

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3298



November 8, 2011

Advice Letters 3759-E and 3759-E-A

Brian K. Cherry
Vice President, Regulation and Rates
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, CA 94177

**Subject: Power Purchase Agreement for Procurement of Renewable Energy
Resources between North Star Solar, LLC, and PG&E Company**

Dear Mr. Cherry:

Advice Letters 3759-E and 3759-E-A are effective October 20, 2011 per Resolution E-4436.

Sincerely,

A handwritten signature in dark ink that reads "Edward F. Randolph".

Edward F. Randolph, Director
Energy Division



November 12, 2010

Advice 3759-E
(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

**Subject: Power Purchase Agreement for Procurement of Renewable Energy
Resources Between North Star Solar, LLC, and Pacific Gas and
Electric Company**

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”) between North Star Solar, LLC (“North Star Solar”), and PG&E. The North Star Solar project (“Project”) is being developed by NorthLight Power (“NorthLight”), a joint venture development company between Summit Power Solar, LLC, an affiliate of the Summit Power Group, Inc. (“Summit”), and REC Systems, Inc., an affiliate of Renewable Energy Corporation ASA (“REC”).

The PPA is for Renewables Portfolio Standard (“RPS”)-eligible energy from a 60 megawatt (“MW”) solar photovoltaic project to be located outside the town of Mendota, California, in Fresno County. PG&E requests that the Commission issue a resolution no later than May 19, 2011, approving the PPA and containing the findings as set forth in Section VI below.

B. Subject of the Advice Letter

The Commission’s approval of the North Star Solar PPA will authorize PG&E to accept deliveries of RPS-eligible energy from a California solar photovoltaic (“PV”) generator within PG&E’s service territory.

The Commission should approve the North Star Solar PPA. The “least-cost, best-fit” (“LCBF”) analysis indicates that this PPA meets the needs of PG&E’s portfolio. As discussed above, the Project is located within PG&E’s service territory in a known solar resource area and is being developed by a viable counterparty. Summit has developed or been involved in the development of over 6,000 MW of wind and natural gas power

plants, and REC is one of the premiere crystalline solar PV manufacturers in the world, with 550 MW of commercially operational panels globally. Moreover, the counterparty has site control for the Project, and the Project is not contingent upon tax incentives. Not only is the project highly viable and competitively priced but the Project also has an expected Commercial Operation Date (“COD”) of June 30, 2013, and will deliver directly to the California Independent System Operator (“CAISO”)-controlled grid for 20 years. As a result, the Project will contribute to PG&E’s 20 percent-by-2010 RPS goals through flexible compliance.

The PPA resulted from the 2009 RPS Solicitation. Consistent with the protocol used for review of RPS contracts resulting from the 2009 RPS Solicitation, PG&E has included Confidential Appendices A through G and public Appendix H, which provide further details demonstrating the reasonableness of the PPA. As discussed below, PG&E requests confidential treatment for the information contained in Appendices A through G.

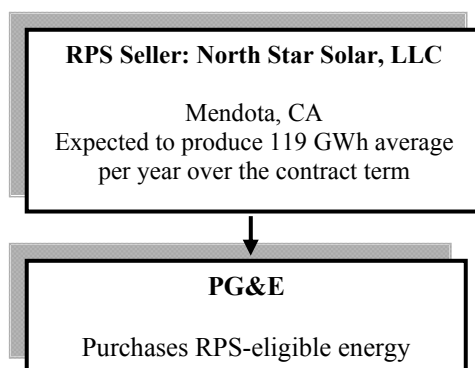
C. General Project(s) Description

Project Name	North Star Solar, LLC
Technology	As-available, solar photovoltaic power
Capacity (MW)	60 MW
Capacity Factor	Approximately 22%
Expected Generation (GWh/Year)	119 GWh
Initial Commercial Operational Date	June 30, 2013
Date Contract Delivery Term Begins	June 30, 2013 (COD)
Delivery Term (Years)	20 years
Vintage (New/Existing/Repower)	New
Location (City and State)	Mendota, CA
Control Area (e.g., California Independent System Operator (“CAISO”), Bonneville Power Administration (“BPA”))	CAISO
Nearest Competitive Renewable Energy Zone (CREZ), as Identified by the Renewable Energy Transmission Initiative (RETI)	Westlands
Type of Cooling, If Applicable	Not applicable
Price relative to Market Price Referent (MPR)	Price is above the applicable 2009 MPR for a project coming online in 2013. Price information is discussed in further detail in Confidential Appendix D.

D. General Deal Structure

The Project is a 60 MW solar PV project. The Project will interconnect to the CAISO. PG&E will be the scheduling coordinator. There is no firming and shaping associated with this deal.

Figure 1: PPA Delivery Structure



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 directed the California Air Resources Board to adopt a regulation consistent with this 33 percent target. On September 23, 2010, the California Air Resources Board approved its 33 percent renewable electricity standard ("RES").

The Project is scheduled to become operational on June 30, 2013. The PPA will contribute to maintaining PG&E's 20 percent RPS goal and will also contribute to the California Air Resources Board's recently adopted 33 percent RES.

F. Confidentiality

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 Decision (“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 Summary

Appendix E – Comparison of Contract With Utility’s 2009 Pro Forma Power Purchase Agreement

Appendix F – Power Purchase Agreement

Appendix G – Project’s Contribution Toward RPS Goals

Public Attachment:

Appendix H – Independent Evaluator Report (Public)

II. CONSISTENCY WITH COMMISSION DECISIONS

A. Consistency with PG&E’s Adopted RPS Procurement Plan

PG&E’s 2009 Renewable Procurement Plan (“2009 Plan”) was conditionally approved in D.09-06-018 on June 4, 2009. As required by statute, the 2009 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.¹

¹ Pub. Util. Code § 399.14(a)(3).

The goal of PG&E's 2009 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 of approximately 119 GWh per year for a term of 20 years, the PPA meets the criteria for the renewables procurement contained in the 2009 Plan. The PPA provides relatively near-term deliveries, which is especially valuable to PG&E, and it will also contribute to PG&E's longer-term RPS goals.

The PPA is also consistent with PG&E's approved 2009 Plan because its evaluation was consistent with the review protocol in the 2009 RPS Solicitation, including portfolio fit and viability.

B. Consistency with Commission Guidelines for Bilateral Contracting

The PPA is a result of the 2009 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.² The LCBF decision directs the utilities to use certain criteria in their bid ranking³ 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 2009 RPS Solicitation and with bilaterals currently being offered to PG&E. The general finding is that this project is reasonably priced and highly viable. A more detailed discussion of PG&E's evaluation of the PPA is provided in Confidential Appendices A and D.

² Pub. Util. Code § 399.14(a)(2)(B).

³ D.04-07-029.

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.

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.

The proposed Project is expected to offer deliveries starting on June 30, 2013, and to continue for 20 years, which will contribute toward PG&E’s RPS goals and will provide additional solar generation to PG&E’s portfolio, resulting in a moderate portfolio fit. Further information on the Project’s portfolio fit is discussed in Confidential Appendix A.

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 be considered when determining the project’s value. Consistent with Commission decisions, PG&E assigned a transmission adder to the Project based on the potential transmission congestion, the associated proxy transmission network upgrades, and the associated capital costs that may be needed to accommodate delivery. Further transmission details are discussed in Confidential Appendices A and D.

4. Consistent Application of Time of Delivery (“TOD”) Factors

Application of 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.

The Project will employ approximately 200 employees during construction of the Project, and local labor will be utilized to the greatest extent possible. During commercial operation, one to two full-time employees will be permanently employed. Further details about qualitative factors are provided in Confidential Appendix A, including the results of the Project Viability Assessment.

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 and the non-modifiable terms related to Tradable Renewable Energy Credits (“TREC”) were finalized in D.10-03-021.

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 and Appendix C of D.10-03-021. These terms may be found on the following pages of the PPA:

Non-Modifiable Term	PPA Section No.	PPA Page No.
STC 1: CPUC Approval	1.41	4
STC 2: Renewable Energy Credits (“RECs”) and Green Attributes		
• Definition of Green Attributes	1.101	10 - 11
• Conveyance of Green Attributes	3.2	28
STC 6: Eligibility	10.2(b)	51
STC 17: Applicable Law	10.12	59
STC REC-1 Transfer of Renewable Energy credits	10.2(b)	51 - 52
STC REC-2 Tracking of RECs in WREGIS	3.1(k)(viii)	25

The Project will interconnect directly with the CAISO. Therefore, the PPA does not include the non-modifiable terms intended for “REC-only contracts.”

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. Comparisons of the modifiable terms in the PPA against the modifiable 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 its ultimate effect on utility customers. PG&E submits that the PPA protects the interests of its customers while achieving the Commission’s goal of increasing procurement from eligible renewable resources.

E. Consistency With Unbundled Renewable Energy Credit Transactions

The PPA is for the purchase of bundled RPS-eligible energy where the Project is interconnected with to the CAISO and therefore does not involve the purchase of unbundled RECs.

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 towards PG&E’s procurement obligation under D.07-05-028. PG&E expects that, in 2010, it will be in compliance with the minimum quantity 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 Referent (“MPR”)

The actual price under the PPA is confidential, market sensitive information. PG&E will indicate that the TOD-adjusted price of the PPA is above the applicable 20-year 2009 TOD-adjusted MPR with a 2013 COD, as adopted in Resolution E-4298 on December 17, 2009. PG&E compared the price and net market value of the Project to offers

resulting from the 2009 RPS Solicitation, recently executed contracts and other bilateral offers currently being made to PG&E, as detailed in Confidential Appendices A and D.

I. Above-Market Funds (“AMF”)

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 AMF, PG&E was notified by the CPUC on May 28, 2009, that PG&E had exhausted its portion of the AMF available for contract payments that are above the MPR. Since exhausting its AMF, 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 (“EPS”)

A greenhouse gas Emissions Performance Standard (“EPS”) was established by 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.

To implement SB 1368, in D.07-01-039, the Commission adopted an 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 covered procurement subject to the EPS because the generating facility has a forecast annualized capacity factor of less than 60 percent 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.

K. Procurement Review Group Participation

The Procurement Review Group (“PRG”) for PG&E includes the Commission’s Energy Division and Division of Ratepayer Advocates (DRA”), the Utility Reform Network (“TURN”), the California Utility Employees (“CUE”), Department of Water Resources (“DWR”), Union of Concerned Scientists (“UCS”), and Jan Reid, as a PG&E ratepayer.

On October 21, 2009, this transaction was presented to the PRG as part of the shortlist offer from the 2009 RPS Solicitation. The Project was subsequently presented to the

PRG as part of the regular RPS update on April 9, 2010; June 24, 2010; August 13, 2010; and October 8, 2010, as a priority transaction. No objections were raised by members of the PRG. PG&E further addresses PRG feedback in Confidential Appendix A.

L. Independent Evaluator

The Independent Evaluator (“IE”) for this PPA is Lewis Hashimoto of Arroyo Seco Consulting. The IE participated in the negotiation’s material discussions and communications, evaluated the PPA, and concluded that the PPA merits CPUC approval. Any findings of the IE to the PRG regarding the application solicitation, the project bid, and/or contract negotiations are contained in Confidential Appendix C and Public Appendix H.

III. PROJECT DEVELOPMENT STATUS

A. Company/Development Team

As stated above, the Project is being developed by NorthLight, a joint venture development company that is a subsidiary of the joint venture between Summit and REC. Summit has led or has had significant involvement in the successful development of over 6,000 MW of power projects representing over \$7 billion in investment. Further, it has several thousand megawatts of additional generation currently in development or under construction. Summit’s development experience includes 6,000 MW of combined and simple cycle natural gas generation, including one in California, and 700 MW of wind projects that are either successfully operating or under construction.

Below is a list of some of the major generating projects led by Summit in the United States over the past few years that have been completed or are currently under development.

Combined Cycle Projects

- Bridgeport Energy Project – Connecticut: 340 MW
- St. Francis No. 1 – Missouri: 260 MW
- Choteau Project – Oklahoma: 520 MW
- St. Francis No. 2 – Missouri: 260 MW
- Griffith Energy – Arizona: 600 MW
- Chattahoochee – Georgia: 520 MW
- Blythe Energy I – California: 520 MW
- Summit/Westward – Oregon: 536 MW
- Lake Side – Utah: 543 MW
- Cliffs – Washington: 300 MW

Simple Cycle Projects

- SMARR – Georgia: 230 MW
- Sewell Creek – Georgia: 530 MW
- Pleasant Valley Station – Minnesota: 340 MW
- Holden – Missouri: 345 MW

Wind Projects

- Klondike Wind Energy Project – Washington: 24 MW
- White Creek Wind Project – Washington: 205 MW
- Windy Point/Windy Flats Project – Washington: 425 MW
- Harvest Wind Project – Washington: 100 MW
- Encino Wind Project – Texas: 100 MW (*in development*)

REC is a leading solar manufacturer of solar cells and modules and is engaged in project development activities in selected segments of the PV market. REC panels are widely used in residential, commercial, and utility scale power plant applications throughout the world. Successful power plant facilities using REC panels are located in the Czech Republic, Italy, and Spain. The REC partnership provides significant value for the Project in terms of viability. The REC panels are proven and will eliminate the risk of manufacturing and equipment delivery delays.

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

The Project will utilize solar PV panels, a mature and proven crystalline photovoltaic technology and a single-axis tracking system to optimize system production. As stated above, the technology is commercially proven.

2. Quality of Renewable Resource

The counterparty employed BEW Engineering who analyzed the solar resource potential. BEW Engineering confirmed that the resource potential adequately supports the Project. Additional information is included in Confidential Appendix A.

3. Other Resources Required

None

C. Development Milestones

1. Site Control

The counterparty has exclusive rights to property from Westlands Water District in Mendota, California, through a lease with the option agreement to purchase.

2. Equipment Procurement

As one of the two members of the NorthLight joint venture, REC is prepared to supply all of the approximately 300,000 solar PV modules needed to complete the Project. Other major equipment procurement, such as inverters, the tracking system, etc., will be completed as part of a competitive Engineering Procurement and Construction (“EPC”) tendering process.

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 California Energy Commission (“CEC”). The CEC is currently reviewing the application submitted on behalf of North Star Solar for pre-certification of the Project.

The following tables summarize key, non-confidential permits, agreements, and licenses that North Star Solar has identified may be necessary for the construction and operation of the generation facility:

Name of Permit or Lease Required	Grantor	Description of Permit or Lease	Current Status (To Be Filed, Pending Approval, Approved)	Projected Timeframe for Approval
Conditional Use Permit (“CUP”)	Fresno County, CA	Permit to construct solar PV facility on land zoned for agriculture but no longer used for agriculture	To be filed	June 2011 (estimate)
Final Environmental Impact Report	Fresno County, CA	California Environmental Quality Act (“CEQA”) permit	Expected to received a final mitigated negative declaration	June 2011 (estimate)
Oversize Load Permit	California Department of Transportation (“CalTrans”)	Delivery of oversized and heavy loads during construction	Submit application 30 days prior to delivery	July 2012 (estimate)
Stormwater Permit	Central Valley Regional	Obtain coverage under statewide general permit for	Notification only	N/A

	Water Quality Control Board	construction-related stormwater discharges		
Zoning Variance Approval	Fresno County, CA	Applies if some aspect of project design does not conform with zoning code	To be filed concurrently with CUP	June 2011 (estimate)
Grading Permit	Fresno County, CA	Permit to grade site for access roads and/or placement of structures	To be filed one month prior to grading	July 2012 (estimate)
Transportation Permit	Fresno County, CA	Oversized loads on county roads	To be filed one month prior to construction	July 2012 (estimate)

4. Production Tax Credit/Investment Tax Credit

The Project will qualify for the Investment Tax Credit (“ITC”) and Modified Accelerated Depreciation (“MACRS”). NorthLight intends to seek the ITC.

5. Transmission

The Project will interconnect into the CAISO-controlled grid on PG&E’s system. The point of interconnection will be the CAISO assigned PNode, which is likely to be located at the Mendota Substation. Additional transmission information is discussed in Confidential Appendix A.

D. Financing Plan

The Project’s financing plans are confidential and described in Confidential Appendix A.

IV. CONTINGENCIES AND PROJECT MILESTONES

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

V. REGULATORY PROCESS

A. Requested Effective Date

PG&E requests that the Commission issue a resolution approving this advice filing no later than **May 19, 2011**. Justification for this date is provided in Confidential Appendix D.

B. Earmarking

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

VI. REQUEST FOR COMMISSION APPROVAL

PG&E requests that the Commission issue a resolution no later than **May 19, 2011**, 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") 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 2009 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 covered procurement subject to the EPS because the generating facility has a forecast capacity factor of less than 60 percent and, therefore, is 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 **December 2, 2010**, which is **20** days from the date of this filing. The protest must state the grounds upon which it is based, including such items as financial and service impact, and it should be submitted expeditiously. Protests should be mailed to:

CPUC Energy Division
Attention: Tariff Unit, 4th 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) 973-6520
E-Mail: PGETariffs@pge.com

Effective Date:

PG&E requests that the Commission issue a resolution approving this advice filing on **May 19, 2011**.

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 to the GO 96-B service list and electronic approvals should be directed to e-mail PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Advice letter filings can also be accessed electronically at: <http://www.pge.com/tariffs>.

Handwritten signature of Jane Yura in cursive script.

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
Niki Bawa – Energy Division

Attachments

Limited Access to Confidential Material:

The portions of this Advice Letter marked Confidential Protected Material are submitted under the confidentiality protections of Sections 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

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Public Attachment:

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) #: **3759-E**

Tier: 3

Subject of AL: **Power Purchase Agreement for Procurement of Renewable Energy Resources Between North Star Solar, LLC, and Pacific Gas and Electric Company**

Keywords (choose from CPUC listing): Contracts, Portfolio

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: Pat Fox (415) 973-1379

Resolution Required? ☒ Yes ☐ No

Requested effective date: **May 19, 2011**

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 proposed¹: 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

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San Francisco, CA 94177

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**DECLARATION OF PATRICK FOX
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION
CONTAINED IN ADVICE LETTER 3759-E
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)**

I, Patrick M. Fox, declare:

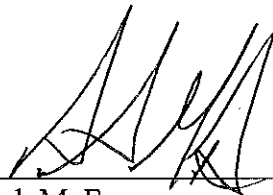
1. I am presently employed by Pacific Gas and Electric Company ("PG&E"), and have been an employee at PG&E since 2007. My current title is Principal within PG&E's Energy Procurement organization. In this position, my responsibilities include negotiating PG&E's Renewables Portfolio Standard Program ("RPS") Power Purchase Agreements. In carrying out these responsibilities, I have acquired knowledge of PG&E's contracts with numerous counterparties and have also gained knowledge of the operations of electricity sellers in general. Through this experience, I have become familiar with the type of information that would affect the negotiating positions of electricity sellers with respect to price and other terms, as well as with the type of information that such sellers 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 PG&E's Advice Letter 3759-E submitted on November 12, 2010. By this Advice Letter, PG&E is seeking this Commission's approval of a PPA that PG&E has executed with North Star Solar, 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"), and/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, if 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, if 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 November 12, 2010 at San Francisco, California.

A handwritten signature in black ink, appearing to read 'Patrick M. Fox', is written over a horizontal line.

Patrick M. Fox

PACIFIC GAS AND ELECTRIC COMPANY Advice Letter 3759-E November 12, 2010									
IDENTIFICATION OF CONFIDENTIAL INFORMATION PER DECISION 06-09-068 AND DECISION 08-04-023									
Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.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 3759-E	Y	Item VII (G) Renewable Resource Contracts under RPS program - Contract without SEPs. Item VII (un-numbered category following VII (G)) Score sheets, analyses, evaluations of proposed RPS projects. Item VIII (A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids. 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 counterparty; and contains analyses and evaluations of project viability. Disclosure of this information would provide valuable market sensitive information to competitors. Since negotiations are still in process with bidders for 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. Finally, this information has been obtained in confidence from the counterparty 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 counterparty 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 (G) and Item VII (un-numbered category following VII (G)), remain confidential for three years. For information covered under Item VIII (A), remain confidential until after final contracts submitted to CPUC for approval. For information covered under Item VII (B), remain confidential for three years after winning bidders selected. For information covered by General Order 66-C, remain confidential.	
2 Appendix A	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 evaluation 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. For information covered under Item VII (B), remain confidential for three years after winning bidders selected.	

		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
4	Appendix C	Y	Item VII (G) Renewable Resource Contracts under RPS program - Contracts without SEPs. Item VII (un-numbered category following VII (G) Score sheets, analyses, evaluations of proposed RPS projects. Item VIII (A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids. General Order 66-C.	Y	Y	Y	This Appendix contains bid information and bid evaluations from the 2009 Solicitation; discusses, analyzes and evaluates the Project and the terms of the PPA; contains confidential information of the counterparty; and contains analyses and evaluations of project viability. 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. Finally, this information has been obtained in confidence from the counterparty 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 counterparty 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 (G) and Item VIII (un-numbered category following VII (G)), remain confidential for three years. For information covered under Item VIII (A), remain confidential until after final contracts submitted to CPUC for approval. For information covered under Item VIII (B), remain confidential for three years after winning bidders selected. For information covered by General Order 66-C, remain confidential. For information covered under Item VII (G) and Item VIII (un-numbered category following VII (G)), remain confidential for three years.
5	Appendix D	Y	Item VII (G) Renewable Resource Contracts under RPS program - Contracts without SEPs. Item VII (un-numbered category following VII (G) Score sheets, analyses, evaluations of proposed RPS projects. Item VIII (A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids. 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 counterparty. 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 counterparty to the PPA has an expectation that the terms of the PPA will remain confidential pursuant to confidentiality provisions in the PPA.	For information covered under Item VII (G) and Item VIII (un-numbered category following VII (G)), remain confidential for three years. For information covered under Item VIII (A), remain confidential until after final contracts submitted to CPUC for approval. For information covered under Item VIII (B), remain confidential for three years after winning bidders selected. For information covered by General Order 66-C, remain confidential.

		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
	Appendix E		Item VII G) Renewable Resource Contracts under RPS program - Contracts without SEPs.	Y	Y	Y	This Appendix contains the PPA. Disclosure of 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 counterparty to the PPA has an expectation that the terms of the PPA will remain confidential pursuant to confidentiality provisions in the PPA.	Remain confidential for three years.
7	Appendix F	Y	Item VII G) Renewable Resource Contracts under RPS program - Contracts without 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 counterparty to the PPA has 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. 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)

ARROYO SECO CONSULTING

PACIFIC GAS AND
ELECTRIC COMPANY
2009 RENEWABLE
POWER SOLICITATION

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

NOVEMBER 12, 2010

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EXECUTIVE SUMMARY

This report provides an independent evaluation of the process by which the Pacific Gas and Electric Company (PG&E) undertook a competitive solicitation to procure eligible renewable resources in 2009. An independent evaluator (IE), Arroyo Seco Consulting (Arroyo), conducted a broad range of activities to review, test, and check PG&E's processes as the utility conducted outreach to renewable power developers, solicited Offers, evaluated Offers, and selected a short list of Offers with which to enter negotiations.

The high-level finding of this independent evaluation was that, overall, PG&E evaluated Offers received in its 2009 competitive solicitation for renewable resources fairly, and used a fair process to select a short list. PG&E's outreach to the renewable power industry stimulated a robust response with a record number of Participants, ensuring a competitive outcome. To the extent issues arose during the evaluation and selection process, they were generally resolved without preferential treatment to one Participant at the expense of others. Some minor issues in the evaluation and selection process were identified, and specific recommendations for improvement in future renewable solicitations are described in this report. Arroyo disagreed with some specific choices that PG&E made in selecting a short list. However, these disagreements result from differing evaluations of the viability of specific projects, where reasonable people could come to opposite conclusions based on the Offer package information.

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 September 20, 2010, PG&E executed a PPA that originated from its 2009 renewable power solicitation, an agreement for the purchase of 60 MW from North Star Solar, LLC¹ ("North Star Solar"), from its proposed solar photovoltaic project in western Fresno County near the city of Mendota.

The purpose of this report is to provide an independent review of the extent to which the project-specific negotiations with North Star Solar were fair, and an opinion about whether the contract for the output of the North Star Solar 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 between PG&E and North Star Solar, and how that process met or failed to meet rigorous standards for fairness. Arroyo concurs with PG&E management that, with information currently available about the North Star Solar project, the PPA merits approval by the CPUC, based on the IE's ranking of the project as moderate in valuation and price, moderate in project viability, and moderate in portfolio fit.

¹ North Star Solar, LLC is a joint development entity that is half owned by Summit Power Group, Inc. of Bainbridge Island, Washington, and half by Renewable Energy Corporation, ASA ("REC"). Summit Power Group is a private company that has experience developing several fossil-fueled generation projects and some wind generation facilities but no prior solar experience. REC is a publicly traded Norwegian manufacturer of solar photovoltaic silicon, wafers, cells, and modules.

1. ROLE OF THE INDEPENDENT EVALUATOR

Pacific Gas and Electric Company issued a Request for Offers (RFO) on June 29, 2009, a competitive 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 2009 RPS RFO, PG&E announced its intent to procure approximately 1 to 2% of its retail sales volume through the 2009 process, or about 800 to 1,600 GWh annually.

The California Public Utilities Commission (CPUC) had conditionally approved PG&E's RPS procurement plan in its Decision 09-06-018 issued on June 8, 2009. This chapter elaborates on the prior CPUC decisions that form the basis for an Independent Evaluator's participation in the 2009 RPS RFO, describes key roles of the IE, details activities undertaken by the IE in this solicitation to fulfill those roles, 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 independent power developers, 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 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 that Decision, the IE should provide a preliminary report along with the IOU submitting its short list. This document represents that short-listing report for the 2009 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 for the 2009 competitive solicitation for renewable resources, providing an independent evaluation of the utility's Offer evaluation and selection process.

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."² More specifically, the Energy Division (ED) of the CPUC has provided a template to guide how IEs should report on the 2009 RPS competitive procurement process, outlining four specific issues that should be addressed:

- Did the IOU do adequate outreach to potential bidders, and was the solicitation robust?
- Was the IOU's least-cost, best-fit (LCBF) methodology designed such that all bids were fairly evaluated?
- Was the IOU's RPS bid evaluation and selection process fairly administered?
- Did the IOU make reasonable and consistent choices regarding which bids were brought to the CPUC for 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 ACTIVITIES

To fulfill the role of evaluating PG&E's 2009 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:

² 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 2009 RPS RFO Solicitation Protocol and its various attachments including the Forms of Power Purchase Agreement (PPA) and PG&E's detailed description of its LCBF bid evaluation and selection process and criteria.
- Examined the utility's nonpublic 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. Also, Arroyo reviewed the nonpublic protocols regarding sites for development and ownership eligibility, which detail the treatment of these special cases in which developers offer land or the transfer of a completed generation project to utility ownership. 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.
- Attended PG&E's RPS Bidders' Conference on July 21, 2009 to evaluate the information provided to potential Participants, and reviewed its list of registered attendees against PG&E's master list of RFO contacts (used for outreach to potential Participants) and the list of parties providing a Notice of Intent to bid.
- Reviewed the posting of questions and answers from the Bidders' Conference on PG&E's website to check whether information that was made available to conference attendees was also provided to other potential Participants.
- Attended the RFO Bidders' Workshop on August 3, 2009 to gauge to degree to which the utility sought to clarify the requirements for conforming Offer packages, and reviewed the website-posted question and answer transcript from that workshop to test whether the information was made available to all potential Participants.
- Examined PG&E's 2009 RFO master contact list; performed a detailed analysis of contacts with respect to industry and technology representation.
- Interviewed members of PG&E's evaluation committee and 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.
- Reviewed in detail various data inputs and parameters used in PG&E's LCBF market valuation methodology.

During the period between Offer Opening and PG&E's development of a final short list for submittal to the CPUC, 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.

- Observing discussions of the PG&E evaluation committee regarding what additional information should be requested immediately from individual Participants to address material deficiencies (e.g. missing or unreadable electronic versions, missing Attachment D offer forms, clarification of ambiguous or apparently erroneous information) 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 monitored other communications between PG&E and Participants to check for fairness in how non-public information was released.
- Reading the Offers in detail. Arroyo particularly scrutinized Offers for utility purchase and those which provided options for utility buyout.
- Observing PG&E evaluation committee discussions about which Offers to disqualify for nonconformance with the requirements of the Solicitation Protocol, and why.
- Spot-checking Offer-specific data inputs to PG&E’s valuation model.
- Spot-checking the assignment of individual Offers to transmission clusters or to local zones within the system controlled by the California Independent System Operator (CAISO).
- Building an independent valuation model and using it to value the Offers. This served as a cross-check against PG&E’s LCBF market valuation model. The IE model used independent inputs and a different methodology than PG&E’s LCBF methodology. It was much simpler and lacked detail and granularity used in aspects of the PG&E model. 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 and differences in treatment of Offers between PG&E and the IE. 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 energy pricing, the inappropriate exclusion or inclusion of Resource Adequacy (RA) value, or inaccurate assignment of Transmission Ranking Cost Report (TRCR) adders.
- Attending and participating in team discussions of PG&E’s evaluation committee for the 2009 RPS RFO as the conforming Offers were evaluated. This included discussing what scores were assigned to each Offer for the various non-valuation criteria, and why. It also included the discussions of what Offers should not be selected for specific reasons not directly related to valuation or

project viability but related to other evaluation criteria or preferences. Participation provided an opportunity to test the objectivity, fairness, and reasonableness of how PG&E assessed Offers on these criteria and preferences.

- Developing independent project viability scores for each Offer, using the ED's version of the Project Viability Calculator. This served as a cross-comparison to check on the PG&E evaluation team's scoring, and helped to surface ambiguities in the Calculator's scoring criteria that could lead reasonable individuals to score Offers differently. It facilitated discussions that led both the PG&E team and the IE to revise their preliminary scores upon review and cross-check.
- Reviewing PG&E's scoring of each Offer for the criteria other than market valuation and project viability, testing for consistency and fairness in the treatment of projects.
- 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 2009 RPS RFO, as that leadership group made decisions about the logic for selecting a short list and approved proposed decisions for the short list.
- Attending meetings of PG&E's Procurement Review Group (PRG), including answering questions about the independent review and presenting a commentary on the selection process the utility proposed to use to construct a short list. Members of the PRG followed up with more specific questions about Offers, valuations, and project viability scores, to which Arroyo responded with more detail.
- Offering PG&E's evaluation committee and steering committee commentary based on independent opinion. In a few cases Arroyo provided specific suggestions on topics such as treatment of Offers interconnecting outside the CAISO or interpretation of guidelines for the Project Viability Calculator.

Following PG&E's preliminary selection of Offers for a short list, Arroyo's activities focused on the project-specific discussions that ensued:

- Monitoring communications with shortlisted and non-shortlisted Participants, including discussions in which the utility offered the latter an opportunity to be

debriefed on the reasons why their Offers failed to be selected and to give feedback on the overall RFO process;

- Discussing with the PG&E team the choices and decisions that were posed by shortlisted parties who sought changes in project selection or size; and
- Providing independent counsel and suggestions to the PG&E team regarding decisions about the process, such as whether to provide time extensions to shortlisted Participants obligated to place deposits because other IOUs were late in their notifications about their short lists.
- Observing negotiation sessions between PG&E transactors and short-listed developers, and reviewing draft term sheets and contracts for an analysis of concessions granted and variances from PG&E's Form Agreement to assess the fairness of the negotiations.

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", ³ 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.

To the extent that Arroyo's reporting on the fairness of PG&E's actual selection of Offers for its short list requires a more explicit discussion of such analyses, scores, and evaluations, these are handled in greater detail in the confidential appendix to this report.

³"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. ADEQUACY OF OUTREACH TO PARTICIPANTS AND ROBUSTNESS OF THE SOLICITATION

In its 2009 renewable solicitation, PG&E undertook to meet a goal of procuring 1 to 2% of its retail load through selection of Offers that will lead to successfully negotiated contracts and commercially operating generating facilities. This section discusses an assessment of the degree to which PG&E adequately conducted outreach activities to drum up sufficient participation in the RFO process, and the degree to which the resulting solicitation may be judged robust enough to be competitive.

A. CLARITY AND CONCISION OF SOLICITATION MATERIALS

While not a particularly concise set of materials, the contents of PG&E's 2009 RPS RFO solicitation protocol generally provided clear direction to Participants on how to prepare and submit complete Offer packages that could be evaluated. Arroyo has a few observations about the clarity of the guidance provided in the protocol and issues created when Participants failed to understand or follow that guidance:

- The great majority of Offers were submitted as complete and conforming packages. The most common deficiencies in other Offers were (1) failures to submit the offer form (Attachment D) for all Offer variants or project phases; (2) errors in filling in the offer form such as missing data; (3) failures to provide the electronic version of the Offer; (4) discrepancies between the text of the Offer and the offer form; and (5) in the case of buyout options, failures to specify the buyout price in the offer form.

Since the requirements for the offer form were clearly addressed in the solicitation protocol, in the instruction sheet for the offer form, and in the bidders' workshop presentation that PG&E provided, Arroyo can only surmise that many Participants neglected to pay attention to these small but important details. The process of sending deficiency letters to the 2009 RFO Participants who did not provide necessary information and obtaining corrected Offers was time-consuming. Arroyo cannot identify any improvements to the clarity of the RFO materials that would have reduced the incidence of such Participant errors.

- The 2009 solicitation protocol specifically and clearly stated that Offers that propose to deliver renewable power at a point outside the CAISO grid should also specify a price premium to deliver into the CAISO or to an interface point with the CAISO.

Several Participants failed to do so.⁴ Other Participants specified premiums that lacked any detailed backup on how the power would be delivered. This created an issue regarding how best to treat Participants fairly and consistently, given that some Offers were only offered with pricing at busbars outside the CAISO, some Offers offered what appeared to be unrealistic premiums for delivery into the CAISO as eligible renewable resources,⁵ and others provided the full information that the protocol requested in a credible and detailed way.

It appears that some Participants prefer to avoid any risk associated with moving their facilities' output to California and to shift that risk to PG&E's ratepayers, by ignoring the protocol's directions to provide a price premium to do so and offering only delivery at their project busbar. While this does not appear to be a real issue with the clarity of the RFO materials, Arroyo suggests that in future solicitations the protocol be drafted to emphasize the mandatory nature of proposing a price premium for CAISO delivery as part of the Offer, and to clarify the solicitations existing language that the premium must be sufficient to ensure that the power deliveries fully qualify as eligible renewable resources under the California Energy Commission's (CEC's) guidelines.

- The 2009 solicitation protocol clearly stated two preferences of the utility that are not among the evaluation criteria: (1) a preference for projects that interconnect to nodes within the PG&E service territory, as opposed to the territories of other utilities (CAISO or otherwise) or to an interface point at the boundary of the CAISO, and (2) a preference for projects with earlier on-line dates vs. later. These stated preferences played an important role in decisions about which Offers the utility selected for its short list.

In the course of debriefing non-shortlisted Participants, it appeared that several of the parties were not aware of these stated preferences, perhaps because the description of the preference fell outside the chapter of the solicitation protocol that describes how Offers were to be evaluated. Arroyo recommends that in future solicitations PG&E seek to edit the protocol to help clarify that these specific preferences can play an important role in selection, even though they are not among the evaluation criteria. This would improve the transparency of the Offer selection process to Participants.

- The discussions that took place while debriefing the non-shortlisted Participants suggest that several developers did not clearly understand the importance of the Project Viability Calculator as a tool for assessing the likelihood that a proposed

⁴ At one point in the protocol, it states that the Participant "must also specify" the premium; elsewhere the protocols states that the Participant "may also present" the premium. It may be helpful to strengthen the language to emphasize the mandatory nature of the premium.

⁵ The protocol's language suggests that the premium "could be expected to include the cost of...a firming and shaping agreement" (page 46). The California Energy Commission's guidebook on RPS eligibility names three contracting structures that would render out-of-state intermittent renewable generation eligible to meet RPS requirements; all three involve firming and shaping services to achieve scheduling for use by in-state retail customers.

project could attain commercial operation. For example, if each Participant had carefully reviewed the Calculator and its criteria scoring guidelines, one would have expected them to identify in their Offers whether they had achieved site control of their proposed project's location. However, it became clear from debriefings that some Participants failed to appreciate that their viability score would have been higher if they had revealed that they had achieved site control in their written Offers, rather than omitting that crucial information.

Arroyo considers the solicitation protocol to have clearly stated that the Calculator (as modified by PG&E) was the basis for evaluating projects on viability, and it provided in the text of the protocol a link to the CPUC webpage displaying the Calculator. Arroyo recommends one possible clarification: that in future solicitations PG&E reprint the entire text of the criteria scoring guidelines in Appendix K of the solicitation that describes the evaluation criteria in greater detail (the 2009 version of Appendix K provides the guideline for PG&E's additional criterion of "EPC Experience" but not guidelines for the other criteria)

Given the amount of relevant material that the utility needs to provide in its solicitation protocol, it is not surprising that the main body of the document totals fifty-five pages. Arroyo cannot identify any straightforward way to make the document more concise; the material provided is generally needed to provide Participants with a full and transparent view of how the solicitation is intended to function and of full disclosure about the obligations and constraints that govern Participants if they choose to proceed.

When the utility solicited feedback from non-shortlisted Participants after announcing the results of the short list, the general observations provided by developers were that PG&E's "RFP documents were very clear" and "straightforward", and that the solicitation process "worked out fine". Criticisms of the solicitation tended to focus instead on aspects of the process other than the clarity of the RFO materials, such as criticism of the design of the Project Viability Calculator, of the amount of information required in an Offer, and of PG&E's unwillingness to provide publicly any detailed information about the shortlisted Offers.

Overall, Arroyo believes that PG&E's solicitation materials were generally clear, if not particularly concise, and that improvement opportunities to help ensure more complete Offer packages are submitted in the future are minor.

B. 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:

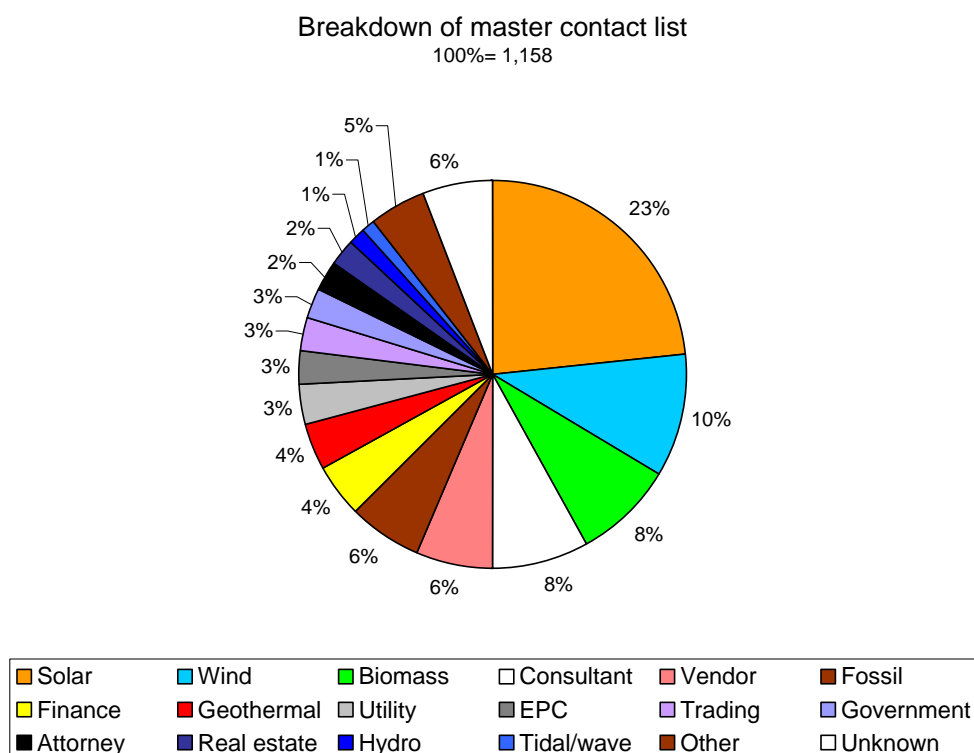
- How many individuals were contacted?
- To what extent were these contacts in companies that develop renewable power?

- 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?

By the beginning of July 2009, PG&E had compiled a contact list for use in publicizing its RFOs, totaling about 1,159 individuals. Of these, about 240 contacts were clearly identified as having been added in 2009, the period closest to the release of the RPS RFO.

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 biomass-based generation. Figure 1 displays the estimated shares by industry sector of these contacts. Note that this contact list is employed not just for renewable solicitations but for all-source RFOs as well.

Figure 1



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. About half of the individual contracts represented organizations that could be

positioned to participate in a renewable energy solicitation, though many contacts were with other industry participants, such as attorneys, financing providers, consultants, equipment vendors, and other utilities, which could potentially provide leads to generation developers.

PG&E's press release announcing the issuance of the 2009 RPS RFO was picked up and reported broadly in the electric power trade press, including publications such as:

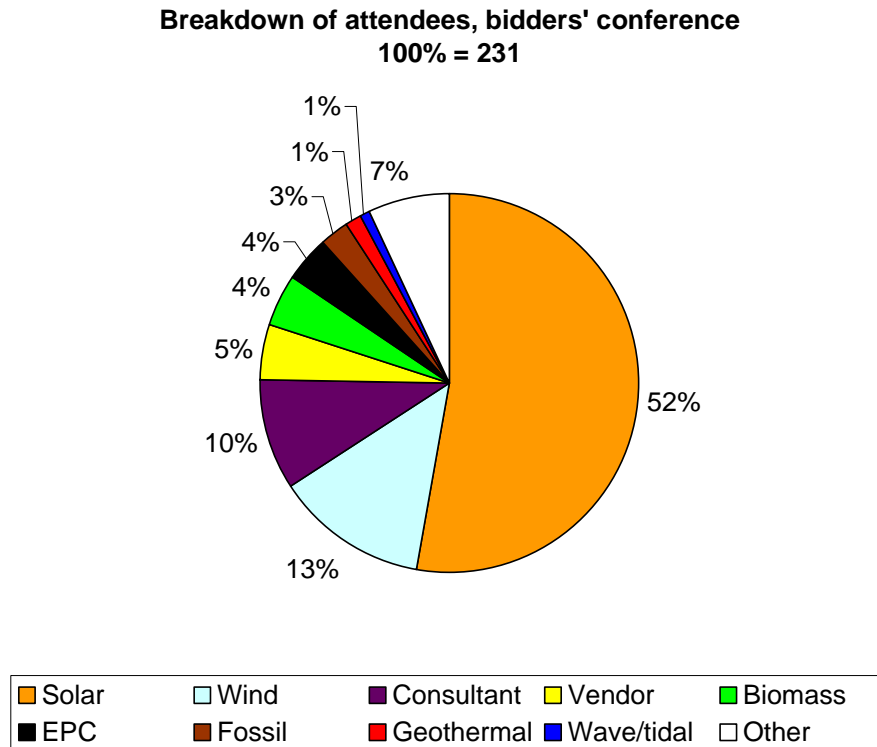
- Global Power Report
- Megawatt Daily
- Power Market Today
- Electric Power Week
- Reuters News
- Dow Jones News Service

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 2 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 or specific projects for which their employer is currently pursuing a PG&E contract. A turnout of 243 individuals represents a very strong response and expression of industry interest, and is roughly twice the registration for the 2008 RPS RFO bidders' conference. As with the contact list, 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.

Arroyo estimates that out of the individual corporations or entities that were represented in the large attendance at the bidders' conference, about one-quarter actually submitted Offers (this includes entities that participated jointly with others in preparing an Offer). Arroyo considers that to be an indication of successful outreach, given that many of the organizations represented in the audience were not mainstream renewable energy developers with prior experience developing utility-scale power generation projects, but rather law firms, consultants, equipment vendors, engineering and construction firms, and very small start-up renewable energy development companies.

Figure 2



As previously described, most Offer packages were complete and accurate. To the extent that the PG&E team had to follow up with Participants in order to address deficiencies, the errors in the Offers generally related to:

- Failures to submit the offer form (Attachment D) for all Offer variants or phases;
- Errors in filling in the offer form, such as missing data;
- Failures to provide the electronic version of the Offer
- Discrepancies between the text of the Offer and the offer form; and
- In the case of buyout options, failures to specify the buyout price in the offer form.

The bidders' workshop presentation (held via webinar) dealt with how to fill in fields in the offer form in some detail, so it is hard to fault PG&E for insufficient outreach on these specific points. Attendance for the bidders' workshop was, however, much smaller than for the bidders' conference. No Offer was disqualified for an initial failure to fill in these fields properly if the Participant addressed the deficiencies, and Participants fixed the defects

following correspondence with PG&E. The main impact of the deficient submittals by several Participants was to slow down progress in evaluating Offers and making a selection. Arroyo observes that PG&E may have an opportunity to increase the degree of outreach or promotion of the bidders' workshop as a means to bring more Participants down the learning curve on how to use the PG&E-specific offer form, but some deficiencies are inevitable.

The vast majority of Participants seemed to understand, based on PG&E's outreach efforts, what the purpose of this year's solicitation was, and what specific information needed to be provided to complete a conforming Offer for this solicitation. A small number of Participants appear to have either mistaken the 2009 RPS solicitation for the as-yet-unapproved PV Program that PG&E has proposed to the CPUC as a means of eliciting mid-sized photovoltaic generation within its service territory, or regarded the proposed price for that separate program as a safe harbor to win shortlisting in the RFO.⁶ Arroyo cannot fault the utility for not making the distinction between the 2009 RPS RFO and other solicitations more clearly, given the plain text in the solicitation protocol describing the purpose of this RFO and the fact that is a competitive solicitation and not a feed-in tariff.

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 strikingly large attendance at the bidders' conference and the decent yield of Offers submitted by conference attendees all suggest that PG&E's overall outreach effort was strong and effective. There may be room for future improvement in one specific area, discussed below.

C. 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 commercial operation, without having to accept a majority of Offers?
- Was the response to the solicitation diverse with respect to technologies?
- Was the distribution of responses broadly represented by projects that were assessed as moderately or highly viable, or was there an excess of less viable Offers?

The Offers PG&E received totaled a rather large volume of projected generation and capacity, far in excess of the expected growth in the utility's retail energy needs in the next several years. The offered volume totaled a substantial fraction of PG&E's expected retail

⁶ Application 09-02-019, "Application of Pacific Gas and Electric Company To Implement Its Photovoltaic Program", February 24, 2009

load, and should provide plenty of opportunity for PG&E to negotiate, contract for, and procure the stated objective for the RFO of 1 to 2% of retail load, taking into account that some of the shortlisted Participants chose exclusive negotiation with other utilities for their Offers instead of PG&E, some projects are likely to fall out of negotiation, and some projects that arrive at executed contracts may yet fail to be completed and enter commercial operation. Total GWh/year volume elicited in Offers exceeded the stated objective by a factor of dozens. This large ratio of offered volume to targeted procurement volume reflects a remarkably healthy and robust response, suggesting a strong likelihood that the targeted volume can be achieved at some point in time.

While the total size of the response to the RFO, measured in number of Offers, MW capacity offered, or GWh/year volume offered, was quite large, the diversity of renewable technologies appears to have diminished somewhat from the 2008 response. Certain technologies were underrepresented among Offers when compared to the outreach contact list or to the attendance at the bidders' conference.

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 speculates that current economic conditions may have worsened the economics of some of these generation methods, or that renewable fuel availability and pricing may have become more adverse.

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 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 8% of the utility's RFO contact list, and biomass and biogas power made up roughly 4% of the attendance of the bidders' conference, suggesting that PG&E has made efforts to solicit interest from this community, and engaged the attention of members of the biomass and biogas developer population. However, biomass and biogas Offers made up a smaller proportion of the total volume offered. PG&E may have a continuing opportunity to increase the extent to which it focuses a portion of its outreach to biomass power developers in its future RPS solicitations.

D. ADEQUACY OF 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 opening to engage in a discussion of PG&E's evaluation of the Offer, if desired. Several of these non-shortlisted Participants expressed an interest in such a follow-up discussion. Arroyo participated in most of these sessions in which the PG&E team debriefed the developers about the evaluation of these rejected Offers.

In general these feedback sessions were welcomed by Participants. They created an opportunity for Participants to obtain a clearer view of how PG&E's evaluation criteria and preferences applied to the specific Offers, and of what factors played a role in the failure to select the Offers. Most Participants, when prompted to offer feedback on PG&E's solicitation materials and process, had generally positive commentary, including positive ratings for the bidders' conference, for the solicitation protocol, and for the opportunity to debrief on the outcome of PG&E's selection. A variety of specific criticisms were offered, including useful suggestions for future changes. The feedback sessions that offered negative commentary focused almost exclusively on developers who contested their Offers' rejection, rather than any specific, actionable feedback on how to improve the solicitation materials or process.

Arroyo's opinion is that PG&E's efforts to seek feedback from non-shortlisted Participants after the evaluation of Offers was entirely adequate and quite helpful both to the utility and to those Participants who were willing to take part in a debriefing session. There remain opportunities to obtain more detailed feedback from the shortlisted parties in coming months as the utility and these Participants begin negotiations.

3. FAIRNESS OF OFFER EVALUATION AND SELECTION METHODOLOGY

The key finding of this chapter is that, based on IE activities and findings, PG&E's evaluation and selection methodology for identifying a short list for the 2009 RPS RFO was designed fairly overall. There are some issues and concerns that would benefit from follow-up.

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 renewable solicitations, within the template intended for use by IEs in reporting. The principles include:

- The IOU bid evaluation should be based only on information submitted in bid proposal documents.
- There should be no consideration of any information that might indicate whether the bidder is an affiliate.
- Procurement targets and objectives were clearly defined in the IOU's solicitation materials.
- The IOU's methodology should identify quantitative and qualitative criteria and describe how they will be used to rank bids. These criteria should be applied consistently to all bids.
- The LCBF methodology should evaluate bids in a technology-neutral manner.
- The LCBF methodology should allow for consistent evaluation and comparison of bids of different sizes, in-service dates, and contract length.

Some additional considerations appear relevant to the specific situation PG&E finds itself in during the 2009 RPS RFO. Unlike some utilities, PG&E does not rely on weighted-average calculations of scores for various evaluation criteria to arrive at a total aggregate score. Instead, the team ranks Offers by net market value using its methodology, after which, "[u]sing the information and scores in each of the other evaluation criteria, PG&E

will decide which Offers to include and which ones not to include on the Shortlist.”⁷ The application of judgment in bringing the non-valuation criteria to bear on decision-making, rather than a mechanical, 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 measures will be considered; non-valuation criteria used in selecting Offers should be clear to Participants.
- The logic of using non-valuation criteria or preferences 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 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 2009 RPS RFO. These are summarized in Section XI of PG&E’s 2009 Solicitation Protocol for its renewable solicitation, and detailed in Attachment K to that Solicitation Protocol.

Additionally, PG&E developed nonpublic documents for internal use that detail the protocols for each individual criterion used in the evaluation process. These include:

- Market valuation
- Portfolio fit
- Credit (including provision of collateral requirements)
- Project viability
- RPS goals
- Adjustment for transmission cost adders
- Ownership eligibility
- Sites for development

⁷ “Renewables Portfolio Standard, 2009 Solicitation Protocol, Pacific Gas and Electric Company, June 29, 2009”, page 42

The first six of these are listed as evaluation criteria in the 2009 RPS RFO solicitation protocol. Additionally, the protocol states two other evaluation criteria: the materiality and cost impact of Participants' proposed modifications to the solicitation's requirements and PPA, and the total volume of offers submitted by a single counterparty (considering the volume of energy already under contract as well). In other words, the utility stated that it will take into account the degree to which potential counterparties have proposed changes to PG&E's 2009 Form Agreement as the basis for contracting, and the degree of supplier concentration in contracts with individual counterparties.

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 multipliers 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, providing imbalance services, operational reserves, and regulation, are assumed zero. Both benefits and costs are discounted from the entire contract period to 2010 dollars per MWh in the methodology.

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 dispatchable Offers, the protocol specifies use of a real-option pricing model to measure energy benefit. 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.

PG&E projects Resource Adequacy (capacity) value as a nominal dollar per kilowatt-year estimate. The CPUC recently revised the Resource Adequacy methodology that load-serving entities use to calculate Net Qualifying Capacity for intermittent generation that is sold on an as-available basis. While previously capacity quantity was calculated based on the annual average of the generation profile for the noon to 6 p.m. period, now the calculation is based on averaging the generation profile over five-hour blocks, the hours of which differ between April-October and November-May to reflect the different timing of peak demand in

different seasons.⁸ Also, the CPUC decided to base the Net Qualifying Capacity on a 70% exceedance level for these solar and wind resources whose output is stochastic in nature, in a calculation that takes into account diversity benefits of multiple individual generators with different profiles. The PG&E team has adapted its calculations of resource adequacy value to reflect the new definition of Net Qualifying Capacity.

Capacity benefit is calculated as the product of capacity value and quantity, and discounted to 2009 nominal dollars.

Compliance costs for greenhouse gases in the costs of non-renewable generation are assumed to begin in 2012. This feature is consistent with the CPUC's decision regarding the 2009 Market Price Referent.⁹ This feature only affects the net valuation of Offers indirectly, to the extent that projected future compliance costs are estimated to affect the value of capacity and energy.

PORTFOLIO FIT

For the 2009 renewable solicitation, PG&E employed a quantitative scoring system to assess the portfolio fit of an Offer into its overall set of energy resources and obligations. The team calculated one score for the firmness of 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 numerical average of the two.

CREDIT

PG&E assessed the degree to which a Participant making an Offer proposed 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 for a PPA following the commencement of commercial operation. A subcommittee of PG&E's evaluation committee assigned numerical scores to each Offer based primarily on the degree to which the Participant proposed to comply with the utility's requirements for security.

The credit requirements appear in two separate chapters in PG&E's solicitation protocol: in section V on the Participant's Offer and Offer Deposit upon shortlisting, and in section XII on Credit/Collateral Requirements upon PPA or PSA execution. In the former, the protocol explicitly states that PG&E requires an Offer Deposit in the amount of \$3/kW of project capacity within five business days of the Participant receiving notice of its shortlisting; it also states that the Offer Deposit may either be a cash deposit or a letter of credit issued by a U.S. commercial bank or a U.S. branch of a foreign commercial bank

⁸ California Public Utilities Commission, Decision 09-06-028, "Decision Adopting Local Procurement Obligations for 2010 and Further Refining the Resource Adequacy Program", June 18, 2009

⁹ California Public Utilities Commission, Energy Division, Resolution E-4298, December 17, 2009, page 2

meeting PG&E's requirements. In either case, PG&E requires the bank to have a senior unsecured long term debt rating of no lower than "A2" from Moody's Investor Services or "A" from Standard & Poor's Rating Group. It became apparent after shortlist notification that these explicit requirements were not understood or followed by at least one Participant.

Arroyo suggests that in future solicitations PG&E consider editing the text of the protocol, perhaps combining sections, to emphasize the rating requirement for the letter of credit. In prior bilateral negotiations, it has occasionally been the case that PG&E's counterparties did not understand (or disputed) the utility's standard credit requirements for posting security, but it was striking to Arroyo that, even when these requirements were stated in written form within a solicitation protocol, any developer would fail to plan or prepare to meet the minimum credit requirement.

PROJECT VIABILITY

New in 2009, PG&E employed a version of the Project Viability Calculator to assess the likelihood that a proposed generation facility will be completed and enter full commercial operation on the proposed on-line date.

The history of renewable power procurement by California IOUs has been fraught with a certain incidence of contract failure. IOUs have, on occasion, negotiated PPAs with developers of new generation facilities, only to find later that some projects failed to come into full commercial operation on their proposed on-line dates. The failures or delays have arisen from a number of underlying causes, including impediments to site control, permitting, financing, transmission interconnection, and technical performance of the projects.¹⁰ Such failures or delays have contributed to a degree of shortfall between planned growth in delivered volumes of renewable energy and realized growth.

The Commission sought to address these issues of contract failure or delay related to poor viability of contracted facilities through vehicles such as Rulemaking 08-08-009 that included a review of LCBF methodologies for RPS offer evaluation, including an assigned Commissioner's ruling that addressed the issue of how to change procurement rules to ensure that viable projects are selected in the IOU's solicitations.¹¹ Pursuant to that ruling, the Energy Division of the CPUC drafted, circulated among stakeholders for comment, and finalized a Project Viability Calculator. The Calculator is envisaged to serve as a tool that will use standardized criteria to quantify a project's viability, relative to other projects.

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

¹⁰ The CPUC's "Renewables Portfolio Standard Quarterly Report" to the California Legislature in July 2008 also reported other risk factors that could impede successful on-time completion of contracted renewable projects, such as uncertainty about the renewal of federal production and investment tax credits, developer inexperience, price reopeners, military radar, fuel supply, and equipment procurement.

¹¹ California Public Utilities Commission, "Assigned Commissioner's Ruling Regarding Potential Renewables Portfolio Standard Development in Imperial Valley and Evaluation of Renewable Procurement Contracts", February 3, 2009, pages 7-8.

- Project development experience,
- Ownership and operating and maintenance experience,
- Technical feasibility,
- Resource quality,
- Manufacturing supply chain (e.g. degree of constraints upon availability of key components),
- Site control,
- Permitting status,
- Project financing status,
- Interconnection progress,
- Transmission requirements, and
- Reasonableness of Commercial Operation Date (COD).

The Energy Division provided a set of scoring guidelines for each of these criteria, in an effort to standardize how a project would be assigned a score between zero and ten for each. These guidelines proved to be helpful for pursuing consistency and fairness in rating the viability of proposed projects. Because this was the first application of the Calculator as a tool, there may be room for improvement in future solicitations. In its Decision accepting the IOU's 2009 procurement plans, the CPUC noted that the Calculator "is a screening, not a dispositive, tool" that permits room for judgment.¹² Arroyo reads this to indicate that scores provided by the Calculator should not be used as the only determinant of what Offers merit shortlisting based of superior viability, nor used to set a hard cutoff for shortlisting based on score, but that the PG&E team may consider the Calculator score among other facts and considerations in assessing the likely viability of proposed projects.

PG&E modified the Energy Division's final version of the Calculator by including a criterion for Engineering, Procurement, and Construction (EPC) experience, and reweighting the calculation to accommodate an twelfth criterion. This is consistent with a thesis that a project will be likelier to achieve commercial operation on schedule if the external contractor engaged by the developer to design, engineer, procure components for, and construct the project has had significant prior experience providing these services for other projects of similar size and technology. Arroyo cannot find fault with this thesis, but notes that at the stage at which developers are responding to an RFO they frequently have

¹² California Public Utilities Commission, Decision 09-06-018, "Decision Conditionally Accepting 2009 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan Supplements", June 8, 2009, page

not arrived at the point of identifying a contractor or even a set of potential contractors. The absence of a selected EPC contractor in itself may be an indicator of a project that is not very advanced and therefore less likely to succeed. Or it may merely indicate that the Participant has not carefully read the solicitation protocol and has neglected to provide details in the Offer about plans for an EPC contractor.

More discussion about the utility of the Calculator as a standardized tool is provided below in the section about the administration of the methodology and in the confidential appendix.

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.

Additionally, the California Legislature articulated program benefits anticipated for the RPS program in the Legislative Findings and Declarations associated with the laws passed to create the program, and PG&E assesses the degree to which Offers would promote these benefits.

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 well-defined corporate 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.

PG&E's methodology for scoring Offers on their support for RPS Goals involves scoring attributes of the proposal and calculating a weighted-average numerical score.

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. 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 cost to transmit power from the delivery point to the border of the CAISO for firm delivery.

Also, 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. If a CAISO interconnection study has been completed, the team can use the more specific estimate of transmission network upgrade costs identified in the study rather than the TRCR-based proxy.

The Solicitation Protocol and its Attachment K lay out the somewhat complex two-step 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 2010 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.

For Offers for projects that propose to interconnect outside the CAISO grid (whether outside California or into the control area of non-CAISO entities such as the Imperial Irrigation District, the Western Area Power Administration, or non-CAISO municipal utilities or electric cooperatives), the solicitation protocol requested that the Participant to specify two prices, one for renewable power delivered at a point outside the CAISO, and a price premium above that to deliver to a CAISO interface point or node.

Where Participants failed to specify the latter price premium for CAISO delivery, the PG&E team needed to use its own assumptions and analysis to estimate costs required to deliver the power into the CAISO in a manner that would enable the generation to qualify as an eligible renewable resource. A large number of offers fell into this category, particularly among Participants who proposed to interconnect within California but at points outside CAISO jurisdiction. It is possible that many of developers either had no interest in delivering the power to the CAISO, or had a poor grasp of the costs to do so in a manner that would render their power eligible to meet RPS Goals at the point in time when the Offer was due.

In future solicitations, Arroyo recommends that the protocol be edited to make more clear to Participants that their Offer for such projects would benefit from explicitly identifying how they propose to move their power from the foreign busbar to a CAISO interface point and what price premium would be required to deliver the power into the CAISO in a manner that would qualify it as an eligible renewable resource. In the case of intermittent resources, such a price premium should have included whatever shaping and firming fees, firm point-to-point transmission tariffs, and/or imbalance charges and

operating reserve costs required to support firm scheduled deliveries to the CAISO from projects in non-CAISO systems. It was evident from some submittals that several Participants were ignorant of the basic requirements to achieve RPS eligibility under CEC guidelines for intermittent generation projects interconnecting to non-CAISO grids.

Alternatively, Arroyo suggests that the solicitation protocol make specifying a price premium mandatory for consideration of each non-CAISO Offer for the short list, and also require a discussion of the specific means by which the Participant would move power to the CAISO, e.g. how it would secure transmission rights, imbalance and operating reserve services, and/or shaping and firming services. This might have the effect of reducing the number of Offers from projects outside the CAISO but it would better enable the PG&E team to evaluate the value and viability of these projects.

UTILITY OWNERSHIP ALTERNATIVES AND SITES FOR DEVELOPMENT

PG&E has developed protocols for evaluation of Offers that propose to sell the utility a site for development of renewable generation, to build and transfer to utility ownership a new facility, to provide the utility with an option to purchase a facility after some period of commercial operation, or to undertake joint development and/or joint ownership of a new facility. The evaluation of such Offers includes both an analysis of the economics of the project generation under utility ownership, analogous to the valuation of PPA Offers, as well as a consideration of the extent to which ownership of such a project is compatible with the utility's core competencies.

While PG&E's 2009 solicitation protocol and its Appendix K describe how the utility applies its valuation methodology to calculate the value of buyout options for the purpose of arriving at a net value for such ownership offers, there is relatively little specific guidance for Participants about how the PG&E team evaluates the tradeoff between a PPA Offer variant and a Purchase and Sale Agreement (PSA) Offer variant (e.g. build and transfer) for the same project. Nor is there much guidance regarding how the utility evaluates compatibility of owning a project with PG&E's core competencies.

It was evident from post-shortlist debriefings that Participants did not necessarily understand why PG&E arrived at a preference for a PPA vs. a PSA for a project offered for both alternatives. In the interest of transparency, Arroyo suggests that in future years the solicitation protocol and its Appendix K be edited to provide greater clarity on how these aspects of ownership Offers are evaluated differently from straight PPA Offers.

Similarly, some Participants who chose to offer a buyout option to PG&E failed to specify the option exercise price, which made it impossible for the team to value that variant of their Offer, even though the protocol explicitly stated the requirement to name that strike price. It is unclear to Arroyo how PG&E could revise its protocol to encourage Participants to be specific in their pricing of a buyout option.

COUNTERPARTY CONCENTRATION

In the 2009 RPS solicitation protocol, PG&E stated explicitly that it will consider its total exposure to volume of contracted deliveries from any individual counterparty as well as the volume already contracted with the counterparty in making short list decisions. Arroyo

regards supplier concentration as a legitimate business concern for the utility and its customers, both with respect to credit risk for the utility's supply portfolio as well as risk of development failure. Arroyo also views inclusion of this statement in the protocol as having enhanced the transparency of the solicitation process, since considerations of excess supplier concentration can motivate the exclusion of otherwise attractively priced and viable projects from PG&E's short list.

PG&E'S PREFERENCES REGARDING OFFERS

In addition to the various evaluation criteria, PG&E's solicitation protocol states two preferences regarding selection of Offers. In section III regarding Solicitation Goals, the section on contract term states that "Earlier deliveries are preferred to later deliveries." Arroyo views this as a reasonable preference to take into account when making a short list. PG&E has a legal obligation to meet near-term targets for RPS deliveries as a percent of total retail sales. Failure to achieve near-term RPS targets would lead to penalties for the utility. Also, projects that are offered with earlier on-line dates may in some cases bear less execution risk than projects with later on-line dates because more of the various hurdles of site control, permitting, equipment procurement, contracting with an EPC supplier, etc. may have been overcome for the former, while there may remain great uncertainty about resource quality or permitting for projects that are not anticipated to come on-line for five or more years.¹³

PG&E also states in its solicitation protocol a preference for projects that deliver power to "a nodal delivery point...within PG&E's service territory" over projects that deliver to CAISO interface points (e.g. the California-Oregon Border, or COB, or points such as Mead, Palo Verde, or Four Corners substations) or to "California locations outside of the CAISO's control area" (e.g. points within the grids of the Western Area Power Administration, or WAPA, Imperial Irrigation District, or IID, non-CAISO municipal utilities such as the Los Angeles Department of Water and Power, or LADWP, or non-CAISO rural electric cooperatives such as the Plumas-Sierra Rural Electric Cooperative), or to out-of-state locations.

Arroyo regards this as a reasonable preference, and appropriate to state in the protocol. Some of the operators of control areas external to the CAISO have in the past chosen not to provide services such as imbalance service or operating reserves that would be required to enable an intermittent generator such as a wind or solar photovoltaic facility that interconnects in their territory to schedule firm deliveries to a CAISO intertie. For other control area operators, there is a physical or market limitation on availability of transmission rights to wheel power within their territory from a generator to and across a CAISO interface point, as there has been on Path 42 between IID and Southern California Edison territories. For other control area operators that have in the past been willing to accommodate wheeling of intermittent generation through their grids by providing operating reserves and balancing services, the system cost of such transmission service is increasing,

¹³ With some offers, however, the reverse may be true: an earlier proposed commercial operation date may be indicative of an inexperienced developer who is unaware of the real barriers to achieving successful interconnection agreements, transmission development, local permitting, etc. and whose project schedule fails to reflect these.

and the operators are increasing wind integration charges or considering imposing them. The availability of third parties to provide the shaping and firming services needed to render out-of-state intermittent generation eligible under CEC guidelines has diminished. Consequently Arroyo views PG&E's lower preference for out-of-state power or power delivered into non-CAISO control areas as a legitimate business concern.

A third area where PG&E's solicitation protocol does not quite express a preference or an evaluation criterion is in contract language modifications. The protocol states that the utility will assess the materiality and cost impact of the Participant's proposed modifications to PG&E's Form Agreement or standard term sheet. The inference is that the utility will generally prefer Offers where the Participant submits revisions and comments to the Form Agreement with modest proposed changes to PG&E's standard terms and conditions over Offers whose mark-ups demand unreasonable and unfair concessions.

Arroyo agrees that one possible impediment to the viability of a project is a situation where the Participant demands concessions on contract terms that are unreasonable. Situations have arisen in the past where an RFO Participant has demanded unique and valuable concessions that PG&E has never granted to any other counterparty, and the negotiations have taken an inordinate amount of time to approach closure. (The utility would have the unappetizing choice between executing a contract that is overtly unfair to other parties, continuing to negotiate for month upon month, or walking away from the negotiation and forgoing a possibly attractive resource.) To the extent that unreasonable, unfair, or costly demands are exhibited in the Offer submittal of a marked-up Form Agreement, it would be better to detect these early and exclude an otherwise attractively priced and viable project from the short list than to proceed into negotiations that would likely lead to a failure to execute a contract that is fair to other counterparties.

While Arroyo views these preferences as legitimate business concerns and as factors that are reasonable for PG&E to consider in deciding which Offers to select or reject for its short list, Arroyo has a concern that the transparency of how such preferences affect Offer selection could be improved. In the debriefing sessions for non-shortlisted Participants it seemed that some were unaware of the economic unattractiveness of their proposed point of interconnection. Arroyo recommends that in future solicitations PG&E consider either incorporating these preferences as evaluation criteria in the protocol (analogous to supplier concentration and PPA modification) or grouping the discussion of the preferences in the section on evaluation criteria within the protocol.

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, PG&E decides which Offers to include on the short list. As stated in the solicitation protocol, the team ranks all conforming offers based on net value (taking into account transmission adders), then uses scores and information from the other non-valuation criteria to decide which Offers to include on the list, and which to exclude.

In conditionally accepting the 3 California IOUs' procurement plans for 2009 RPS solicitations, the CPUC noted that "each utility may apply its own reasonable business

judgment in running its solicitation, within the parameters” and guidance provided by the CPUC.¹⁴ This affords PG&E a certain degree of latitude in making decisions about how to incorporate information about evaluation criteria such as Project Viability and RPS Goals in selecting Offers. Unlike other utilities that employ a weighted average of scores for all evaluation criteria as a determinative measure to make selection and rejection decisions, PG&E can, up to a point, select lower-valued Offers or less-viable Offers that have superior or unique attributes in meeting RPS Goals, for example. A discussion in the next chapter of this report and in the confidential appendix describes issues that arose in making these trade-offs.

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.

1. MARKET VALUATION

PG&E’s valuation methodology has several advantages over methods used by other utilities:

- It is rooted in a comparison to market price forwards rather than to model outputs for hypothetical future market price based on inputs such as forecast demand, modeled supply increases, and fuel price scenarios.
- It is relatively rapid to turn around valuations of several PPAs at once, in contrast to the burdensome nature of running multiple cases of traditional utility production cost models with dozens of cases for each generating unit assumed built vs. assumed not built to calculate system cost differences between scenarios with each unit in vs. out.
- It uses a valuation concept that is generally accepted in the electric power industry.
- It provides an intuitive valuation based on the degree to which a generating unit is “in the money” with respect to market price

There are some drawbacks with this approach, some of which are common to any valuation methodology for long-term PPAs:

- Because western power market forwards are not liquid and transparent beyond a limited time horizon, PPAs that last for 25 or 30 years must rely on extrapolation of

¹⁴ California Public Utilities Commission, Decision 09-06-018, “Decision Conditionally Accepting 2009 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan Supplements”, June 8, 2009, page 4

market forward curves for valuation rather than on direct observation of traded prices for power two decades hence.

- A certain degree of interpolation or projection is required to achieve hourly granularity in price assumptions.
- In the absence of functioning, liquid, transparent markets in California for Resource Adequacy or for Greenhouse Gas compliance, the valuation must rely on fundamental forecasts for the value of capacity and of GHG compliance rather than on traded forward curves.
- The methodology assigns Resource Adequacy value to all offered facilities interconnecting within the CAISO except where the Participant explicitly identifies that it plans to interconnect to the CAISO as an energy-only resource. Such energy-only resources are deemed to have Net Qualifying Capacity of zero by the CAISO. The developer benefits by avoiding the cost of network upgrades for deliverability. However, PG&E ratepayers do not benefit from receiving Resource Adequacy value from the project, so it is appropriate to assign zero RA value in the valuation. Arroyo is concerned that an adverse selection bias may be present, in which only the most candid Participants will admit their intent to interconnect as energy-only resources, while others remain silent about such plans, obtain the benefit of RA value for the purpose of short-listing, and eventually fail to deliver RA benefits to ratepayers. Arroyo recommends that in future solicitations PG&E explicitly require Offers to describe whether their interconnection applications have been submitted or are intended to be as Full Capacity or Energy-Only resources. Arroyo also suggests continued vigilance be applied during negotiation of contracts to monitor whether projects continue as Full Capacity resources or switch to Energy-Only status.
- Arroyo has expressed to the PG&E team an analogous concern about the extent to which Offers for projects that propose to interconnect to the CAISO through the SGIP will actually deliver the full calculated amount of Resource Adequacy to PG&E customers, in the absence of a deliverability assessment. The valuation methodology credits these projects full RA value, but one can imagine an outcome in which such a project fails to deliver its proposed generation to the grid because of network constraints, or the CAISO counts less Net Qualifying Capacity than that calculated based on the proposed generation profile. There does not appear to be any mechanism in the current CAISO tariffs for small projects that interconnect through SGIP to obtain a delivery assessment and receive credit for delivering RA value, or provide that value to PG&E ratepayers.
- The approach used does not provide any direct insight into the cost of remarketing power when the utility must take delivery of an as-available generating resource and remarket the portion in excess of portfolio needs in off-peak periods. This is a feature of utility production cost models that provides some guidance regarding “portfolio fit” based on modeled unit commitment and dispatch outcomes.

- The methodology, given its inputs from forward curves, RA value and GHG compliance value assumptions, and discount rate, sometimes gives results that seem counterintuitive, such as preferring higher-priced but longer-term contracts to lower-priced but shorter-term contracts, or preferring PPAs with later on-line dates to earlier on-line dates, all else being equal. While such outcomes may appear counterintuitive, they can be explained by inspection of the data and input parameters and are consistent with the methodology. If the results run counter to the utility's or ratepayer's preferences, issues can be addressed through PG&E's flexibility to apply business judgment to its decisions.
- While the CAISO's Market Redesign and Technology Update (MRTU) has been implemented, the data history of nodal pricing outcomes is not yet extensive enough to use for valuing projects at congested nodal locations. The methodology relies on prior information to adjust valuation for nodal price issues. This may be remedied in future solicitations.

2. EVALUATION OF VARIOUS TECHNOLOGIES AND PRODUCTS

PG&E's evaluation approach for net value and project viability are essentially technology-blind. The project-specific inputs to the valuation model are contract price, timing, location, generation profile, and, if relevant, buyout price. These inputs do not specifically reflect the technology of the project. That being said, the cost of a project clearly affects the pricing offered by the developer, so higher-cost technologies tend to lose the competition, all else being equal. Similarly, wind generation often has a negative correlation with period of higher hourly or seasonal power market price, while solar generation tends to correlate with hours or seasons of higher price, so a wind project may on average lose to a solar project at the same contract price. These are features of the technology that are recognized by the valuation only through the economics of the proposed PPA, not through any particular bias for or against a technology.

In the case of buyout option or PSA offers, PG&E's protocol tends to avert ownership of technologies for which the utility lacks particular core competencies, so there probably is a bias against purchasing projects that the company is less well-suited to own and operate. This seems reasonable and appropriate, since it is not in ratepayers' interest for the utility to own generating facilities that require specific skills PG&E lacks (and the developer or another owner can provide) even if there might be some hypothetical advantage to utility ownership than independent power ownership through lower cost of capital. One might view this as a bias against buyout options or PSAs.

The Project Viability Calculator was designed to be technology-blind as well; the scoring criteria do not make provide for higher scores for specific technologies. However, the Calculator will return a lower score for a project that relies on a technology that is not well-commercialized, or that the developer (or affiliated members of its team) lacks prior experience developing, owning, operating, or financing, all else being equal. So in a sense the methodology will tend to discount projects based on newer technologies or on those that have not been implemented broadly at utility scale, and will tend to promote projects that rely on technologies that have found widespread market acceptance and have dozens of examples of 100+ MW installations. This means that, using the Calculator, IOU renewable

solicitations will not be likely to be the venue for adopting new technologies unless they have some striking advantage in price (which tends not to be the case for hardware that has not yet achieved manufacturing economies of scale). If all utilities followed this practice, or lacked specific programs to encourage investment in emerging technologies, one might envisage an industry whose conservatism prevented testing and adoption of new renewable technologies that offer the potential for superior performance and future cost reductions.

PG&E has attempted to facilitate short-term renewable power contracts (term less than ten years) by such initiatives as modifying its standard Form Agreement to accommodate such contracts, and crafting substitute language for the Form Agreement that more closely resembles industry standard agreements for short-term power transactions. One of the counterintuitive features of PG&E's valuation methodology, given its specific inputs, is that short-term contracts that are priced at what appears to be today's competitive market price for Western renewable power sales of one to three-year duration tend to appear worse in discounted net value than long-term contracts of 25 or 30 years duration whose contract prices start higher and escalate. Arroyo has concluded that it is generally inappropriate to compare a two-year contract to a thirty-year contract using PG&E's net value metric, and that it would be more appropriate to compare short-term PPA offers to other short-term PPA offers to make a judgment of their relative competitiveness. In a solicitation that accommodates both short and long-term PPA Offers, PG&E needs to use business judgment to override this feature of the methodology.

3. EVALUATION OF PORTFOLIO FIT

The approach PG&E employed in the 2009 RPS RFO to score Offers on portfolio differed from that used in prior years. The current approach has specific advantages:

- The numerical score is based on quantitative calculations or on technology-specific attributes, and is fairly objective in its development.
- The scoring for time of delivery is closely related to how well the generation profile of the project matches PG&E's contractually designed super-peak periods vs. night periods, which in turn are intended to reflect the match with PG&E's portfolio needs.
- The range of score from zero to 100 enables a reviewer to discern differences between offers more easily than the range of zero to 5 used in the 2008 RPS solicitation.

There are a few drawbacks to this approach:

- The methodology does not discern between how a contract might fit with PG&E's portfolio needs today (when the utility has little or no need for new baseload power) vs. needs a decade from now, when load growth and the retirement of older facilities might engender a stronger need for baseload power. Similarly, the methodology does not distinguish a short-term from a long-term Offer, though the latter might provide a better fit in the future given possible future portfolio needs.

- The methodology doesn't explicitly address the cost of remarketing power during off-peak periods, though it clearly recognizes the worse fit of resources that generate more in the early hours of the morning and more in spring rather than in summer.
- It may be difficult to accommodate the portfolio fit of certain technologies, such as solar thermal facilities with storage, in the framework being used. It is not clear whether such a facility that has a limited ability to schedule generation past the peak hours of insolation and a limited ability to respond to dispatch orders fits well into the existing scoring system for portfolio fit.
- In the greater scheme of things, the portfolio fit criterion does not appear to have as much impact as others such as market valuation, project viability, and RPS goals. To Arroyo's knowledge there has not yet been a situation where a renewable Offer's superior portfolio fit score has enabled it to be shortlisted despite inferior value or viability; nor has there been a situation where an inferior portfolio fit score has led an Offer to be rejected from a short list. While the ability to dispatch a renewable resource may confer a certain attraction to a renewable generation project from a system operator's point of view, it seems that on average such an operational benefit is generally outweighed by the costs required to achieve dispatchability.

4. EVALUATION OF BIDS WITH VARYING SIZES, IN-SERVICE DATES, AND CONTRACT LENGTH

PG&E's valuation methodology is essentially blind to project size; it does not consider the extrinsic variables of MW capacity or GWh volume as positive or negative factors but rather reduces the value of the Offer to a normalized \$/MWh metric. To the extent project size has an impact, it reveals itself in the proposed contract price if the technology is one that provides economies of scale and enables developers to propose lower prices for larger projects. This might be the case where fixed costs for elements such as switchyards, towers, steam turbines etc. can be spread over more MW capacity.

The viability scoring system, however, is not neutral to project size. It is evident that projects within California that can use the CAISO's Small Generator Interconnection Procedures (SGIP) will score higher for the Interconnection Progress criterion than any larger project that uses the Large Generator Interconnection Procedures (LGIP), except for those that have already progressed to the LGIP Phase II study or have obtained an interconnection agreement.¹⁵ This tends to favor projects with capacity of 20 MW or less. Under current conditions it does appear that the smaller projects using SGIP are less likely to experience the delays and upfront costs that are posing impediments to speedy completion of projects that are pursuing interconnection through LGIP.

Similarly, the larger the project, the less likely it is that the developer has succeeded in the past in developing similar or larger sized projects, owned and operated similar or larger sized projects, or financed similar or larger sized projects. So the Offer is likelier to score lower

¹⁵ On average, developers seem to prefer to have an executed PPA already in hand before paying the cost of a Phase II study, so it's less likely that Offers to an RFO that use LGIP are in Phase II already

on Project Development Experience, Ownership/O&M Experience, and Project Financing Status if the project is larger. Also, in the case of newer technologies where there is limited manufacturing capacity worldwide for key components, a larger capacity project may score worse on Manufacturing Supply Chain than a smaller one, all else being equal.

This creates an interesting situation where, hypothetically, very large projects can achieve higher valuations through economies of scale, but may suffer from lower viability scores if the Participant has never developed and operated a project on that scale previously, while very small projects may appear more viable when using the Project Viability Calculator, but may have worse valuations because they lack economies of scale and have offered a higher price.

Arroyo agrees that a developer who has never previously built, financed, or owned and operated a generation facility of the same or larger MW capacity as the current Offer may have poorer prospects for success in completing a facility on schedule than one who has two or more larger projects in her resume. This feature of the Project Viability Calculator, however, has the effect of “letting the rich get richer” by favoring Offers from developers who have successful track records and disfavoring those who lack large wholesale generation project experience. Whether this is fair or not isn’t obvious without more data on the relationship between prior project experience and success rate. But the methodology does seem to have the intended result of screening out Participants that cannot demonstrate prior success in wholesale generation project development, financing, and operation, consistent with an implicit assumption that such prior success is correlated with greater likelihood of commercial completion for the current proposal.

As described previously, PG&E explicitly prefers Offers which propose earlier commercial operation dates to later ones, and exercises this preference in making selections for the short list. The valuation methodology, using current inputs, exhibits a slight propensity to favor projects that start later rather than earlier, all else being equal (this is related to assumptions regarding power market prices, capacity value, and discount rate), but the preference for earlier CODs appears to swamp this small effect.

The valuation methodology similarly tends to favor contracts with longer duration to those with shorter terms, all else being equal.¹⁶ Since no Participants ever seem to propose both a longer and shorter duration contract at the same contract price, this is a very minor effect, typically swamped by the lower contract price offered for the longer-term contracts. There does not appear to be a countervailing effect in the viability scoring methodology, where one might think that contracts for a solar photovoltaic project with a 30-year term would be scored lower for viability than the same project contracted for a 20-year term, given the limited expected reliable lifetime of inverters and trackers, the limitations of photovoltaic panel warranties, and the likelihood of declining reliability over the longer time horizon. The scoring guidelines for the Project Viability Calculator do not appear to take such issues into account.

¹⁶ This is a feature of the inputs rather than the algorithm; with a modest discount rate and power market forwards that are extrapolated beyond a few decades, proposed renewable contract prices tend to fall below brown power market prices in the most distant years so that the longer the contract term is, the more valuable the overall contract is.

5. EVALUATION OF BIDS' TRANSMISSION COSTS

The valuation methodology has a complex set of algorithms and steps to assign proxies for actual transmission cost to the contract price of generation in order to compare Offers fairly, taking into account the cost of moving power from the delivery point to customers. These include estimates of the cost of moving power from non-CAISO delivery points to PG&E customers, and of the allocated cost of transmission network upgrades required to achieve deliverability for new generation facilities that propose to interconnect in congested locations. Many of the features of the transmission cost methodology are specified by regulatory decisions.

The methodology has a few strengths:

- It provides a means to level the playing field between Offers that deliver directly into PG&E's service territory at uncongested locations and those whose proposed facilities will require expensive new transmission upgrades and new substation facilities to maintain grid reliability.
- It provides a means to level the playing field between projects located within the CAISO and those delivering outside the CAISO for whom the cost of moving power to PG&E customers requires wheeling across foreign control areas, tariff payments to other transmission owners, and/or shaping and firming services needed to achieve firm scheduled deliveries into the CAISO in order to qualify as eligible renewable resources under CEC guidelines. Some of these distant projects may enjoy benefits of lesser permitting requirements, weaker environmental protections, less expensive land, easier and speedier procedures for interconnection, but the contract price offered for busbar delivery in a distant service territory does not reflect the full cost of moving the power to PG&E customers.

The transmission cost methodology also has some obvious drawbacks:

- The two-step process of calculating adders from the Transmission Cost Ranking Reports is so analytically burdensome that it slows the turnaround time of the valuation ranking. Combined with the rather large response to this year's solicitation, the burden of the TRCR methodology prevented the PG&E team from completing a short list that takes into account the transmission adders before it met with the Procurement Review Group for discussion and guidance on the draft 2009 short list. The transmission analysis takes up valuable team time that could have been used for quality control and error checking, and it would be better to present the PRG with a draft short list for discussion that incorporates both the transmission analysis and a degree of additional quality control.
- The use of proxies such as published transmission tariffs or estimated costs for alternative commercial arrangements may understate the actual cost of moving power to PG&E customers from other control areas. Arroyo notes that the market price of shaping and firming services (that would be required to render out-of-state intermittent power RPS-eligible) has escalated substantially from past years, reflecting the risk associated with providing such services and the increasing cost of doing so.

Also, the cost of non-CAISO control area operators providing operating reserves, imbalance services, and wind integration services do not appear to be fully reflected in the proxies. Arroyo is concerned that the use of proxies that do not fully reflect the ultimate cost of delivering power to PG&E customers might create an unfair bias in the valuation methodology that favors out-of-state projects and those in-state projects that deliver into non-CAISO territories. This concern is mitigated somewhat by the PG&E team's use of its stated preference for deliveries into the PG&E service territory over deliveries into non-CAISO control areas when making a short list.

- It is difficult to explain to Participants how the transmission analysis affects the valuation of their Offers. Despite the fact that the solicitation materials provided a discussion of TRCR adders, it was clear that some Participants proceeded to propose new facilities sited in highly congested transmission clusters. Because these new facilities would likely require major capital expenditures to effect grid upgrades, and because the expenditures would be allocated to very few new generation projects (most experienced developers or those with knowledgeable transmission consultants seemed to avoid the most congested clusters), the proxy costs for transmission were quite high and when added to contract costs tended to disqualify these proposals from the short list. It was clear from debriefing sessions that some of the developers, particularly those less knowledgeable about grid issues, were completely unaware that their proposed project sites are very unattractive from a transmission point of view. Arroyo considers the solicitation materials to be fairly transparent in describing the transmission methodology, and is at a loss as to how PG&E could help the developer community become better informed about the subject.

6. EVALUATION OF BIDS' PROJECT VIABILITY

The implementation of the Project Viability Calculator as a screening tool for use in the evaluation of Offers has brought several advantages:

- The Calculator is a step in the direction of more standardized evaluation of viability across all three IOUs.
- The Calculator provides a broader set of criteria by which projects are assessed than was the case with PG&E's prior approach to scoring viability.
- The range of scores from zero to 100 gives more visibility to differences between projects.
- The methodology allows PG&E to use both the more standardized tool as well as business judgment in taking project characteristics into account when making short list decisions.

There are still opportunities to improve the use of the Calculator.

- The scoring guidelines for the Calculator are sufficiently ambiguous that reasonable individuals scoring the same project can arrive at different results. When the scores

rated by Arroyo and the PG&E team were compared, the variance between scores had a standard deviation of 13 points.¹⁷ This suggests that the Calculator is still a crude tool with a lot of noise in the scoring process, and that differences of only two or three points between projects should not be regarded as determinative in selecting one and rejecting the other because the difference falls within the error of the analysis.

- There is a future opportunity for the individual scorers within the PG&E team to achieve greater consistency in how they interpret the scoring guidelines as the team gains greater experience in using the Calculator.
- Arroyo does not regard some of the criteria in the Calculator as providing particular insight into the likelihood of successful project completion. For example, the score for Transmission Requirements depends simply on when access is expected, and not on the degree of difficulty or cost anticipated for achieving the network upgrades required to provide transmission access while maintaining grid reliability and achieving deliverability for the project. For example, Arroyo would view a project that depends on a half-billion-dollar transmission upgrade requiring the acquisition and permitting of dozens of miles of right-of-way as more risky with respect to schedule than one that requires an upgrade to a single distribution substation, even if they have the same proposed timing for access.
- Some of the Offers were scored low simply because the Participants omitted basic information about their projects, even though upon debriefing it became clear that full disclosure would have resulted in a higher viability score. It is unclear to Arroyo how this could be improved in the future, since the solicitation materials clearly stated what information was required.

7. OTHER ISSUES

PG&E's methodology has several other strengths in general not related to specific evaluation criteria. For example, use of an Independent Evaluator and subjecting the draft short list to review and comment by the Procurement Review Group introduces a window into sharply different opinions about what the utility's priorities should be, which is particularly helpful when subjective judgment is used to weigh conflicting criteria such as value, viability, and RPS goals. The utility took several suggestions by the IE and PRG members into account in assembling its final short list.

Feedback from non-shortlisted Participants provided some insight into other strengths of PG&E's solicitation process compared to other utilities.

- The bidders' conference was cited as being quite helpful in clarifying solicitation objectives, evaluation process, and requirements.

¹⁷ The averages of Arroyo's and PG&E's scores for the Offers were only two points apart. Arroyo found the comparison between scores to be helpful to diagnose issues with specific projects and to identify errors made by either scorer, as opposed to stimulating arguments about which score was "right".

- The solicitation materials were regarded as clear and straightforward.
- While frustrated by PG&E's policy of not disclosing detailed information about the nature of the short list, and the utility's unwillingness to provide second chances to improve rejected Offers, Participants appreciated the opportunity to be debriefed about the reasons why their Offers were rejected because they could gather information on how to make their projects more competitive in future solicitations.

D. FUTURE LCBF METHODOLOGY IMPROVEMENTS

The methodology employed by PG&E has undergone repeated refinement, motivated both by internal choices within the utility and external impetus by the regulator. Most of these have provided incremental improvements to the methodology. Arroyo can at this point only suggest a few modest changes that may further improve the means by which PG&E evaluates Offers or the transparency with which Participants can view the evaluation process.

TRANSPARENCY

One set of suggestions would seek to address the sense, arising from debriefing non-shortlisted Participants, that comprehension of how PG&E evaluates and selects Offers among the developer community could be improved. This could lead to reduced wasted effort on the part of developers in promoting projects that are unlikely to be selected, and reduce the amount of wasted effort within the utility as it attempts to analyze Offers with poor viability and low value. Some ideas could include:

- Including a walk-through of the scoring guidelines for the Project Viability Calculator in the bidders' conference, to explain what specifically needs to be demonstrated within the text of the Offer and why it affects the viability score (e.g. identifying whether and how site control has been achieved, and naming the EPC contractor if it has been selected);
- Including the scoring guidelines for all twelve criteria used in the Calculator and not just the EPC Experience criterion within the body of the solicitation protocol, rather than a website reference, or within Appendix K;
- Describing in the bidders' conference which clusters in PG&E's service territory are the most congested, perhaps in terms of ranking by the proxy \$/kW cost that is provided by PG&E's TRCR for network upgrade costs that would be allocated to generators choosing to interconnect there, based on the total MW range of possible new generation that was analyzed for the TRCR. This could give developers more of a sense of which sites are disadvantaged by congestion issues;
- Editing the solicitation materials to emphasize the need for out-of-state projects to provide both a busbar contract price and a price premium for delivery to the CAISO, and to clarify that for projects proposing to interconnect in non-CAISO control

areas within the state the need to explicitly identify how the power would be moved to a CAISO interface;

- Stating within the protocol the types of relevant costs (such as firm transmission, imbalance costs, operating reserves, and shaping and firming fees if appropriate) that would need to be covered by the price premium to move power from a foreign control area to the CAISO, in an effort to motivate Participants to provide more accurate, more realistic, and more complete information about how they would deliver their energy, or alternatively educating them about the disadvantages of siting an intermittent generation project in a control area whose operator will not support proposed exports to the CAISO with operating reserves and imbalance services;
- Clarifying the extent to which transmission adders would be added to the economics of out-of-state projects that propose to deliver at far distant substations such as Moenkopi or Four Corners, despite the fact that these serve as CAISO scheduling points;
- Editing the solicitation materials to clarify that, in addition to the various evaluation criteria, PG&E will use its preferences regarding delivery point and timeliness of commercial operation date to make selection and rejection decisions for the short list (or, alternatively, relabeling those two preferences as evaluation criteria); and
- Editing the solicitation protocol to provide a fuller description of how Offers for utility ownership (including PSAs, PPAs with buyout options, and joint development and/or joint development) are evaluated and what unique characteristics of offered projects would render them attractive or unattractive to the utility as candidates for ownership.
- In the Decision approving the IOU's 2009 procurement plans, the CPUC specified that the utilities should conduct special outreach activities to highlight the unique opportunity to develop new renewable generation in the Imperial Valley now that the transmission investment in the Sunrise Powerlink is approved (by, for example, ordering that each IOU conduct a special bidders' conference to highlight the Imperial Valley opportunity). Similarly, the Decision called for specific monitoring by the Energy Division of the outcome for Offers located in the Imperial Valley in the 2009 RFOs. However, the Decision also stated that "Monitoring does not mean that preference is given to Imperial Valley developers" and "Providing a preference for Imperial Valley resources (which is denied to others) generally conflicts with LCBF principles."¹⁸

Based on debriefing sessions with non-shortlisted Participants, it is evident that some developers understood the special outreach and special monitoring to imply that Offers for projects in the Imperial Valley would receive special preference by PG&E.

¹⁸ California Public Utilities Commission, Decision 09-06-018, "Decision Conditionally Accepting 2009 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan Supplements", June 8, 2009, pages 16, 17

In reviewing the solicitation materials, including the presentation at PG&E's special bidders' workshop on the Imperial Valley, Arroyo found no statement or suggestion that the utility would provide any special preference to Imperial Valley renewable projects. (The materials did state that PG&E encourages Offers for projects located within the Imperial Valley, and that the special conferences were intended to increase the likelihood that developers will propose viable, competitively priced projects in the Imperial Valley). As was feared by at least one member of the PRG, the special outreach efforts, despite the careful wording of the solicitation materials, appear to have led to a misimpression among some developers that a preference would be given to Imperial Valley developers.

Arroyo's suggestion is that, should the situation arise again to conduct special CPUC-directed outreach for particular opportunities, that the solicitation materials also emphasize that LCBF principles will be followed in PG&E's evaluation and selection procedures and that no special preference will be provided (unless of course the CPUC decides in the future to mandate a preference).

- The offer submittal deadline stated in the solicitation protocol was 10 a.m. Pacific Time on August 24, 2009. In the 2008 RPS solicitation, the utility was plagued by Offers that were delivered the day after the deadline date. The choice of a specific deadline of 10 a.m. was intended to avoid that outcome. Arroyo notes that package delivery services such as FedEx and United Parcel Service offer an early next-business day service that is supposed to achieve delivery by 8 a.m. to PG&E's offices in San Francisco. Some Participants took the extraordinary step of flying to San Francisco with their Offer materials in order to ensure that their delivery met the 10 a.m. deadline. Arroyo wonder whether in future a better choice might be to reset the deadline to noon, in order that, on one hand, the PG&E team and IE can begin the Offer Opening process in the morning as package deliveries start to arrive, while on the other hand out-of-town Participants will not feel pressured to hand their Offers to the team in person at some incremental expense.

VALUATION INPUTS AND PARAMETERS

Arroyo has a few suggestions for improving the methodology for assessing the net value of Offers:

- Use the discount rate employed by the Energy Division in calculating the Market Price Referent, which is based on an estimate of the cost of capital for power developers, rather than a discount rate based on PG&E's authorized cost of capital. Arroyo believes that given the variety of risks that face renewable project development (permitting, site control, interconnection, equipment procurement, financing, etc.) it is more appropriate to discount the expected future benefits and costs of the projects using a higher discount rate representative of the riskier independent power industry, rather than the lower discount rate of a regulated monopoly. One effect of using the lower utility discount rate is that it overemphasizes the value to ratepayers of the last decade of project operation, including years after 2020, for which the extrapolation of power market pricing provides a picture of valuation that is tenuous at best. Arroyo believes that

developers appropriately use a higher discount rate than PG&E's authorized cost of capital in making their decisions about contract price, despite the fact that once contracted the project revenue is essentially secured by PG&E's credit.

- Investigate the extent to which the CAISO will actually grant PG&E and its customers the Resource Adequacy value for the generation profile of intermittent generation that interconnects through SGIP. Arroyo is concerned that assuming full RA value for small projects that will not undergo the scrutiny of a CAISO deliverability assessment may lead to a situation where SGIP-based projects are shortlisted assuming they will deliver RA value to ratepayers but later fail to actually deliver that value. If so, Arroyo recommends that such projects should not receive credit for RA benefits in the LCBF valuation. Perhaps they should be required to use the LGIP to obtain deliverability assessments, or they should be repriced to match the lower value they will deliver to PG&E customers without such assessments.
- Require projects that are seeking CAISO interconnections through the LGIP to state explicitly in their Offer whether they are pursuing energy-only status and avoiding the costs associated with network upgrades for deliverability. Such projects should not be credited with RA value in the evaluation, and it would be better to identify these situations early, as well as to monitor for those projects that switch to energy-only status after the short list is finalized so that their value to ratepayers is diminished with no concomitant reduction in contract price.
- Codify the procedures for assigning non-PG&E transmission adders to projects into a (nonpublic) protocol. The valuation methodology would benefit from an effort to achieve greater internal clarity and consistency in how decisions are made for assigning transmission adders for moving power from other states to the CAISO, for delivering power at CAISO interface points outside PG&E's territory, and delivering into non-CAISO control areas. It would be particularly helpful to codify precedents that have been made in prior RFOs regarding when and where to use TRCR adders vs. the cost of alternative commercial arrangements, in order to improve the consistency with which Participants and Offers are treated.
- Require that PG&E's subcommittee on ownership eligibility review all shortlisted Offers that involve utility ownership, including PPAs with buyout options. Arroyo noted that one Offer was shortlisted because the Offer variant with a buyout option proposed an attractively low strike price for PG&E to purchase the facility at its option. The valuation of that buyout option variant was quite high among the rankings. However, the valuation of the Offer if the buyout option were not exercised was substantially lower. So this Offer was only quite attractive in value if PG&E were to exercise its option to acquire the facility. Arroyo was concerned that there was apparently no buy-in required of the team responsible for considering such ownership for the PPA-with-buyout-option variant. This creates the possibility that a PPA-with-buyout Offer would be short-listed based on its attractive buyout price

but that the facility itself would turn out later not to meet PG&E's criteria to own the project and the straight PPA valuation would fail to meet the value cutoff.¹⁹

VIABILITY

With the introduction of the Project Viability Calculator as a tool for use in assessing the likelihood of projects achieving successful operation come some opportunities for the Energy Division and the IOUs to evaluate its use and possibly implement improvements for the future.

- There is an opportunity to refine the scoring guidelines for the Calculator. It became evident that reasonable people scoring offers could arrive at different interpretations of the guidelines, and that there are gray areas that require judgment. For example, one scorer might regard a developer's prior experience constructing and operating small photovoltaic installations that reside on a customer's premises beyond the meter as the basis for a high score on Project Development Experience, while another scorer might view these projects as not representing "wholesale generation" and therefore assign a zero score.²⁰ Similarly, one scorer might view a photovoltaic Offer for which the developer estimates direct net irradiance based on publicly available government-published data for a nearby weather station as deserving a score of 10 for Resource Quality, while another scorer might assign a 5 to the same Offer because it does not cite a third-party resource assessment or measured irradiance at a comparable photovoltaic facility in the region.
- Even if the text of the scoring guidelines is not revised, there is an opportunity for the PG&E team to take additional action towards a more uniform interpretation of the guidelines among scorers. This might be as simple as a pre-RFO internal workshop to discuss the gray areas in the guidelines and come to some common understanding of how best to deal with ambiguities. Or it might be a chapter in PG&E's nonpublic internal protocol for Project Viability that outlines additional guidance to clarify how the team might best deal with ambiguities or gray areas in the Calculator scoring guidelines. In the 2009 RFO, the PG&E team made substantial efforts to achieve consistency in scoring, and some of these ambiguities became evident only after internal review of preliminary scores led the team to revise them to improve the consistency of scoring; it is clearly a challenge for any team of scorers to approach perfect uniformity.
- It would be helpful for the CPUC or its staff to clarify for IOUs whether the required use of the Calculator applies to Offers for existing facilities. The Energy Division had prepared a Staff Proposal regarding the method for evaluating project viability, in which it proposed that "IOUs are required to apply standardized PV

¹⁹ For the actual Offer in question, the valuation of the straight PPA with no buyout option exercise was much lower but still above the value cutoff so the concern Arroyo expresses is relevant for future solicitations but not for the current situation.

²⁰ At least one Participant noticed this feature of the scoring guidelines and asserted that its prior experience installing customer premises equipment beyond the meter constitutes wholesale generation experience.

criteria to existing Commission-approved projects that are not forecast to be online within the next 6 months.”²¹ This would imply that PG&E is not obligated to use the Calculator to evaluate the viability of facilities that are already on-line. However, it is not clear to Arroyo whether this element of the Staff Proposal has taken effect, nor can Arroyo find other regulatory guidance about an exemption for existing facilities from use of the Calculator in evaluating viability. One might surmise that any existing facility is more viable than any not-yet-existing facility, and that using the Calculator to evaluate existing projects may be wasteful of the team’s time, but there may be exceptions as described in the confidential appendix to this report.

- The Calculator as currently constructed assigns a score for Permitting based on whether the developer has applied for permits, has achieved data adequacy for permit applications, or has obtained its permits. The score does not reflect the expected difficulty of obtaining permits. Arroyo suggests that the Energy Division consider including some judgment about the degree of difficulty of successful permitting in possible future revisions. A later chapter describes how some Offers were evaluated to be at risk for project failure due to serious environmental concerns that could lead to permitting failure, despite achieving moderately high viability scores using the Calculator.

PORTFOLIO FIT

Arroyo questions the relevance of PG&E’s methodology for scoring Offers for Portfolio Fit. The CPUC has very clearly enunciated that IOUs should use a methodology that leads to selection of least-cost, best-fit resources.

However, Arroyo notes that the degree to which a proposed new resource fits well or badly into PG&E’s existing and planned portfolio of supply resources is largely captured already in the valuation methodology. For example, the increased value of power delivered in super-peak hours and peak seasons vs. the decreased value of power delivered in night hours and off-peak seasons is captured by the valuation algorithm. The updated methodology to value the Resource Adequacy benefits of new resources also captures the unique contribution of those generators in peak hours when resources are most needed to meet customers’ reliability needs. PG&E’s valuation methodology is designed to address the particular value to customers of the flexibility of dispatchable resources over as-available resources. So to a large extent the valuation methodology has been constructed to reflect in dollar terms the value of both the firmness and time-of-delivery characteristics of Offers.

Also, the existing and prior methodologies for evaluating Portfolio Fit in PG&E’s RPS RFOs do not directly address the question of when baseload resources will be needed for the portfolio or when peaking resources will be needed. There is no direct connection between the timing of portfolio needs and the score assigned to Offers based on the on-line date for the Offer. In contrast, when PG&E evaluates bilaterally negotiated contracts for Portfolio

²¹ Energy Division of the California Public Utilities Commission, “Attachment B: Staff Proposal to refine Project Viability Evaluation Methodology”, page 5, attached to “Assigned Commissioner’s Ruling Regarding Potential Renewables Portfolio Standard Development in Imperial Valley and Evaluation of Renewable Procurement Contracts”, February 3, 2009

Fit and then seeks regulatory approval for them, the utility usually provides in its filing some insight into when the particular shape or seasonality of the proposed resource will be needed, with reference to the utility's resource plan. (Note that the bilaterally negotiated resources are not scored with the same methodology as Offers in the RPS solicitation).

Therefore Arroyo surmises that most of the relevant features of an Offer's fit with PG&E's portfolio needs are already captured by PG&E's valuation methodology, and the scoring of the Offer separately for Portfolio Fit is largely redundant. Arroyo observes that Southern California Edison appears to have captured its assessment of Portfolio Fit within its particular valuation methodology and apparently does not employ a separate scoring for Fit.

It is hard to imagine a renewable resource whose Portfolio Fit characteristics are so superior that a reasonable person would select it for the short list despite deficiencies in value or viability, or a resource so inferior in Portfolio Fit (say, a non-dispatchable generator that produces power only between 1 a.m. and 4 a.m. in the springtime) that it would be rejected from the short list despite superior value and viability. Arroyo is not aware of any short list selections or rejections by PG&E that have been motivated primarily by a Portfolio Fit score. So Arroyo suggests the possibility that the scoring of Offers for Portfolio Fit be dropped in PG&E's future solicitations unless such a special case or a need for a tie-breaker arises.

4. 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 2009 renewable solicitation was conducted fairly. Arroyo's overall conclusion is that the process was conducted in a fair and generally consistent manner, with some issues in the process worthy of detailed review. Arroyo disagreed with PG&E about selection of some specific Offers for the short list, based on disagreements about the project viability of the Offers. This chapter discusses the process of how PG&E developed a final short list to submit to the CPUC.

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 all bids treated the same regardless of the identity of the bidder?
- Were bidder questions answered fairly and consistently and the answers made available to all bidders?
- Did the utility ask for "clarifications" that provided one bidder an advantage over others?
- Was the economic evaluation of the bids fair and consistent?
- Was there a reasonable justification for any fixed parameters that were a part of the IOU's LCBF methodology (e.g., RMR values; debt equivalence parameters)?
- What qualitative and quantitative factors were used to evaluate bids?

Some other considerations appear relevant to reviewing PG&E's administration of its methodology. The application of subjective business judgment in bringing multiple non-valuation criteria to bear on decision-making, rather than a 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 or PG&E's preferences 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 evaluation criteria and preferences that were publicly made available in the solicitation protocol to Participants prior to Offer submittal?

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, including detailed information about transmission adders applied to Offers. 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 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.

Additional elements of Arroyo's approach for evaluating the fairness of the evaluation and selection 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 the utility ranked an Offer much higher than the IE or vice versa), 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 Arroyo;
- Checking intermediate analysis and inputs to the valuation model, e.g. assignment of Offers to nodes and to transmission clusters, for accuracy and consistency;
- Comparing the question-and-answer information posted on PG&E's public website to ensure that answers provided to any Participant in the course of the bidders' conference and workshop were made available to all Participants;

- Auditing direct communications between PG&E and Participants during the evaluation process to check whether any individual Participant was advantaged by requests posed or information provided;
- Reviewing in detail PG&E's decisions to reject Offers for nonconformance with the requirements of the Solicitation Protocol; reviewing the utility's decisions to accept for evaluation Offers that Arroyo would have regarded as nonconforming;
- Reviewing PG&E's decisions to reject Offers for low scores in non-valuation criteria, or based on the utility's stated preferences, and independently reviewing whether those low scores in non-value criteria were reasonable;
- Reviewing in detail PG&E's decisions to accept to the short list Offers that the utility team scored low for valuation or other non-valuation criteria; and
- 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 nonconformance with the requirements of the Solicitation Protocol.

PG&E rejected one Offer that proposed the sale of a site for development. PG&E's solicitation protocol specified that Offers for sites for development should include, among other content, page D-1 of the standard offer form that provides a project description, a description of "Existing energy resource surveys of any natural resource or energy generation potential", and a price or other consideration that the Participant seeks for the site. This Offer did not contain such information. Arroyo agreed with PG&E that the degree of nonconformance with the requirements of the solicitation merited rejection of the Offer.

PG&E rejected another Offer that appeared to propose a PPA for renewable power. The Offer package omitted the required offer form Attachment D, and failed to provide most required elements of the package, such as a marked-up version of Attachment H (the Form Agreement), Attachment A (a signed copy of the Solicitation Protocol Agreement), detailed descriptions of the site and the permits required, a site map, a project milestone schedule, a description of the proposed interconnection to the grid and the status of the interconnection application, and several other key components. Arroyo agreed with PG&E that this Offer was so incomplete as to merit rejection for nonconformance.

In Arroyo's opinion, one other Offer approached these two in its degree of incompleteness, to the point that a reasonable person could well have chosen to reject it for nonconformance. This is described in greater detail in the confidential appendix to this report along with a discussion of whether the choice not to reject the Offer for nonconformance was fair to Participants who submitted conforming Offers.

Also, in the days immediately following Offer Opening, some Participants sent PG&E corrections and changes to their previously submitted Offers. Arroyo notes that some of these were prompted by deficiency notices e-mailed to the Participants by PG&E, while others were unprompted voluntary efforts of the Participants to address errors they recognized only after shipping the original Offers. Arroyo does not consider the changes, even improvements, in these Offers to have been prompted by “signaling” by PG&E or by an unfair request for “clarifications” by the utility. However, in three cases, entirely new proposals for other projects or variants from original Offers were submitted by Participants after the Offer Opening deadline. Both PG&E and Arroyo considered these to be nonconforming Offers and they were not evaluated for the RFO, nor were they placed on the short list though some of them would likely have met PG&E’s evaluation criteria for selection.

Arroyo expressed a concern about how to distinguish between Participants’ efforts to correct errors and deficiencies in submitted Offers and the efforts of Participants to improve their Offers after the deadline. This is a gray area. Arroyo believes that there is some point at which accepting changes to Offer packages made by one Participant becomes unfair to all other Participants. Arroyo does not believe that accepting the specific corrections to Offers that PG&E countenanced in this solicitation was unfair.

D. REASONABLENESS AND FAIRNESS OF PARAMETERS AND INPUTS

The vast majority of the many parameters and inputs that PG&E used in its evaluation of the 2009 RPS RFO Offers were reasonably and fairly chosen, in the opinion of Arroyo Seco Consulting. Arroyo identified only one issue regarding the choices PG&E made about parameters and inputs that merits discussion.

PG&E used a discount rate of 7.6% to bring future Offer costs and benefits to a 2010 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.

Arroyo questions 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 Energy Division’s 2009 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 7.67% compared to PG&E’s authorized 6.05%, and the assumed cost of equity underlying the proxy plant developer was 11.96% compared to PG&E’s authorized 11.35%.²²

Arroyo asserts that the flow of net benefits of power deliveries from independent power companies contracting in long-term PPAs has more risk associated with it than PG&E’s risk

²² California Public Utilities Commission, Resolution E-4209, December 18, 2009, page 20

(e.g. higher credit risk, bankruptcy risk, liquidity risk, development 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 8.25% after-tax WACC for the proxy plant used in the 2009 MPR model than to the regulated utility's 7.6%.

Some might argue that once the generation project is contracted with PG&E for its output, the net benefits of its production should be discounted at PG&E's lower cost of capital because the project takes on the risk characteristics of the regulated utility that supports the project's credit with a PPA. Arroyo finds this a dubious proposition and would argue that the innumerable risks that utility customers face in taking delivery of electricity from an industry fraught with risks and a fair likelihood of failure to successfully complete projects on time imply that the cash flows of the generating project should be discounted using a higher, industry-appropriate cost of capital.

Arroyo's opinion is that use of the utility's lower cost of capital results in valuations that overstate the importance of the most distant years of contract term, when the methodology depends on extrapolated market forward prices. Arroyo views this as a distortion that skews PG&E's value rankings towards preferring long-dated PPAs, projects with later on-line dates, and in some cases utility buyout options over straight PPAs.

PG&E has a variety of internal controls in place to ensure that its selection of inputs and parameters are reasonable and fair. The Energy Supply organization relies on a separate and independent risk management function for oversight on power market assumptions used in valuation, and on a financial function for oversight on financial assumptions. The choice of parameters is described in internal nonpublic protocols available to the RFO evaluation committee and its management. Additionally, the IE has the opportunity to review the inputs to the valuation model in detail and to raise questions with the team as appropriate.

E. THIRD-PARTY ANALYSIS

PG&E did not outsource any portion of the offer evaluation to Arroyo Seco Consulting or to another third party. Arroyo did participate in discussions with the PG&E team regarding rankings, scoring, and attributes of the offers, but the underlying scores and calculations involved in assessing offers against evaluation criteria were performed by the PG&E team.

F. TRANSMISSION COST ADDERS AND INTEGRATION COSTS

PG&E generally 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 specific delivery points, interface points, or market hubs, and in some cases used estimates of the cost of alternative commercial arrangements as the proxy for the cost of moving power from market hubs to the CAISO. 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. This is a great deal 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 for creating a short list.

Arroyo identified two types of errors that occurred in the course of this transmission analysis. In one set of cases, a transmission cost adder for moving power from non-CAISO service territories to the CAISO was applied to Offers that actually propose to interconnect directly to transmission lines or substations that are within the CAISO jurisdiction. This overstated the cost of delivered power of the Offers, assigning them a lower value than would be fair and consistent with past practice.

In another case, a TRCR adder was applied to Offers that proposed a specific delivery point at the boundary of the CAISO. In a prior solicitation, PG&E had developed an estimate of the cost of alternative commercial arrangements for taking power delivery at that point and applied that lower adder to the evaluation of a prior project rather than the higher TRCR adder. As a consequence, Participants that submitted the Offers that proposed the same delivery point this year were scored unfairly (or at least inconsistently) for value compared to the prior developer. After the inconsistency was detected the PG&E team agreed that the lower adder should have been applied. These Offers were not selected for the short list.

In both cases, Arroyo concludes that even had these Offers been analyzed correctly and in a manner consistent with past practice, their selection for or rejection from the short list would likely not have changed. The difference in adders would not have sufficiently changed their value ranking, or the Offers would have been rejected based on non-valuation criteria anyway. Arroyo concludes that the overall treatment of the Offers was fair despite inconsistent treatment, since a correct transmission analysis would not likely have resulted in a different short list outcome.

G. PG&E'S USE OF ADDITIONAL CRITERIA AND ANALYSIS IN CREATING 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 (including the impact of transmission adders) and to:

1. Reject Offers judged to be non-conforming;
2. Reject Offers for Sites for Development and PSAs that did not pass a screening against PG&E's Ownership Eligibility and Cost Protocol;
3. Prioritize among Offer variants (e.g. straight PPA vs. PPA with buyout option, or 20-year contract vs. 25-year contract, or flat price vs. escalating price) based on valuation, selecting the most valuable variant for ranking;
4. Reject Offers regardless of value or viability that scored very low on the RPS Goals criterion because of serious environmental concerns;
5. Reject Offers that scored below a selected cutoff for net value;

6. Reject Offers that scored below a selected cutoff for viability score;
7. Rejecting a set of Offers that proposed to deliver at busbars outside the CAISO or at interface points of the CAISO based on PG&E's preference regarding delivery point and a judgment that there was no clear means to manage delivery to the CAISO, though the Offers met the valuation and viability screens. Also, prioritizing among another set of Offers that proposed to deliver outside the CAISO or to a CAISO interface point, rejecting Offers that are less attractive by virtue of size even if their valuation is attractive (these Offers will likely require third-party shaping/firming services to achieve eligibility as RPS resources; such services have limited availability and PG&E considered it appropriate to further reduce the total MW of offers requiring such services);
8. Reviewing Offers from counterparties for whom accepting all high-valued and high-viability proposals would lead to excess supplier concentration; prioritizing among Offers from each counterparty to select which ones to select for the short list by virtue of highest value, viability, and/or RPS Goals score, rejecting others once a threshold of excess concentration is reached;
9. Selecting certain Offers that met the valuation cutoff but fell below the viability cutoff, in the interest of achieving greater portfolio diversity (based on technology) in the short list;
10. Rejecting Offers whose proposed commercial operation dates were in the more distant future;
11. Placing Offers that were below the valuation and/or viability cutoffs, but that scored high on the RPS Goals criterion by virtue of being developed by entities certified by the CPUC Clearinghouse as Women-, Minority-, or Disabled Veteran-Owned Business Enterprises, into a special category in which the developer was offered an opportunity to improve the contract price, with a possibility to be selected for the short list if the improved net value achieved a specific threshold, regardless of viability score;
12. Switching from one Offer to another in the case of one Participant who withdrew the Offer that was shortlisted. The replacement Offer had passed the screens for valuation and viability but had been rejected in step #7 above because of its large size; however, the Participant notified PG&E that the Offer was being reduced in MW capacity, bringing it into the range the utility considered acceptable;
13. Switching from one Offer to another in the case of a Participant who, upon being provided with notification that one Offer had been short-listed, gave PG&E updated information about its other Offers. Between Offer Opening and the point in time where PG&E and the Participant discussed the short-listing decision, the developer had advanced other projects to the point that another Offer provided higher valuation, an equal viability score, and a superior delivery point than the Offer PG&E selected for the short list. Arroyo concurred with the decision to switch Offers when the updated information became available; and

14. Deleting from the final short list those Offers whose Participants chose to enter exclusive negotiations with other utilities after notification, or that failed to post the required Offer deposit in a manner meeting PG&E's credit requirements.

Using this overall logic, a preliminary draft of a short list was developed that fell within the volume target for the RFO, and was reviewed by PG&E's Procurement Review Group. PG&E further revised the draft based on guidance and commentary from the PRG. This section focuses on the specifics of how PG&E applied evaluation criteria other than valuation and viability, and applied stated preferences in administering its selection process.

1. UTILITY OWNERSHIP

PG&E uses a nonpublic internal protocol for evaluating offers for ownership, including Sites for Development, buyout options, joint development and/or joint ownership, and Purchase and Sale Agreements. While the solicitation protocol provides detail on what additional information a Participant should provide when proposing such an Offer for utility ownership, it is not particularly revealing about how such Offers are evaluated against criteria other than valuation. Arroyo suggests that, in the interest of transparency, in future solicitations PG&E should provide greater clarity on what high-level factors enter this evaluation.

In the case of Offers for utility ownership that were rejected from the shortlist, Arroyo reviewed the logic for the decisions to reject and concurred with PG&E's choices. More detail is provided in the confidential appendix to this report.

2. SERIOUS ENVIRONMENTAL CONCERNS

Appendix K to PG&E's 2009 solicitation protocol states various attributes of a renewable project regarding which Offers are scored to arrive at a rating for support of RPS Goals. Among these is "environmental stewardship", which is identified in the CPUC's Decision 04-07-029 as one of a few designated "qualitative attributes" that the Decision allowed the IOUs to use as the basis for including Offers on a short list, subject to (1) the Offer being within reasonable price proximity to others selected and (2) support from the utility's PRG prior to elevation.²³

In the 2009 RFO, PG&E's administration of its methodology to exclude Offers that pose serious environmental concerns represents the contrapositive of the CPUC's specific thinking in that Decision: instead of using this element of the RPS Goals criterion to elevate a lower-valued but uniquely environmentally beneficial Offer onto the short list, PG&E is using the qualitative attribute to demote higher-valued but environmentally detrimental projects from the short list.

²³ California Public Utilities Commission, Decision 04-07-029, "Opinion Adopting Criteria for the Selection [of] Least-Cost and Best-Fit Renewable Resources", July 8, 2004, Findings of Fact #28 and 29

Arroyo notes that several of the proposed projects raised environmental concerns that were identified by the team that evaluated them for biological or land use impacts. PG&E identified only a very few of these as posing sufficiently egregious threats to merit exclusion on the basis of the most serious environmental concerns. These typically related to concerns regarding impact to endangered or threatened species from construction of a generating facility in close proximity to their critical habitat.

Also, Arroyo notes that process the utility used to exclude these Offers from the short list violates one of the principles that the Energy Division has suggested be used by IEs to evaluate the fairness of the evaluation methodology in renewable solicitations: “The IOU bid evaluation should be based only on information submitted in bid proposal documents”.²⁴ The solicitation protocol required Participants to describe how their site selection process had screened locations “to avoid critical habitat, Areas of Critical Environmental Concern, Desert Wildlife Management Areas, protected wilderness, proposed monument areas and other protected areas.”²⁵ However, the rejected Offers in question (and others as well) failed to report on the fact that their sites were directly adjacent to BLM-designated ACECs or to a national recreation area that harbors federally threatened species. The PG&E team used its access to databases on land use, BLM designations, biological inventories, etc. to identify these concerns, which were not revealed in the text of the Offer packages.

In this specific situation, Arroyo opines that PG&E should be allowed to make use of information not included in Offer documents to determine, based on the utility’s judgment, whether certain Offers should be excluded by reason of serious environmental concerns. The developers do not have a strong incentive to offer fully candid reporting on the environmental impact of their projects prior to short-listing. The degree of environmental concern associated with these Offers is sufficient to raise questions of project viability, because it appears unlikely that a facility that proposes to construct directly adjacent to critical habitat for endangered or threatened species would easily achieve permitting. (Note however that the Project Viability Calculator as currently designed fails to capture the degree of difficulty to obtain permits, and scores Offers based only on whether the developer has applied for permits or achieved them, so the degree of risk of permit failure due to serious environmental concerns is not reflected in the Calculator score. Arroyo can easily imagine the environmentally unfriendly siting of these facilities to be a fatal flaw in their permitting process, yet the Calculator scores of these Offers ranged from moderately low to moderately high.)

Given the ratepayers’ interest in pursuing only projects with a reasonable likelihood of timely completion, and the overt failure of some developers to self-identify environmental issues affecting permitting for their sites (issues of which some developers are clearly cognizant), Arroyo considers it acceptable and even prudent for the utility to use other sources of information than the contents of the Offer packages to screen for serious environmental concerns when the developers choose not to reveal these issues. The

²⁴ Energy Division of the California Public Utilities Commission, “RPS Independent (IE) Report Template – Standard Form”, October 2009

²⁵ Pacific Gas and Electric Company, “Renewables Portfolio Standard: 2009 Solicitation Protocol”, June 29, 2009, page 27

alternative would be for PG&E to ignore its data on critical habitats and to short-list the more “viable” of these projects based on the Calculator, and anticipate the risk that either permitting will fail given community opposition or that, if permitted and completed, the facilities could create strong negative reactions from the local and environmental communities, tarnish PG&E’s reputation, and lead to excessive mortality among threatened and endangered species. Such an outcome would be inconsistent with PG&E’s aspiration to serve as an environmental leader among corporations.

Arroyo does not consider this specific use of information from databases about endangered or threatened species habitat and Areas of Critical Environmental Concern to be unfair to some or all Participants, although one can imagine how such data could be applied unfairly. Arroyo would probably have chosen a somewhat different set of Offers as the ones posing the most serious environmental concerns than the PG&E team did,²⁶ but this is an area where reasonable people can arrive at different conclusions, and Arroyo acknowledges that the choice of which Offers to exclude PG&E made was reasonable.

Arroyo also opines that PG&E should be allowed to reject Offers from the short list (as well as elevate Offers to the short list) based on evaluation of environmental stewardship, subject to the provision in Decision 04-07-029 that such a choice receive support from PG&E’s PRG prior to rejection, even though this use of the qualitative attribute of “environmental stewardship” was not specifically envisioned in that Decision..

In the interest of transparency of the solicitation, Arroyo would recommend that future solicitation materials clarify that, within the components that make up the RPS Goals evaluation criterion, the specific review of environmental stewardship attributes can serve as the basis for rejection of Offers that raise serious concerns. It appears from the debriefing sessions that some developers were unaware that environmental concerns could play such a role in rejecting their Offers.

3. CONSIDERATIONS OF SUPPLIER CONCENTRATION

In this year’s solicitation, PG&E stated in its protocol that averting excess supplier concentration would be an evaluation criterion. The team reviewed developers who proposed multiple Offers that met the valuation and viability screens, and assigned MW limits to how many of those Offers to short-list based on how many contracts the utility already had executed with the counterparty. In assigning those limits the team used its business judgment, taking into account factors such as

- The number of megawatts of executed contracts for projects not yet operational vs. the number of megawatts for contracted projects that have achieved commercial operation (the former being considered a greater source of risk),

²⁶ Specifically, Arroyo would have raised concerns about Offers for projects that would construct facilities directly adjacent to or upon land identified by county planning authorities as “Significant Ecological Areas” and about an Offer for a facility directly adjacent to a BLM-designated Desert Wildlife Management Area, that were not identified in PG&E’s natural diversity or land use databases. These Offers were not short-listed for other reasons.

- The view of transactors about the likelihood that mutually acceptable contractual terms could be negotiated with the counterparty, vs. the risk of failure to achieve executed contracts through negotiation without granting unfair concessions, and
- Guidance from PG&E's PRG.

The limitation on total MW of Offers from suppliers already contracted with PG&E (or from new suppliers who offered multiple projects totaling large amounts of capacity) had the effect of excluding from the short list a substantial number of facilities that otherwise met the valuation and viability screens. As noted above, Arroyo agrees that placing limitations on counterparty concentration is a legitimate business concern related to risk management regarding credit risk and project completion risk. The specific limits that PG&E chose, on a supplier by supplier basis, seemed reasonable to Arroyo given the specific circumstances of each supplier's Offers and PG&E's business relationship with them, and did not unfairly disadvantage individual developers.

Note that this use of judgment to decide MW limitations on total exposure to renewable power counterparties violates one of the tests for fairness of administration that the Energy Division has articulated in its template for IE review: "Were all bids treated the same regardless of the identity of the bidder?" PG&E assigned different limits on the volume of capacity to select for the 2009 short list based on the identity of the counterparty, based specifically on how much generation PG&E already has under contract with that individual supplier. So PG&E was willing to short-list more megawatts of projects for Participants with one existing contract than for those with which the utility has already executed several PPAs. Arroyo's opinion is that as long as the limitations are based on objective measures such as how much is already contracted, and not on biases or unfair preferences, the supplier concentration criterion can be applied and was applied in a manner fair to all Participants.

4. DELIVERY POINT

PG&E stated in its 2009 solicitation protocol a preference for projects that deliver to the CAISO at nodal points within PG&E's service territory, over projects that deliver to other nodal points within the CAISO, to interface points of the CAISO, and to points outside the CAISO.

In screening Offers based on their proposed delivery points, PG&E chose to reject from the short list several projects that proposed to deliver at busbar points outside the CAISO or to interface points of the CAISO, regardless of their valuation or Project Viability Calculator score. PG&E chose to exercise its judgment that based on its experience to date, there was no clear provision to achieve the delivery required to make these resources eligible under CEC guidelines, given their location in the western grid and the challenges of successfully moving their power to the CAISO for firm scheduled delivery. Arroyo does not dispute this judgment, and agrees that the choice to exclude this set of projects interconnecting outside PG&E's service territory falls within the stated preference regarding delivery point and the degree to which the CPUC has allowed IOUs to exercise their business judgment in making such decisions. The confidential appendix to this report provides more commentary about the fairness with which this screen was administered to reject such Offers.

Another set of Offers that proposed to deliver at busbar points outside the CAISO or to interface points of the CAISO was judged by the team to have a clearer potential to achieve eligible scheduled delivery to the CAISO, based on the utility's experience and judgment. Within this group, PG&E screened out the larger MW capacity offers even though they met the valuation and viability screens. The logic for this was that there is a limited capacity in the market for third parties to provide shaping and firming services to manage the delivery from these external busbars to the CAISO, and that based on the utility's experience it would be more challenging to obtain such services for large blocks of intermittent generation. The availability and pricing of such third-party arrangements has become more adverse in recent years.

While there is no stated preference for smaller over larger projects described in the solicitation materials, Arroyo notes that the stated preference for Offers that propose delivery into nodes within the PG&E service territory sends a clear message that out-of-state and in-state non-CAISO busbar deliveries of power are not preferred. The choice to exclude larger non-CAISO projects seems to be based on practical business concerns about the feasibility of delivering so much intermittent power to the CAISO given the declining risk appetite of third parties to support shaping and firming arrangements at reasonable prices. Arroyo considers PG&E's choice to reject Offers because they propose to deliver to non-preferred interconnection points, while accepting a few Offers that propose to deliver at non-CAISO busbars or CAISO interface points in hopes that delivery into the CAISO may be achieved, to be a reasonable decision.

5. TECHNOLOGICAL DIVERSITY

PG&E added a few Offers to its short list that proposed facilities using a different technology than those already on the short list or within the utility's supply portfolio. The reason cited was to provide greater portfolio diversity.

Technological diversity of the renewable power supply portfolio is not precisely a criterion or preference stated in the solicitation materials. However, within the RPS Goals evaluation criterion is a review of the extent to which an Offer will accomplish or promote a broad set of social and environmental goals, including a goal to "Increase the diversity, reliability, public health, and environmental benefits of the energy mix".²⁷ Some would read this language, taken from the legislative objectives stated for the RPS program, as a directive to diversity the state's energy mix away from fossil-fueled generation sources such as coal and natural gas. To others this might be interpreted as a mandate to strengthen the robustness of the energy mix by seeking to employ a broader range of technologies for renewable generation. The latter interpretation would open up the opportunity to select lower-valued or lower-viability projects because they offer unique, different, or not-yet-fully-commercialized technologies that may benefit from demonstration at utility scale.

Arroyo notes that the selection of these Offers for the short list might be viewed as an exercise in using appropriate business judgment regarding project viability while discounting

²⁷ Pacific Gas and Electric Company, "Renewables Portfolio Standard: 2009 Solicitation Protocol", June 29, 2009, page 28

the exact numerical scores from the Project Viability Calculator. Two of these Offers fell only slightly below the arbitrary cutoff score that PG&E used to screen for projects with acceptable vs. unacceptable project viability, while one Offer fell considerably below that cutoff.

Arroyo notes that the use of the Calculator has a fair amount of noise or error in it. When the IE's viability scores are compared to those of the PG&E team's, the average of all scores was nearly the same, but the standard deviation of the difference between IE and utility scores on individual Offers was 13 points. This provides an indication of the standard error of the Calculator's scores. The degree to which the two higher-ranked Offers fell below the cutoff point that PG&E used for screening was well within the estimated standard error of the evaluation. Also, Arroyo observes that all of the non-shortlisted Offers that scored higher than these two Offers and below the viability cutoff level were also eliminated from PG&E's short list based on criteria or preferences other than viability, and would not have been selected for the short list anyway. Therefore no other developer appears to have been disadvantaged unfairly by selecting the two Offers in question.

However, the viability score of the other Offer that PG&E selected for the short list fell more than 13 points below PG&E's viability cutoff level. Several Offers that scored higher for both viability and valuation than this Offer, and equal for RPS Goals, were rejected from the short list. This creates the appearance that selecting this third Offer for the short list was unfair to other Participants. Arroyo disagreed with the utility's decision to select this less viable Offer over others with higher viability scores for the short list on the basis of seeking portfolio diversity (rejected Offers that had higher value and higher viability scores also provided technological diversity). This Offer is also discussed below, and described in greater detail in the confidential appendix to this report.

6. COMMERCIAL OPERATION DATE

The solicitation protocol clearly stated PG&E's preference to select Offers that proposed earlier commercial operation dates over Offers proposing later on-line dates.

The PG&E team exercised its preference for earlier on-line dates at various points in the selection process. It took this preference into consideration when selecting one or two among several Offers from individual Participants, for whom the supplier concentration criterion led to a decision to limit the total number of MW from each individual counterparty. In some cases this meant that higher-valued Offers with later on-line dates were rejected while lower-valued Offers with earlier on-line dates from the same Participant were accepted for the short list.

Similarly, projects with moderately high valuation and viability scores below but near the cutoff were rejected, both because of their mediocre viability scores and because of later proposed commercial operation dates.

PG&E's preference regarding the timing of commercial operation is a reasonable business judgment, given the near-term RPS targets that the utility is required to achieve. However, Arroyo notes that some of the highest-valued Offers in the 2009 RPS RFO were rejected in favor of lower-valued but earlier projects because of the preference. This feature

of the selection was also noticed by the PRG, which recommended that higher-valued Offers be accepted despite later timing; PG&E later revised its draft short list to implement a change that reflects this recommendation.

7. SUPPLIER DIVERSITY

One of the components of the RPS Goals evaluation criterion is whether an Offer will contribute towards PG&E's supplier diversity goals. The solicitation protocol states that

“It is the policy of PG&E that Women-, Minority-, and Disabled Veteran-owned Business Enterprises (WMDVBEs) shall have the maximum practicable opportunity to participate in the performance of Agreements resulting from this Solicitation. PG&E encourages Participants to carry out PG&E's policy and contribute to PG&E's supplier diversity goal of 21.5% of all procurement...The Supplier Diversity evaluation will take into account the Participant's status as a WMDVBE and/or an intent or policy of subcontracting with WMDVBEs.”²⁸

PG&E's evaluation committee scored Offers based on the submittal of Attachment L, the utility's Supplier Diversity Questionnaire, and the supplier diversity score became part of the overall RPS Goals score.

Historically, only a tiny proportion of IOUs' short-listed Offers or executed PPAs have been executed with WMDVBE's, and PG&E's policy of scoring Offers against this subcriterion is no doubt intended to help address the shortfall between actual procurement of renewable power from WMDVBE's and PG&E's overall supplier diversity goal.

In the response to the 2009 RPS RFO, very few Offers were submitted by WMDVBEs that have been certified by the CPUC Clearinghouse. More Offers provided answers to the Supplier Diversity Questionnaire that demonstrated the developers' intent to provide outreach to WMDVBE subcontractors. None of the Offers submitted by certified WMDVBEs scored above either the valuation or viability cutoffs.

The PG&E team decided to provide a special opportunity to the certified WMDVBE Participants to improve their poor-scoring Offers. The team identified the most attractive Offer from each certified WMDVBE developer based on the initial evaluation, and communicated that, though the Offer failed to provide an acceptable level of value to be short-listed, the developer would have a chance to reduce the proposed contract price in order to pursue the possibility of selection.

In the actual event, one of the certified WMDVBE developers improved the contract pricing of an Offer sufficiently to the point where its valuation rose above PG&E's value cutoff, and it was accepted to PG&E's short list. While the Project Viability Calculator score for this Offer fell below PG&E's cutoff level, the gap between the score and the cutoff was within Arroyo's estimate of the standard error of the Calculator. Also, no other non-shortlisted that met the value cutoff and had a viability score superior to this WMDVBE's

²⁸ Pacific Gas and Electric Company, “Renewables Portfolio Standard: 2009 Solicitation Protocol”, June 29, 2009, pages 44-45

Offer was rejected on the basis of viability alone; these other Offers with better viability than that Offer were also rejected based on factors such as delivery point, timing of on-line date, or supplier concentration. Thus, no other Participant had a non-shortlisted Offer that was disadvantaged by the selection of this one WMDVBE Offer (other than by the special opportunity to reprice the proposal, which was not offered to other non-WMDVBE Participants).

No other certified WMDVBE developer improved its Offer pricing sufficiently in the repricing opportunity to the point where the net valuation of the revised Offer rose sufficiently towards the value cutoff to make the Offer acceptable to PG&E.

While PG&E's procedure to give these WMDVBE developers a chance to improve their Offers (when no other Participants were given such an opportunity) is exceptional, it is consistent with PG&E's policy, stated in the 2009 solicitation protocol, to provide WMDVBES with "the maximum practicable opportunity to participate in the performance of Agreements resulting from this Solicitation."²⁹ Other Participants might very well view such preferential treatment as unfair. Certainly during the process of debriefing non-shortlisted parties, several sought the opportunity to improve the price of their Offers in order to achieve late selection to the short list, and were denied such a special opportunity that was granted to WMDVBE Participants.

While PG&E did not disclose in its solicitation protocol the specifics or mechanics of its approach to special evaluation of Offers from certified WMDVBES, it did clearly disclose its intent to provide "maximum practicable opportunity" for such entities to participate in RPS contracts. Also, the proposed approach to providing an extra opportunity for certified WMDVBES to improve their Offers was reviewed with PG&E's PRG, which supported or at least did not object to the plan involving the extra opportunity to improve the contract prices. The fact that PG&E selected one WMDVBE Offer for the short list because it met the valuation cutoff, and did not select WMDVBE Offers that fell below the valuation cutoff, suggests that the preferential treatment offered to this special category of developer did not lead to the selection of Offers that violate the use of Least-Cost, Best-Fit principles for selection.

H. ANALYSIS OF PG&E'S SHORT LIST RESULTS

This section provides a review of instances in which Arroyo Seco Consulting disagreed with PG&E's decisions in the administration of its evaluation and selection methodology, and a discussion of the fairness of the decisions.

1. SOURCES OF DISAGREEMENT

While the PG&E evaluation committee and Arroyo Seco Consulting did disagree on some specific decisions in the administration of the evaluation process, nearly all of these issues were quickly resolved in the course of review and discussion. Most of these

²⁹ Pacific Gas and Electric Company, "Renewables Portfolio Standard: 2009 Solicitation Protocol", June 29, 2009, page 44

disagreements were in the nature of an IE proposing minor technical changes to preliminary draft analyses rather than any serious disagreements about fairness or reasonableness. Issues underlying the disagreements included:

- Arroyo disagreed with some of the PG&E team's preliminary assignments of some Offers to local nodal areas or to pricing zones. After review and discussion, these disagreements were resolved, either through changes to the assignments or agreement that the assignments were correct.
- Arroyo disagreed with initial analyses in which PG&E assigned Resource Adequacy value to a few Offers that proposed to interconnect intermittent generation facilities outside the CAISO grid. Upon review, the PG&E team agreed that most of these Offers would not likely provide RA value to customers and should not be credited with it in the valuation methodology.
- Arroyo suggested that selection of Imperial Valley Offers with viability scores below PG&E's viability cutoff would amount to a preference for Imperial Valley projects. Preferential treatment of such Offers was explicitly rejected for the 2009 RPS RFO in the CPUC's Decision approving the 2009 procurement plans. Based on guidance from PRG members, PG&E chose to drop one such Offer from its draft short list; another failed to remain on the final short list, with the result that Arroyo regards that list as representing fair and non-preferential treatment of Imperial Valley developers.
- PG&E made a preliminary selection of projects from two Developers that were not the Participant's highest-valued Offers; upon review, and given feedback from PRG members and the IE, PG&E decided to select higher-valued Offers.
- Arroyo's scores for many individual Offers using the Project Viability Calculator varied considerably from the PG&E team's scores. Upon comparison and discussion, PG&E revised its scores downwards for some Offers that it had included in a preliminary draft short list. This led the utility to decide to reject these Offers from the final short list. Similarly, Arroyo was convinced by PG&E's analysis to revise some of its Calculator scores upwards for some Offers that PG&E had placed on the preliminary draft short list and to which Arroyo had raised objections. This eliminated Arroyo's disagreements with PG&E on those Offers.

In the final short list, PG&E selected a few Offers that met its value cutoff but fell below the (somewhat arbitrary) cutoff for viability. For most of these, Arroyo concurred with the decision to short-list, because (1) Arroyo had assigned the project a higher viability score than the PG&E team had, (2) the gap between the project's viability score and the cutoff was within Arroyo's estimate of the standard error of the Calculator's analysis, (3) the Offer scored particularly high in some other evaluation criterion, and/or (4) inspection of the Offers suggested that other non-shortlisted Offers that received a higher viability score than the selected Offer were rejected for reasons other than low viability (such as low valuation, non-preferred delivery point, excess supplier concentration, and later on-line date)

so that Arroyo concluded that no other developers were unfairly disadvantaged by selection of the slightly lower-viability Offers.

However, Arroyo disagreed with PG&E's decision to select two Offers for the short list.

- One Offer, described previously, was short-listed on the basis of achieving greater portfolio diversity by providing a proposed project with a different technology. The PG&E team scored this proposal as lower in value, lower in viability, and equal in RPS Goals, vs. other competing Offers that were not selected for the short list. Its selection for the short list appears to be inconsistent and possibly unfair.
- Another Offer was for a short-term transaction from an existing facility. Arroyo assigned a much lower viability score to this Offer using the Project Viability Calculator than PG&E did. As described previously, it is not clear to Arroyo whether the utility is obligated to use the Project Viability Calculator to score existing facilities. However, Arroyo had difficulty finding a factual basis in the Offer materials to consider this project more viable than other Offers that PG&E rejected from the short list for poor viability, creating concerns about the fairness of the selection.

Arroyo raised an issue of inconsistent treatment of this Offer in valuation when compared to the treatment of other Offers; this issue was partially resolved through discussion and is described more fully in the confidential appendix.

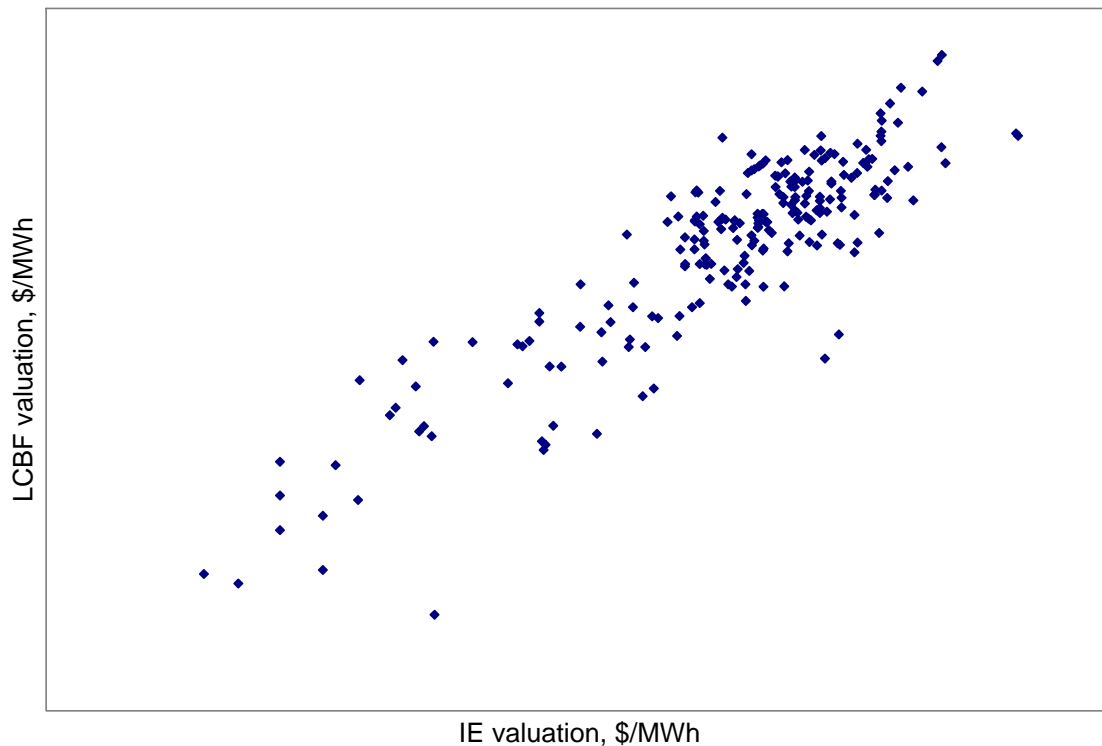
Additionally, PG&E selected one Offer for the short list despite the fact that its value dropped below the valuation cutoff, and was lower-valued than a less-viable competing offer that was rejected. This could be considered reasonable based on the utility's emphasis on project viability, but it creates the appearance of unfair treatment of the competing Participant.

The disagreement between the IE and the utility about placing the two Offers on the short list comes down to different opinions about the viability of the projects underlying the proposed transactions. This is a situation where reasonable observers, presented with the same Offer materials, can arrive at opposing opinions, whether based on the Calculator or simply based on judgment and opinion. If one accepts PG&E's opinion about the viability of the two Offers (disregarding the PG&E team's Project Viability Score for the first one), then their selection for the short list was entirely fair, reasonable, and consistent; if one accepts Arroyo's opinion, their selection would not be. Details for the basis of the disagreements are provided in the confidential appendix to this report.

2. INDEPENDENT OFFER ANALYSES

Arroyo conducted its own rather simplified valuation process. The two sets of valuations generally correlated well, with a fair amount of noise in the comparison, as shown in Figure 3 that compares the two sets of valuations.

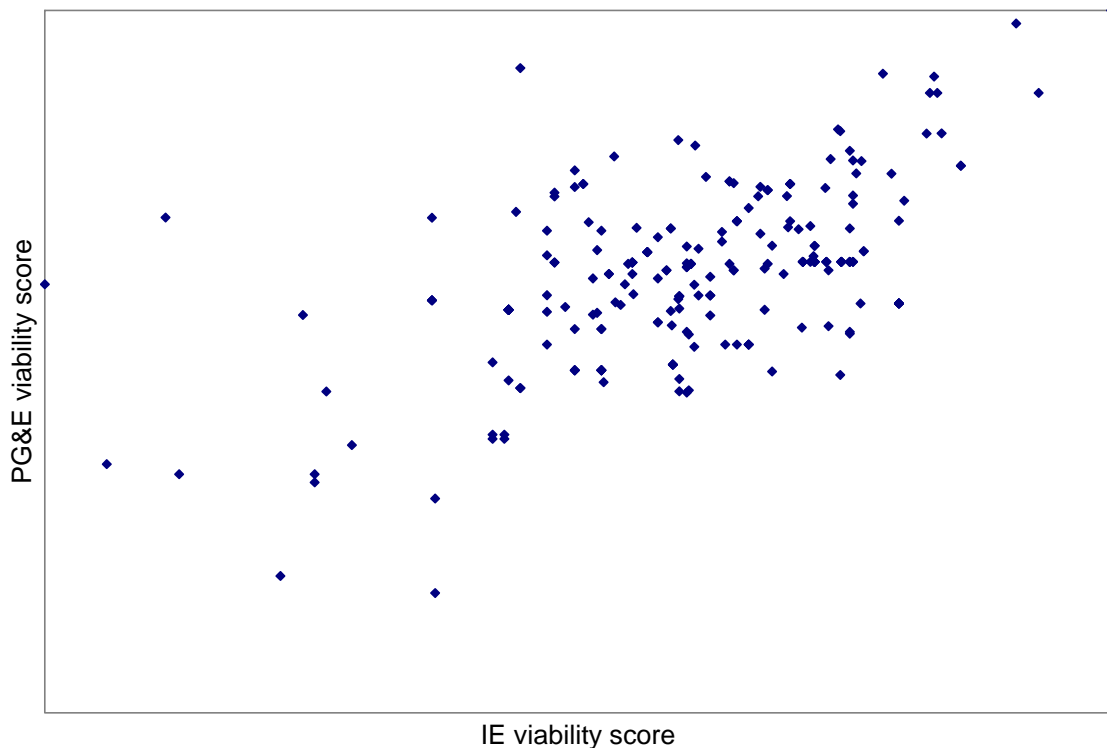
Figure 3



Arroyo did not use its simplified model to construct a separate short list. Instead, the simplified model was useful in quality control to identify errors in PG&E's or the IE's inputs, parameters, or assumptions for specific Offers. Also, the comparison helped identify what specific factors caused specific Offers to be ranked high or low in PG&E's short-listing process, such as the impact of the discount rate assumption, the on-line date, the choice of which transmission cluster to assign to an Offer, and the size of TRCR or transmission wheeling adders.

Arroyo also scored each Offer for viability independently of PG&E's analysis, using the Energy Division's version of the Project Viability Calculator and not PG&E's modified version. This was useful to get an estimate of what the standard error of the Calculator is, and a sense of whether differences in score reflect significant differences in the viability of projects or are within the noise of the method for assessing viability. Arroyo emerged from the comparison (shown in Figure 4) with a view that differences of a dozen or fewer points in viability score may not reflect true differences in the likelihood that one project is significantly likelier than another to achieve successful completion, given the modest precision of the tool and the subjectivity of its use.

Figure 4



The correlation of the IE and PG&E team’s scores using the Project Viability Calculator is poorer than that between valuation models. Arroyo ascribes this to the gray areas in the scoring guidelines, to differences in the subjective judgments of individual scorers, and to PG&E’s use of an additional evaluation criterion in its modified Calculator. The comparison between the sets of scores helped reveal specific errors that Arroyo acknowledged in its draft scores and corrected, but no doubt there are other errors in Arroyo’s viability scoring that have not yet been identified.

3. RECTIFYING DEFICIENCIES OF REJECTED OFFERS

As observed previously, PG&E communicated early to several Participants about basic deficiencies in their Offer packages and provided them with an opportunity to correct these deficiencies by completing or correcting their original submissions. None of these original shortfalls in the packages resulted directly in rejection from the short list, as far as can be discerned, except for the two Offers that were rejected for non-conformity with the requirements of the solicitation protocol. Most of the individual rejections of Offers were based on low valuations, low viability, and avoidance of excess supplier concentration.

In general, deficiencies preventing Offers from being selected do not appear to be caused by errors or misjudgments by the Participants in drafting the Offer package, but rather by the poor economics of projects or technologies at the MW scale chosen by developers, by insufficient progress by the developer at this point in time in areas such as site control, permitting, demonstration of resource quality, and interconnection (e.g., a “not fully

baked” project, deficient not in its intrinsic merits but in its degree of advancement to date), and by the difficulty for some developers in locking down a competitive PPA price when the price of equipment and of contractors are moving targets. Some projects were deeply flawed by site selection at locations where the grid is highly congested, or in foreign control areas where substantial costs would be required to wheel power to the CAISO and to shape and firm it to render it eligible for the RPS program, or in foreign control areas where it is not at all clear that the power can be moved to the CAISO given limited available transmission capability. Other projects were unattractive because of the serious environmental concerns their construction would likely raise. In situations like these, the rejection from the short list would not likely be rectified by any actions PG&E could take to have the developer enhance its Offer package.

Some developers seem to have completely mistaken the 2009 RPS RFO for a solicitation for PG&E’s as-yet-unapproved PV Program, and appear to have assumed that PG&E’s proposed tariff price for contracts under that program, \$246/MWh, would serve as a winning offer or a “safe harbor” price. In these cases one can imagine how PG&E might have rectified the deficiency of an uncompetitive price by querying the Participants about the basis for their price. However, such a query by PG&E would fall into the category of a request for clarification that could provide one Participant an unfair advantage over others by signaling an opportunity to lower her price, an action spelled out in the Energy Division’s IE report template as a violation of principles of fairness in administering the solicitation.

Indeed, several Participants whose Offers were rejected from the short list seemed eager, upon debriefing, to improve them in order to win a late slot on the short list after it was completed. To have allowed only these individual Participants to rectify their uncompetitive Offer prices after a short list was drafted would have been unfair to the Participants whose Offers were selected; all Participants would need to be allowed to improve their Offers to make such a step seem fair.

On that basis Arroyo cannot identify how PG&E could have rectified the deficiencies associated with rejected Offers while maintaining fairness to Participants whose Offers were selected. The only suggestion Arroyo can offer would be to edit future solicitation materials and bidders’ workshop presentations to clarify that the RPS solicitation differs completely from any proposed PV Program. To allow every Participant a second chance to improve the Offer prices after short-listing would simply encourage submittal of bogus low-ball price offers.

4. OVERALL FAIRNESS OF ADMINISTRATION

Despite a variety of minor disagreements and concerns, and two fundamental disagreements, Arroyo Seco Consulting’s overall judgment is that PG&E’s administration of its protocols to arrive at a short list for the 2009 RPS RFO was fair, unbiased, consistent, and reasonable.

Most disagreements between Arroyo and the PG&E team fall into the category of choices that Arroyo would have not made if it were administering the solicitation, but that Arroyo agrees are choices a reasonable person could make if that person had different priorities or emphases regarding the weights assigned to evaluation criteria. Most of

PG&E's decisions to select for the short list Offers whose Project Viability Scores fell below its viability cutoff, on the basis of superior scores on attributes such as RPS Goals, supplier diversity, or technology diversity, fall into this category. Similarly, PG&E's decision to reject from the short list the highest valued Offers it received on the basis of a preference for early on-line dates is one that Arroyo would not have made, but may be a reasonable choice for a utility that has obligations to achieve near-term targets for RPS compliance.

PG&E did select for its short list two Offers that, in Arroyo's opinion but not in PG&E's, are sufficiently low in demonstrated project viability that their selection raises a serious concern about the fairness and consistency of the decisions to select them. This disagreement represents a situation where reasonable observers can arrive at opposing opinions about the viability of a transaction given the same presented facts. The specific issues raised by these Offers are addressed in the confidential appendix to this report.

I. IMPERIAL VALLEY OFFERS

PG&E received several Offers for renewable generation proposed to be sited in the Imperial Valley. The PG&E team generally applied the same steps and processes to evaluate these Offers as it did with others. One exception is that the utility did not use its stated preference for projects interconnecting to the grid within PG&E's service territory to reject or disfavor any Imperial Valley Offers, as it did with some Offers with other proposed points of interconnection that pose greater challenges for delivery to PG&E customers.

Arroyo believes that the choice of Imperial Valley Offers on the final short list represents a fair and reasonable selection made by PG&E. The utility did not unfairly exert undue preference based on Imperial Valley location to select any Offer on the final short list, nor did it reject any Imperial Valley Offer that fully met the criteria applied to screen Offers, the same criteria used in other regions. More details on the Imperial Valley Offers and their evaluations are provided in the confidential appendix.

5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

This chapter details an independent review of the extent to which PG&E's negotiations with North Star Solar to contract for the output of its proposed solar photovoltaic facility 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 North Star Solar was treated in negotiations regarding its 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 NORTH STAR SOLAR AND PG&E

To a large extent PG&E's negotiations regarding the North Star Solar facility 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 numerous contract issues resolved in the negotiations with North Star Solar 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 2009 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 generally not been 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.

North Star Solar requested several changes from the language of PG&E's 2009 Form Agreement; PG&E declined to accede to most of these requests. PG&E granted North Star Solar specific concessions in contract terms that were similar to those previously granted to other counterparties; Arroyo does not regard the provision of such concessions to have been unfair to PG&E customers or other developers given the precedents set in other contracts. Also, PG&E requested and North Star Solar granted a small set of concessions that provide benefits to ratepayers compared to North Star Solar's opening position.

PG&E has, since the selection of short-listed offers for the 2009 RFO, embarked on an effort to update and revise its Form Agreement to deal with issues related to institutional market design changes that have arisen in the last year and their implications for the obligations of seller and buyer. Other provisions, such as new non-modifiable terms and conditions, have been ordered by the CPUC. Several of the contract provisions that were developed since the 2009 RFO have been incorporated into PG&E's proposed 2010 Form Agreement. PG&E asked North Star Solar to accept some of these provisions, and they were accepted into the resulting PPA. Arroyo views the new terms and conditions as a good first step to handling the issues fairly; some of these added provisions provide improved ratepayer protections going forward into an evolving market structure.

Based on observing several negotiation sessions and reviewing iterations of draft contracts, Arroyo's opinion is that the project-specific negotiations between PG&E and North Star Solar to arrive at an executed contract for the output of the solar photovoltaic project near Mendota were fair overall.

6. MERIT FOR CPUC APPROVAL

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

A. CONTRACT SUMMARY

PG&E and North Star Solar, LLC executed a complete contract for the output of the solar photovoltaic project on September 20, 2010. The contract is for a 20-year term, with a contract capacity of 60 MW. A contractually guaranteed commercial operation date is set for June 30, 2013, barring any excused delays. Annual contract energy quantities are expected to average about 120 GWh over the life of the contract. The solar photovoltaic project will be located in western Fresno County, in an agricultural area west of the city of Mendota.

B. NARRATIVE OF EVALUATION CRITERIA AND RANKING

The 2009 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 North Star Solar contract price is greater than the currently applicable, adopted 2009 Market Price Referent for 20-year PPAs that begin delivery in 2013.³⁰

Using the IE's simple valuation model, the North Star Solar contract ranks in value above the median of other original Offers received in the 2009 RPS solicitation (at their originally proposed prices). However, the PPA ranks lower in net value than the median of the currently shortlisted offers from the 2009 solicitation, a select group of the more attractive proposals identified from among that original pool of Offers. When using PG&E's least-cost, best-fit methodology, the North Star Solar contract ranks below the median of proposals in a peer group of competing alternatives that includes both remaining short-listed Offers from prior RFOs and bilateral proposals from developers.

Arroyo's opinion, based on the ranking of the North Star Solar contract in these comparisons, is that the net valuation of the contract is moderate in comparison to competing alternatives, as is the contract price. This is based in part on Arroyo using PG&E's 2010 Transmission Ranking Cost Report as the basis for estimating proxy costs for transmission network upgrades. There is some risk that the CAISO may determine that higher upgrade costs are required for the project to deliver power reliably to the grid, and therefore there is some risk that Arroyo would rank the project as "low" in net value to

³⁰ California Public Utilities Commission, Resolution E-4298, December 17, 2009.

ratepayers in such a contingency. Arroyo regards the likelihood of such an outcome as remote. A more detailed discussion of the rankings is presented in the confidential appendix to this report.

PORTFOLIO FIT

Arroyo ranks the expected North Star Solar project output as moderate in portfolio fit, given the generally good correlation of its expected output with PG&E's supply needs on a seasonal and time-of-day basis, and the weak day-ahead predictability of output.

PROJECT VIABILITY

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

- Achieving site control;
- An independently assessed, though modest solar resource;
- A project team with extensive prior experience developing fossil-fueled generation facilities in the U.S., with some experience in wind power development; and
- A well-established, commercial technology.

On the other hand, a variety of risks pose a modest potential for delay in achieving commercial operation, including the lack of experience of the project team in developing wholesale, utility-scale solar generation (as opposed to extensive experience developing fossil-fueled generation), and the relatively early status of the project in its permitting and interconnection processes.

In Arroyo's opinion, the North Star Solar PPA's project viability is moderate. Arroyo independently scored the project using the final version of the Energy Division's Project Viability Calculator. The IE's score places the facility into the second highest quartile of ranking among Offers received in PG&E's 2009 RFO, and near the median among short-listed offers from that solicitation.

RPS GOALS

If approved, the North Star Solar project could likely contribute to PG&E's and the state's short-term RPS goals under flexible compliance rules, given that it is expected to enter commercial operation in mid-2013, barring excused delays. It would also contribute to long-term RPS goals as a twenty-year contract.

C. DISCUSSION OF MERIT FOR APPROVAL

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

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

Alcantar & Kahl LLP	Dept of General Services	North Coast SolarResources
Ameresco	Division of Business Advisory Services	Northern California Power Association
Anderson & Poole	Douglass & Liddell	Occidental Energy Marketing, Inc.
Arizona Public Service Company	Downey & Brand	OnGrid Solar
BART	Duke Energy	Praxair
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CSC Energy Services	In House Energy	Sempra Utilities
California Cotton Ginners & Growers Assn	International Power Technology	Sierra Pacific Power Company
California Energy Commission	Intestate Gas Services, Inc.	Silicon Valley Power
California League of Food Processors	Lawrence Berkeley National Lab	Silo Energy LLC
California Public Utilities Commission	Los Angeles Dept of Water & Power	Southern California Edison Company
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Coast Economic Consulting	Modesto Irrigation District	Turlock Irrigation District
Commercial Energy	Morgan Stanley	United Cogen
Consumer Federation of California	Morrison & Foerster	Utility Cost Management
Crossborder Energy	NLine Energy, Inc.	Utility Specialists
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		eMeter Corporation
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