications to the standard pro forma language provided in the 2008 RPS RFO solicitation protocol, PG&E is then open to analogous modifications with other Participants. PG&E does not generally volunteer the opportunity to negotiate such modifications, in order to maintain the general level of risk borne by ratepayers. However, PG&E's transactors have to date handled these modifications or concessions fairly, and unique concessions offered to one Participant have not been unduly withheld from others that actively sought such concessions. It is evident that PG&E's transactors as a group have coordinated their activities closely regarding how individual negotiations have yielded specific modifications, in order to avert unfair treatment.

PG&E granted Desert Sunlight specific concessions in contract terms that were similar or analogous to those granted to other counterparties. To some extent these concessions that represented variances from the terms of PG&E's 2008 Form Agreement were incorporated into the 2009 Form Agreement and made available to all Participants in the later solicitation.

One specific contract provision negotiated between the two parties leaves the overall cost of the renewable power from Desert Sunlight to PG&E ratepayers somewhat uncertain, within a specified, limited range, until actual outcomes are determined prior to the commercial operation date. The effect of this provision is to shift certain risks to ratepayers. Arroyo does not regard this as a major concession, and it has been provided in the past to other counterparties. PG&E has incorporated terms that limit and narrow the potential impact of the provision to ratepayers. There is no evidence that other Participants were disadvantaged in their own negotiations with PG&E by this contract provision granted to the Desert Sunlight project company. Both PG&E and Arroyo have assumed a worst-case outcome for this provision when performing a valuation of the PPA in order to evaluate the contract conservatively.

PG&E granted two variances in contract terms from its Form Agreement to Desert Sunlight that Arroyo believes go beyond what has been provided to other counterparties. One of these variances shifts certain risks to ratepayers, but Arroyo does not expect it to shift any actual direct costs from project to ratepayers. The other variance provides specific payments to Desert Sunlight for a rather small portion of project output, payments that may or may not be greater than has been granted to other parties, depending on outcomes. Arroyo cannot at this time conclude whether this provision is competitive or not with the treatment of other counterparties. Arroyo cannot identify specifically how granting the variance to Desert Sunlight has harmed other developers.

Arroyo's opinion is that the project-specific negotiations between PG&E and OptiSolar, and later First Solar for the Desert Sunlight contract were fair overall and that the contract terms are reasonable overall, while expressing minor reservations about the two variances from the Form Agreement that are described in more detail in the confidential appendix.

## 6. MERIT FOR CPUC APPROVAL

This chapter provides an independent review of the merits of the Desert Sunlight contract against the high-level criteria stated in PG&E's solicitation protocol.

---

### A. CONTRACT SUMMARY

---

PG&E and Desert Sunlight Holdings, LLC executed a complete contract for the proposed project's output on February 24, 2010. The contract is for a 25-year term, with a contract capacity of 300 MW. A contractually guaranteed commercial operation date is set for July 1, 2015, barring any excused delays. Annual contract energy quantities are expected to average about 620 GWh over the life of the contract. The Desert Sunlight project will be located in Riverside County, in mostly undisturbed desert land administered by the Bureau of Land Management, about eight miles north of the unincorporated town of Desert Center, and in close proximity on the west, north, and east to Joshua Tree National Park.

---

### B. NARRATIVE OF EVALUATION CRITERIA AND RANKING

---

The template for independent evaluators provided by the Energy Division calls for a narrative of the merits of the proposed project on the major categories of contract price, portfolio fit, and project viability. More specific details are provided in the confidential appendix to this report.

#### CONTRACT PRICE AND MARKET VALUATION

The Desert Sunlight base contract price, as delivered to the CAISO, is not less than the adopted 2009 Market Price Referent for 25-year PPAs that begin in 2015.<sup>33</sup>

Using the IE's simple valuation model, the original Desert Sunlight Offer ranked higher in valuation than most other original Offers received in the 2008 RPS solicitation, and Arroyo concurred with PG&E's selection of the Offer for its short list. In the course of negotiations, the terms of the proposal changed materially from the original offer submitted in May 2008 to the execution in February 2010.

The final executed version of the Desert Sunlight contract ranks higher in valuation than most competing alternatives currently available to PG&E (such as bilateral proposals and short-listed offers from the 2009 or prior solicitations), using either a modified version of the utility's LCBF methodology or Arroyo's simplified but independent methodology. It also ranks higher in value than most remaining short-listed Offers from the 2008 RPS RFO that are still in discussions. The contract price of the PPA ranks within the mid-range of competing alternatives.

---

<sup>33</sup> California Public Utilities Commission, Resolution E-4298, December 17, 2009, page 2

Arroyo's opinion based on the ranking of the Desert Sunlight contract in these comparisons is that the net valuation and price of the contract are likely to be moderate. A more detailed discussion of the rankings and comparisons is presented in the confidential appendix to this report.

### PORTFOLIO FIT

Arroyo ranks the Desert Sunlight facility as moderate in portfolio fit, given the modestly good correlation of its expected output with PG&E customer needs on a seasonal and time-of-day basis, the relatively good day-ahead predictability of output, and taking into account the lack of dispatchability of the projects' generation.

### PROJECT VIABILITY

A detailed discussion of factors that suggest a moderate likelihood of bringing the Desert Sunlight project into commercial operation at the proposed commercial operation date is addressed in the confidential appendix to this report. Positive factors include

- Attractive resource quality at the project site, with high insolation evaluated by an third-party consultant;
- A project developer that is a vertically integrated manufacturer of thin-film solar photovoltaic modules, that has access to an expanding manufacturing base and is unlikely to experience supply constraints for panels; and
- A project that is well-advanced in the CAISO process towards securing an interconnection agreement.

On the other hand, a variety of risks pose the potential for delay in achieving commercial operation, or for a potential shortfall in achieving full expected benefits for PG&E ratepayers. These include

- The fact that no operating solar generation facility using First Solar's cadmium-telluride thin-film technology has ever been developed, built, brought into operation, and financed at the very large scale that is proposed for the overall Desert Sunlight project;
- The risks associated with obtaining permits to construct and operate a generation plant on generally undisturbed desert land that provides habitat to a threatened species and is quite near to a national park, and
- Project schedule risks associated with an interconnection to an as-yet-unbuilt proposed 500-kV substation.

On balance, in Arroyo's opinion, the Desert Sunlight facility's project viability is moderate. Arroyo independently scored the project using the Energy Division's final version of the Project Viability Calculator, and concluded its project viability score falls near

the median of competing alternative projects available to PG&E that the IE has recently scored.

---

**C. DISCUSSION OF MERIT FOR APPROVAL**

---

Based on an opinion that the Desert Sunlight contract ranks as moderate for net valuation and price, moderate for portfolio fit, and moderate for project viability, Arroyo agrees with PG&E that the PPA merits Commission approval.

## 7. CONCLUSIONS

Arroyo Seco Consulting concludes that the methodology that PG&E employed in evaluating and selecting Offers for its initial short list for the 2008 RPS RFO was fair and reasonable. The administration of the methodology was fair and reasonable. Outreach efforts conducting by the utility were adequate and the solicitation was robust.

In the course of project-specific negotiations with OptiSolar, and later First Solar, PG&E provided several concessions in contractual terms to Desert Sunlight relative to its Form Agreement, but these were generally concessions that the utility has in the past been willing to provide to other counterparties. PG&E and First Solar also negotiated a specific provision in the Desert Sunlight contract that exposes ratepayers to a modest and limited degree of uncertainty regarding cost until later in the development process, and shifts a degree of risk to ratepayers from the developer.

PG&E provided two variances from its Form Agreement that Arroyo believes go beyond what has been granted to other counterparties, but the IE cannot identify how these have harmed other developers. For one of these contract provisions, Arroyo cannot identify what if any specific, direct costs are shifted to ratepayers to the project; for the other variance, Arroyo cannot at this time identify how payments to the project for a small portion of its output will compare to such payments to other counterparties. Consequently, Arroyo's judgment is that the overall treatment of Desert Sunlight was fair to other RFO participants and to PG&E's ratepayers, with minor reservations about the two contract provisions that vary from the Form Agreement.

In Arroyo's opinion, the proposed Desert Sunlight contract will rank as moderate in market valuation and price, moderate in portfolio fit, and moderate in project viability. On that basis, Arroyo concurs with PG&E that this contract merits CPUC approval.

**PG&E Gas and Electric  
Advice Filing List  
General Order 96-B, Section IV**

|  |   |  |
|--|---|--|
| Alcantar & Kahl                          | Defense Energy Support Center               | Northern California Power Association                      |
| Ameresco                                 | Department of Water Resources               | Occidental Energy Marketing, Inc.                          |
| Anderson & Poole                         | Department of the Army                      | OnGrid Solar   |
| Arizona Public Service Company           | Dept of General Services                    | Praxair  |
| BART                                     | Division of Business Advisory Services      | R. W. Beck & Associates                                    |
| BP Energy Company                        | Douglass & Liddell                          | RCS, Inc.  |
| Barkovich & Yap, Inc.                    | Downey & Brand                              | Recon Research   |
| Bartle Wells Associates                  | Duke Energy                                 | SCD Energy Solutions                                       |
| Boston Properties                        | Dutcher, John                               | SCE  |
| C & H Sugar Co.                          | Economic Sciences Corporation               | SMUD   |
| CA Bldg Industry Association             | Ellison Schneider & Harris LLP              | SPURR  |
| CAISO                                    | Foster Farms                                | Santa Fe Jets  |
| CLECA Law Office                         | G. A. Krause & Assoc.                       | Seattle City Light   |
| CSC Energy Services                      | GLJ Publications                            | Sempra Utilities   |
|  | Goodin, MacBride, Squeri, Schlotz & Ritchie | Sierra Pacific Power Company                               |
| California Cotton Ginners & Growers Assn | Green Power Institute                       | Silicon Valley Power                                       |
| California Energy Commission             | Hanna & Morton                              | Silo Energy LLC  |
| California League of Food Processors     | Hitachi                                     | Southern California Edison Company                         |
| California Public Utilities Commission   | International Power Technology              | Sunshine Design  |
| Calpine                                  | Intestate Gas Services, Inc.                | Sutherland, Asbill & Brennan                               |
| Cameron McKenna                          | Los Angeles Dept of Water & Power           | Tabors Caramanis & Associates                              |
| Cardinal Cogen                           | Luce, Forward, Hamilton & Scripps LLP       | Tecogen, Inc.  |
| Casner, Steve                            | MBMC, Inc.                                  | Tiger Natural Gas, Inc.                                    |
| Chamberlain, Eric                        | MRW & Associates                            | Tioga Energy   |
| Chris, King                              | Manatt Phelps Phillips                      | TransCanada  |
| City of Glendale                         | McKenzie & Associates                       | Turlock Irrigation District                                |
| City of Palo Alto                        | Merced Irrigation District                  | U S Borax, Inc.  |
| Clean Energy Fuels                       | Mirant                                      | United Cogen   |
| Coast Economic Consulting                | Modesto Irrigation District                 | Utility Cost Management                                    |
| Commerce Energy                          | Morgan Stanley                              | Utility Specialists  |
| Commercial Energy                        | Morrison & Foerster                         | Verizon  |
| Consumer Federation of California        | NRG West                                    | Wellhead Electric Company                                  |
| Crossborder Energy                       | New United Motor Mfg., Inc.                 | Western Manufactured Housing Communities Association (WMA) |
|  |   | eMeter Corporation   |
| Davis Wright Tremaine LLP                | Norris & Wong Associates                    |  |
| Day Carter Murphy                        | North Coast SolarResources                  |  |