STATE OF CALIFORNIA Edmund G. Brown Jr., *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 26, 2014

Advice Letters 4107-E and 4107-E-A

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Subject: Three Power Purchase Agreements for Procurement of Eligible Renewable Energy Resources Between First Solar, LLC and PG&E

Dear Mr. Cherry:

Advice Letters 4107-E and 4107-E-A are effective February 5th, 2014 per Resolution E-4640.

Sincerely,

Edward Randolph

Edward F. Randolph, Director
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Pacific Gas and Electric Company

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September 10, 2012

Advice 4107-E
(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

Subject: Three Power Purchase Agreements for Procurement of Eligible Renewable Energy Resources Between First Solar, LLC and Pacific Gas and Electric Company

I. Introduction

A. Purpose of the advice letter

Pacific Gas and Electric Company ("PG&E") seeks California Public Utilities Commission ("Commission" or "CPUC") approval of three new Power Purchase Agreements ("PPAs"), each between PG&E and a subsidiary of First Solar, LLC ("First Solar"). The three PPAs are for Renewables Portfolio Standard ("RPS")-eligible energy from three solar photovoltaic ("PV") projects to be located in California. Each PPA has a term of twenty-five years, and the PPA prices are each below the applicable 2011 Market Price Referent ("MPR").

PG&E requests that the Commission issue a resolution no later than early March 2013, approving each of the PPAs in its entirety and containing the findings as set forth in Section V below.

B. Subject of the advice letter

1. Project name

The names of the three projects are:

1. Cuyama Solar, LLC, a 40 MW solar PV facility located in Cuyama, California ("Cuyama");
2. Lost Hills Solar, LLC, a 20 MW solar PV facility located in Lost Hills, California ("Lost Hills"); and
3. Blackwell Solar, LLC, a 12 MW solar PV facility also located in Lost Hills, California ("Blackwell").

PG&E refers to the three projects collectively as the "Projects" or individually as a "Project" in this advice letter.

2. Technology (including level of maturity)

All the Projects use the same solar PV technology based on First Solar's proprietary thin film modules. The technology is mature. First Solar's modules have been deployed in over 3,000 MW worldwide.

3. General Location and Interconnection Point

Each Project is located in California. Cuyama is located in Santa Barbara County. Lost Hills and Blackwell are each located in Kern County. The interconnection point of each Project is expected to be within the boundaries of the California Independent System Operator ("CAISO"), a California balancing authority.

4. Owner(s) / Developer(s)

a. Name(s)

b. Type of entity(ies) (e.g. LLC, partnership)

c. Business Relationship (if applicable, between seller/owner/developer)

The Projects are organized as limited liability companies ("LLCs"). Cuyama is owned by Cuyama Solar, LLC. Lost Hills is owned by Lost Hills Solar, LLC. Blackwell is owned by Blackwell Solar, LLC. Each LLC is a wholly owned subsidiary of First Solar, LLC.

The developer of the Projects is First Solar. First Solar is an experienced developer of solar PV generation facilities. First Solar has developed four solar PV projects currently under contract with PG&E.[1]

5. Project background, e.g., expiring QF contract, phased project, previous power purchase agreement, contract amendment

The PPAs are each for new solar PV facilities.

6. Source of agreement, i.e., RPS solicitation year or bilateral negotiation

The PPAs resulted from PG&E's 2011 RPS Solicitation.

PG&E has included Confidential Appendices A through G and Public Appendix C2, which demonstrate the reasonableness of the PPA. As discussed below, PG&E requests confidential treatment for the information contained in Confidential Appendices A through G. PG&E requests that the Commission issue a resolution no later than early March 2013 approving the PPA in its entirety, all payments to be made by PG&E under the PPA, and containing the findings required by the definition of CPUC Approval adopted by Decision ("D.") 07-11-025 and D.08-04-009.

[1] First Solar developed and sold Topaz Solar Farm (550MW), Desert Sunlight Solar Farm (300MW), AV Solar Ranch One (230 MW), and Agua Caliente Solar Project (290 MW online).

C. General Project(s) Description

The following table summarizes the substantive features of the Projects:

Project Names	Cuyama Lost Hills Blackwell
Technology	Solar PV
Capacity (MW)	Cuyama– 40 MW Lost Hills – 20 MW Blackwell – 12 MW
Capacity Factor	26-30% for the three Projects
Expected Generation (GWh/Year)	Cuyama– 104 GWh Lost Hills – 47 GWh Blackwell – 28 GWh
Initial Commercial Operational Date	January 1, 2019
Date contract Delivery Term begins	The Projects will begin delivering to PG&E on January 1, 2019.
Delivery Term (Years)	The PPAs have 25-year delivery terms.
Vintage (New / Existing / Repower)	New projects
Location (city and state)	Cuyama is located in Cuyama, California. Lost Hills and Blackwell are located in Lost Hills, California.
Control Area (e.g., CAISO, BPA)	CAISO
Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI)[2]	The CREZ nearest to the Cuyama Solar Project is CREZ 17 approximately 30 miles from Cuyama. The CREZ nearest to the Lost Hills and Blackwell projects

[2] Information about RETI is available at: http://www.energy.ca.gov/reti/.

	is Carrizo South.
Type of cooling, if applicable	N/A

D. Project location

1. Provide a general map of the generation facility's location

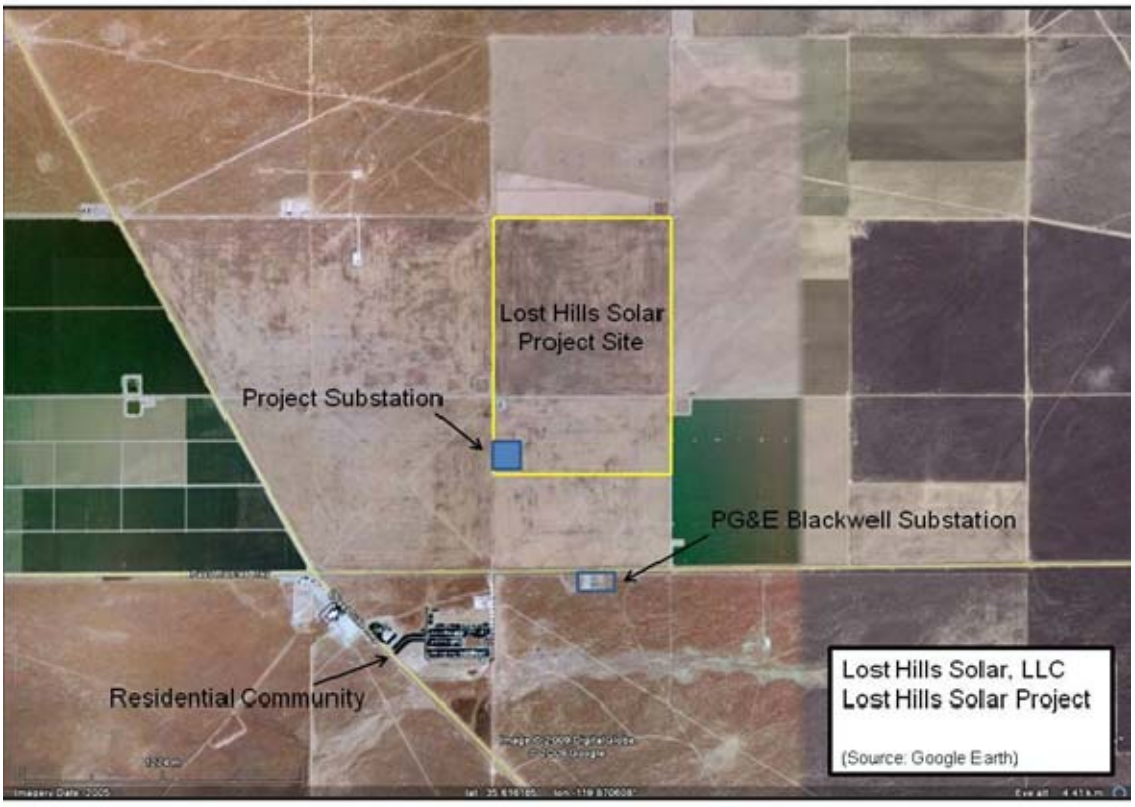
2. For new projects describe facility's current land use type (private, agricultural, county, state lands (agency), federal lands (agency), etc.)

The Projects are located on private agricultural land. The site for Lost Hills and Blackwell encompasses approximately 307 acres of irrigated crop land. The site for Cuyama encompasses approximately 327 acres of cultivated land. All three Projects were initially subject to Williamson Act contracts. [3]

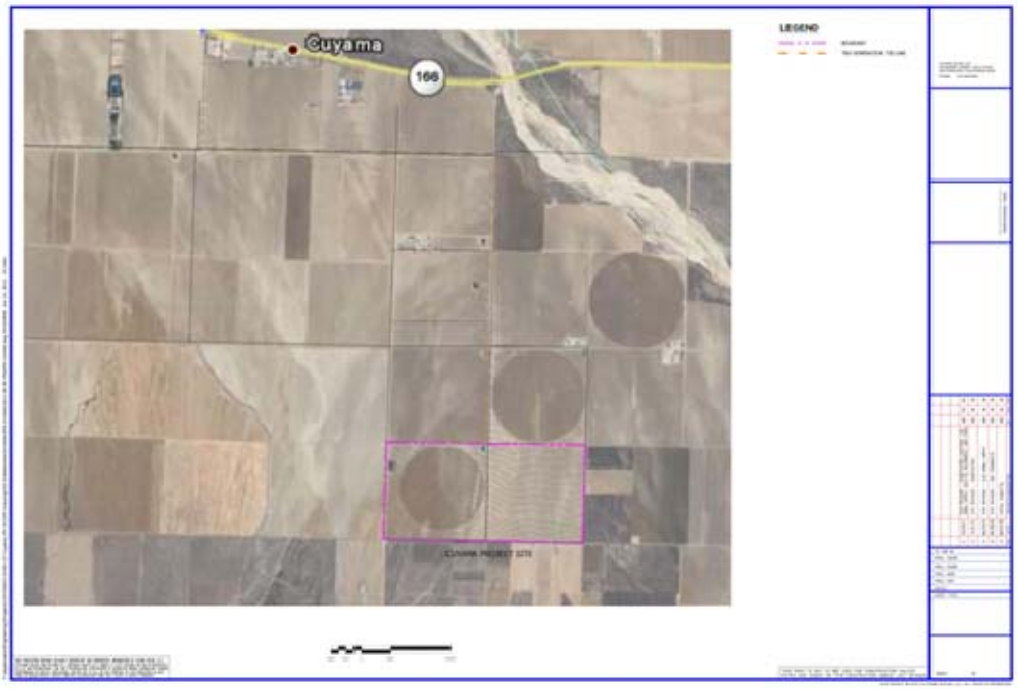
Cancellation of the Williamson Act contract applicable to the Lost Hills and Blackwell Projects was conditionally approved by the Kern County Planning Commission in September 2010.[4] The petition for cancellation of the Williamson Act contract applicable to the Cuyama site has been filed with the Santa Barbara County Planning Commission and is pending.

[3] The Williamson Act, also known as California Land Conservation Act of 1965 is codified at California Government Code Section 51200 et. seq. The Williamson Act enables local governments to enter into contracts with private landowners for the purposes of restricting specific parcels of land for agricultural or open-space uses in exchange for reduced property tax assessments.

[4] *See* Kern County Planning Commission, Summary of Proceedings of September 23, 2010 Regular Meeting at CA-2 page 2-3, *available at* http://kern.granicus.com/DocumentViewer.php?file=kern_c20b8f4ff95b216be26e0f9380a7a177.pdf&view=1&showpdf=1.



The Blackwell Project is located immediately to the south of the Lost Hills Project.



E. General Deal Structure

Describe general characteristics of contract, for example:

1. Required or expected Portfolio Content Category of the proposed contract

The Projects are in-state RPS-eligible renewable energy resources. Each Project is expected to directly interconnect to the CAISO, a California balancing authority. Procurement from each Project satisfies the criteria for the portfolio content category specified in Public Utilities Code Section 399.16(b)(1)(A) (hereinafter "Portfolio Content Category One") because each Project is an RPS-eligible generator that is expected to have its first point of interconnection within the boundaries of a California balancing authority.

2. Partial/full generation output of facility

PG&E has contracted to receive the full generation output from each Project starting January 1, 2019.

3. Any additional products, e.g. capacity

The product, as defined in the PPAs, includes the energy, capacity and all ancillary products, services or attributes similar to the foregoing which are or can be produced by or associated with the Projects including, without limitation, renewable attributes, Renewable Energy Credits, Capacity Attributes and Green Attributes.

4. Generation delivery point (e.g. busbar, hub, etc.)

The following table summarizes each Project's expected point of interconnection to the CAISO grid:

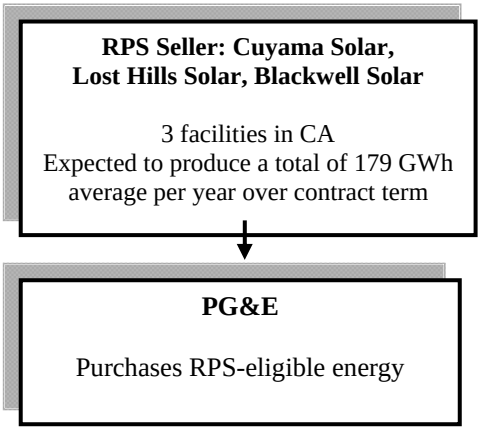
Project	Interconnection Point
Cuyama	PG&E's Cuyama Taft #1 70 kV transmission line directly adjacent to the Cuyama Substation.
Lost Hills	Line tap to the PG&E Arco-Carneras 70kV transmission line where it crosses the Project site.
Blackwell	Line tap to the PG&E Blackwell 1102 12kV distribution circuit where it crosses the Project site.

5. Energy management (e.g. firm/shape, scheduling, selling, etc.)

There is no firming and shaping associated with the PPAs. PG&E, or its agent, will serve as the scheduling coordinator for the Projects.

6. Diagram and explanation of delivery structure

Figure 1: Delivery Structure of the PPAs



F. RPS Statutory Goals & Requirements

1. Briefly describe the Project's consistency with and contribution towards the RPS program's statutory goals set forth in Public Utilities Code §399.11. These goals include displacing fossil fuel consumption within the state; adding new electrical generating facilities within WECC; reducing air pollution in the state; meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation; promoting stable retail rates for electric service; a diversified and balanced energy generation portfolio; meeting the state's resource adequacy requirements; safe and reliable operation of the electrical grid; and implementing state's transmission and land use planning activities.

Public Utilities Code §399.11 states that increasing California's reliance on eligible renewable energy resources is intended to displace fossil fuel consumption within the state, promote stable electricity prices, reduce greenhouse gas ("GHG") emissions, improve environmental quality and promote the goal of a diversified and balanced energy generation portfolio. The proposed Projects are for facilities that will generate clean energy with no fuel cost and no GHG emissions.

2. Describe how procurement pursuant to the contract will meet IOU's specific RPS compliance period needs

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 April 2011, Governor Brown signed into law SB 2 1X. As implemented by D.11-12-020, SB 2 1X requires retail sellers of electricity to meet the following RPS procurement quantity requirements beginning on January 1, 2011:

- An average of twenty percent of the combined bundled retail sales during the first compliance period (2011-2013).
- Sufficient procurement during the second compliance period (2014-2016) that is consistent with the following formula: (.217 * 2014 retail sales) + (.233 * 2015 retail sales) + (.25 * 2016 retail sales).
- Sufficient procurement during the third compliance period (2017-2020) that is consistent with the following formula: (.27 * 2017 retail sales) + (.29 * 2018 retail sales) + (.31 * 2019 retail sales) + (.33 * 2020 retail sales).
- 33 percent of combined bundled retail sales in 2021 and all years thereafter.

Consistent with the Energy Division Staff methodology for calculating the renewable net short,[5] PG&E calculated an assessment of its current expected RPS need as of August 2012. The public portion of this assessment is provided in the table included on the next page, and is further described in Confidential Appendices A1 – A3.

[5] *See* Administrative Law Judge's Ruling (1) Adopting Renewable Net Short Calculation Methodology (2) Incorporating the Attached Methodology into the Record, and (3) Extending the Date for Filing Updates to 2012 Procurement Plans issued on August 2, 2012.

RPS Net Short Calculation as of August 2012

Line #		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	**RPS Target**	20.0%	20.0%	20.0%	21.7%	23.3%	25.0%	27%	29%	31%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
2	**Voluntary Margin of Over-Procurement (GWh)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	**Aggregate Volumes (GWh)**	14,473	14,773	18,737	22,267	24,680	24,812	24,176	22,193	21,465	20,653	20,221	17,896	17,594	17,345	17,231	16,625	16,264	16,176	15,605	15,536
4	**Annual RPS Position (%)**	19.3%					32.1%	31.5%	29.0%	28.0%	26.8%	26.2%	23.2%	22.7%	22.4%	22.2%	21.3%	20.8%	20.7%	19.9%	19.8%
5	**Gross Surplus/(Deficit) compared to Annual Targets* (GWh)**	(500)					5,473	3,474	(22)	(2,309)	(4,743)	(5,226)	(7,602)	(7,954)	(8,255)	(8,421)	(9,078)	(9,490)	(9,629)	(10,252)	(10,373)
6	**Volumes (Banked) or Withdrawn from Bank**	0					(5,473)	(3,474)	22	2,309	4,743	5,226	7,602	4,696	0	0	0	0	0	0	0
7	**Net Surplus/(Deficit) (GWh)**	(500)					0	0	0	0	0	0	0	(3,258)	(8,255)	(8,421)	(9,078)	(9,490)	(9,629)	(10,252)	(10,373)
8	**Net Annual RPS Positions (%) with Use of Bank**	19.3%					25.0%	27.0%	29.0%	31.0%	33.0%	33.0%	33.0%	28.8%	22.4%	22.2%	21.3%	20.8%	20.7%	19.9%	19.8%
9	**Cumulative Banked Volumes (GWh)**	0				15,651	21,125	24,599	24,577	22,268	17,525	12,299	4,696	0	0	0	0	0	0	0	0
10	Forecast Failure Rate (%) for New Projects not yet online	0%	0.0%	1.8%	1.2%	3.7%	12.6%	20.5%	22.0%	22.1%	22.1%	22.2%	22.3%	22.3%	22.4%	22.4%	22.5%	22.6%	22.7%	22.7%	22.7%
11	Forecast Failure Rate (%) for Existing Generation	0%	2.1%	2.6%	1.9%	1.0%	0.8%	0.7%	0.6%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Current Expected Need Scenario (Compliance Period)

		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
12	**Compliance Period Requirement**		20.0%			23.3%			30.0%			33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
13	**Voluntary Margin of Over-Procurement (GWh)**		0			0			0			0	0	0	0	0	0	0	0	0	0
14	**Aggregate Volumes (GWh)**		47,983			71,759			88,487			20,221	17,896	17,594	17,345	17,231	16,625	16,264	16,176	15,605	15,536
15	**RPS Position (%)**								28.8%			26.2%	23.2%	22.7%	22.4%	22.2%	21.3%	20.8%	20.7%	19.9%	19.8%
16	**Gross Surplus/(Deficit) (GWh)**								(3,600)			(5,226)	(7,602)	(7,954)	(8,255)	(8,421)	(9,078)	(9,490)	(9,629)	(10,252)	(10,373)
17	**Volumes (Banked) or Withdrawn from Bank (GWh)**								3,600			5,226	7,602	4,696	0	0	0	0	0	0	0
18	**Net Surplus/(Deficit) (GWh)**								0			0	0	(3,258)	(8,255)	(8,421)	(9,078)	(9,490)	(9,629)	(10,252)	(10,373)
19	**Net RPS Positions (%)**								30.0%			33.0%	33.0%	28.8%	22.4%	22.2%	21.3%	20.8%	20.7%	19.9%	19.8%
20	**Cumulative Banked Volumes (GWh)**					21,125			17,525			12,299	4,696	0	0	0	0	0	0	0	0
21	Forecast Failure Rate (%) for New Projects not yet online		0.6%			5.8%			21.7%			22.2%	22.3%	22.3%	22.4%	22.4%	22.5%	22.6%	22.7%	22.7%	22.7%
22	Forecast Failure Rate (%) for Existing Generation		1.5%			1.2%			0.5%			0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

23	Total RPS Risk Adjusted Net Short (2011-2030) (GWh)	(73,690)

*Assumed annual targets are: 2011-2013 (20% annually), 2014 (21.17%), 2015 (23.3%), 2016 (25%), 2017 (27%), 2018 (29%), 2019 (31%), and 2020 (33%). These targets are illustrative only and not enforceable.

As illustrated by the results of its Current Expected Need Scenario, PG&E's existing RPS portfolio is expected to provide sufficient RPS-eligible deliveries to meet PG&E's RPS compliance requirements in the first compliance period. Additionally, PG&E expects to significantly exceed the RPS procurement targets set for the second compliance period. [6]

Notwithstanding its forecast of limited near-term need, PG&E has incremental need over the third compliance period, prior to applying any excess procurement from earlier compliance periods, and beyond in order to maintain a 33% RPS level. PG&E estimates that it will need approximately 3,600 GWh of cumulative RPS-eligible volumes prior to applying excess procurement to satisfy third compliance period targets. After 2020, when compliance will be measured annually, PG&E's Current Expected Need Scenario indicates a 5,200 GWh shortfall in 2021, increasing to an annual shortfall greater than 8,000 GWh per year in all years after 2023 prior to applying any future excess procurement. This significantly increased need in the early part of the next decade is driven by a large volume of expiring contracts in that time frame.

Deliveries to PG&E under the PPAs will commence on January 1, 2019. Total deliveries from the Projects are expected to average179 GWh per year. The PPAs will therefore contribute toward PG&E's RPS procurement requirements starting in 2019 when PG&E has a need for new incremental deliveries of RPS-eligible power (i.e., the third compliance period and all years thereafter).

G. Confidentiality

Explain if confidential treatment of specific material is requested. Describe the information and reason(s) for confidential treatment consistent with the showing required by D.06-06-066, as modified by D.08-04-023.

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

[6] See Section 6 and notes to Appendix 1 of PG&E's 2012 Renewable Energy Procurement Plan (Draft Version) filed on August 15, 2012 in R.11-05-005. Section 6 provides a description of PG&E's deterministic approach to developing a risk-adjusted forecast, and the notes to Appendix 1 list the bundled retail sales assumptions used in PG&E's net short calculations.

Confidential Attachments:

Appendix A1 – Consistency with Commission Decisions and Rules and Project Development Status - Cuyama
Appendix A2 – Consistency with Commission Decisions and Rules and Project Development Status - Lost Hills
Appendix A3 – Consistency with Commission Decisions and Rules and Project Development Status - Blackwell

Appendix B –2011 Solicitation Overview

Appendix C1 – Independent Evaluator Report (Confidential)

Appendix D1 – Contract Summary Cuyama
Appendix D2 – Contract Summary Lost Hills
Appendix D3 – Contract Summary Blackwell

Appendix E1 – Comparisons of contract to PG&E's 2011 Pro Forma Power Purchase Agreement - Cuyama
Appendix E2 – Comparisons of contracts to PG&E's 2011 Pro Forma Power Purchase Agreement - Lost Hills
Appendix E3 – Comparisons of contracts to PG&E's 2011 Pro Forma Power Purchase Agreement - Blackwell

Appendix F1 – Cuyama Solar Power Purchase Agreements
Appendix F2 – Lost Hills Solar Power Purchase Agreement
Appendix F3 – Blackwell Solar Power Purchase Agreement

Appendix G – Projects' Contributions Toward RPS Goals

Public Attachment

Appendix C2 – Independent Evaluator Report (Public)

II. Consistency with Commission Decisions

A. RPS Procurement Plan

1. **Identify the Commission decision that approved the utility's RPS Procurement Plan. Did the utility adhere to Commission guidelines for filing and revisions?**

PG&E's 2011 renewable procurement plan ("2011 RPS Plan") was conditionally approved in D.11-04-030 on April 14, 2011. PG&E submitted a final version of the 2011 RPS Plan on May 4, 2011.

2. Describe the Procurement Plan's assessment of portfolio needs.

The goal of PG&E's 2011 RPS Plan is to procure approximately one to two percent of PG&E's annual retail sales, or 800 to 1,600 GWh per year. This goal intended to address both the near-term compliance mandate established in SB 2 1X and the longer term PG&E's 2011 RPS Plan expresses PG&E's commitment to meet the goal of serving 33% of its retail sales with renewable resources by 2020.

3. Discuss how the Project is consistent with the utility's Procurement Plan and meets utility procurement and portfolio needs (e.g. capacity, electrical energy, resource adequacy, or any other product resulting from the project).

The Projects are consistent with PG&E's goal to procure 800 to 1,600 GWh per year in the 2011 RPS Solicitation. Because of the 2019 initial delivery dates, deliveries from the Projects will satisfy with PG&E's renewable energy portfolio needs which are projected in the third compliance period and beyond. Furthermore, because the PPAs are long term, and deliveries from each Project are expected to satisfy the criteria of Portfolio Content Category One, any deliveries in excess of PG&E's portfolio need will be bankable and available for use to satisfy future compliance needs.

4. Describe the project characteristics set forth in the solicitation, including the required deliverability characteristics, online dates, locational preferences, etc. and how the Project meets those requirements.

The Projects are also consistent with PG&E's preferred project characteristics set forth in the solicitation. PG&E's 2011 RPS Solicitation Protocol expressed a preference for bundled in-state resources delivering energy and capacity at a delivery point assigned by CAISO inside PG&E's service territory. The Projects are consistent with these preferences because they are located within PG&E's service territory and PG&E is entitled to all of the Projects' Contract Capacity, including Capacity Attributes, from the Projects to enable PG&E to meet its Resource Adequacy or successor program requirements, as the CPUC, CAISO or other regional entity may prescribe.

The PPAs conform to PG&E's Commission-approved 2011 RPS Plan by delivering an average of 179 GWh per year starting in 2019 that will fill a portion of PG&E's RPS net short position. The transactions comply with the RPS program requirements, meet the portfolio needs outlined by the 2011 RPS Plan and are competitive when compared the other bids submitted in the 2011 RFO and final shortlisted offers.

5. For Sales contracts, provide an analysis that evaluates selling the proposed contracted amount vs. banking the RECs towards future RPS compliance requirements (or any reasonable other options)

Not applicable.

B. Bilateral contracting – if applicable

1. Discuss compliance with D.06-10-019 and D.09-06-050.

2. Specify the procurement and/or portfolio needs necessitating the utility to procure bilaterally as opposed to a solicitation.

3. Describe why the Project did not participate in the solicitation and why the benefits of the Project cannot be procured through a subsequent solicitation.

This section is not applicable since the PPAs resulted from PG&E's 2011 RPS Solicitation.

C. Least-Cost, Best-Fit (LCBF) Methodology and Evaluation

1. Briefly describe IOU's LCBF Methodology

2. Indicate when the IOU's Shortlist Report was approved by Energy Division

PG&E filed its 2011 Shortlist Report on November 11, 2011 in Advice Letter 3938-E and a Supplement to its 2011 Shortlist Report on February 8, 2012 in Advice Letter 3938-E-A. The 2011 Shortlist Report had, at the date of this filing, not formally been approved by the Commission.

The RPS statute requires PG&E to procure the "least-cost best-fit" ("LCBF") eligible renewable resources.[7] The LCBF decision directs the utilities to use certain criteria in their bid ranking[8] 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) Market Valuation;
2) Portfolio Fit;
3) Project Viability;
4) RPS Goals; and
5) Transmission Adder.

PG&E examined the reasonableness of the three PPAs using the LCBF evaluation criteria from the 2011 RPS Solicitation. The general finding is that the three PPAs ranked favorably compared to the other projects received in PG&E's 2011 RPS Solicitation. A more detailed discussion of PG&E's evaluation of the three PPAs is provided in Confidential Appendices A1 – A3.

[7] Pub. Util. Code § 399.14(a)(2)(B).

[8] 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 is based on an evaluation of the contract prices in the PPAs. PG&E's analysis of the market value is confidential and addressed in Confidential Appendix A1 – A3.

2. Portfolio Fit

Portfolio fit considers how well an offer's features match PG&E's portfolio needs. PG&E evaluated the offer's consistency with portfolio fit as described in the 2011 RPS Plan and Protocol and filed its initial 2011 RPS Shortlist Report on November 11, 2012.

In a subsequent supplemental filing dated February 8, 2012 in Advice Letter 3938-E-A,[9], PG&E submitted an updated Shortlist Report that includes a new approach to calculate a portfolio-adjusted value ("PAV"). The PAV intends to more accurately reflect the value of renewable resources to PG&E customers. Specifically, the PAV methodology starts with net market value results, which reflect the value of a transaction relative to market forward curves, as an initial quantitative valuation. Additional quantitative adjustments are then made for aspects of market valuation, transmission adder, and portfolio fit described herein and for other factors that impact the value of a transaction with respect to PG&E's portfolio. Using PG&E's PAV methodology for the 2011 RPS Solicitation, the offer compared favorably to the other 2011 RPS shortlisted offers. Additional information about the PAV methodology is provided in Confidential Appendix A and Advice Letter 3938-E-A.

Using its PAV methodology, the Projects compared favorably to the other 2011 RPS shortlisted offers.

3. Project Viability

Project viability is based on three categories: 1) Company / Development Team, 2) Technology, and 3) Development Milestones. It is assessed by the Project Viability Calculator ("PVC") developed by the CPUC's Energy Division. The PVC is a tool for utilities to evaluate the viability of a renewable energy project, relative to all other projects that bid into the California utilities' Renewables Portfolio Standard (RPS) solicitations. The PVC uses standardized categories and criteria to quantify a project's strengths and weaknesses in key areas of renewable project development.

PG&E's analysis of Project Viability and PVC scores are confidential and can be found in Confidential Appendix A1 – A3.

[9] PG&E subsequently filed substitute sheets for Advice Letter 3938 E-A on February 15, 2012.

4. RPS Goals

PG&E assesses the Offer's consistency with and contribution to California's goals for the RPS program and the Offer's support of PG&E's supplier diversity goals (collectively "RPS Goals"). The RPS Goals assessment considers non-quantitative factors, legislative findings and declarations that increase California's reliance on renewable energy, consistency with the CPUC's Water Action Plan, Executive Order S-06-06 which established a goal the state would meet 20% of its renewable energy needs with electricity produced from biomass, and supplier diversity.

5. Transmission Adder

The transmission adder adjusts Offer prices to include the cost, if any, of bringing the power from the generating facility to PG&E's network. Once Offers have been ranked on all evaluation criteria except transmission, the means by which the generation will be delivered to PG&E's customers is examined. Each bid is associated with a transmission cluster based upon the location of the facility. If a CAISO interconnection study has been completed for the project, the costs in that report are used for bid evaluation. If no study has been completed, the project's transmission costs are based upon either the ability to affect deliveries to PG&E's load through exchanges, or other commercially-recognized means, or transmission costs are assigned using the transmission ranking cost report methodology. PG&E uses the lesser of the transmission adder or alternative commercial arrangements in determining the market value of bids and selecting the shortlist.

PG&E's determination of any transmission adder is confidential and can be found in Confidential Appendix A1- A3.

D. Compliance with Standard Terms and Conditions (STCs)

1. Does the proposed contract comply with D.08-04-009, D.08-08-028, and D.10-03-021, as modified by D.11-01-025?

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 ("TRECs") were finalized in D.10-03-021, as modified by D.11-01-025.

The non-modifiable standard terms and conditions in the three PPAs conform exactly to the "non-modifiable" terms set forth in Attachment A of D.08-04-009, as modified be D.08-08-028 and by Appendix C of D.10-03-021, as modified by D.11-01-025.

2. Using the tabular format, provide the specific page and section number where the RPS non-modifiable STCs are located in the contract.

The RPS non-modifiable STCs are found on the following pages of the PPAs:

Non-Modifiable Term Cuyama Solar, LLC	**PPA Section No.**	**PPA Page No.**
STC 1: CPUC Approval	1.42	5
STC 2: RECs and Green Attributes		
• Definition of Green Attributes	1.112	12 - 13
• Conveyance of Green Attributes	3.2	32
STC 6: Eligibility	10.2(b)	58
STC 17: Applicable Law	10.12	67
STC REC-1: Transfer of renewable energy credits	10.2(b)	58
STC REC-2: Tracking of RECs in WREGIS	3.1(k)(viii)	29

Non-Modifiable Term Lost Hills Solar, LLC	**PPA Section No.**	**PPA Page No.**
STC 1: CPUC Approval	1.45	5
STC 2: RECs and Green Attributes		
• Definition of Green Attributes	1.117	12 - 13
• Conveyance of Green Attributes	3.2	34
STC 6: Eligibility	10.2(b)	60
STC 17: Applicable Law	10.12	69
STC REC-1: Transfer of renewable energy credits	10.2(b)	60
STC REC-2: Tracking of RECs in WREGIS	3.1(k)(viii)	31

Non-Modifiable Term Blackwell Solar, LLC	**PPA Section No.**	**PPA Page No.**
STC 1: CPUC Approval	1.45	5
STC 2: RECs and Green Attributes		

Non-Modifiable Term Blackwell Solar, LLC	PPA Section No.	PPA Page No.
• Definition of Green Attributes	1.118	12 - 13
• Conveyance of Green Attributes	3.2	34
STC 6: Eligibility	10.2(b)	60
STC 17: Applicable Law	10.12	69
STC REC-1: Transfer of renewable energy credits	10.2(b)	60
STC REC-2: Tracking of RECs in WREGIS	3.1(k)(viii)	31

3. Provide a redline of the contract against the utility's Commission-approved pro forma RPS contract as Confidential Appendix E to the filed advice letter. Highlight modifiable terms in one color and non-modifiable terms in another.

Redline comparisons of the three PPAs with PG&E's 2011 Pro Forma PPA are provided in Confidential Appendices E1-E3.

E. Portfolio Content Category Claim and Upfront Showing (D.11-12-052, Ordering Paragraph 9)

1. Describe the contract's claimed portfolio content category

2. Explain how the procurement pursuant to the contract is consistent with the criteria of the claimed portfolio content category as adopted in D.11-12-052

3. Describe the risks that the procurement will not be classified in the claimed portfolio content category

4. Describe the value of the contract to ratepayers if:

a. Contract is classified as claimed

b. Contract is not classified as claimed

As described in Section I.E. and in further detail below, each PPA satisfies the upfront showing required for Portfolio Content Category One. SB 2 1X, which is codified at Sections 399.11, and following, established three portfolio content categories that apply to RPS-eligible generation associated with RPS procurement contracts signed after June 1, 2010.

Decision ("D.")11-12-052 requires that IOUs make an upfront showing related to the categorization of each proposed RPS procurement transaction. Specifically, for approval of contracts meeting the criteria of section 399.6 (b)(1)(A) (i.e., "Portfolio Content Category One"),

an IOU may show that the RPS-eligible generator has its first point of interconnection with the WECC transmission system within the boundaries of a California balancing authority area.[10]

The Projects meet the upfront showing required for Portfolio Content Category One because the Projects are each in-state RPS-eligible renewable energy resources that are expected to have first points of interconnection with the with the CAISO. As such, the RPS-eligible procurement from the Projects are expected to qualify as procurement under the first portfolio content category specified in Portfolio Content Category One adopted in D.11-12-052.

There is no known risk that the procurement would not be classified as Portfolio Content Category One. The value of the PPAs as described and assessed in this Advice Letter is based on the assumption that the procurement meets the criteria of Portfolio Content Category One procurement. If the PPAs are classified otherwise their value to PG&E and its customers could be lower under certain limited scenarios. For example, if PG&E (i) exceeds the applicable portfolio balance requirements set forth in Section 399.16(c)(2); and (ii) has excess procurement in that compliance period, D.12-06-038 would require RECs exceeding the portfolio balance requirements to be deducted from the surplus.

F. Minimum Quantity

Minimum contracting requirements apply to short term contracts less than 10 years in length

1. **Explain whether or not the proposed contract triggers the minimum quantity requirement**
2. **If the minimum quantity requirement applies, provide a detailed calculation that shows the extent to which the utility has satisfied the minimum quantity requirement. If the requirement has not yet been satisfied for the current year, explain how the utility expects to satisfy the quantity by the end of the year to count the proposed contract for compliance.**

In D.12-06-038, the Commission determined that in order to count energy deliveries from short-term contracts toward RPS goals, RPS-obligated load-serving entities must contract for deliveries equal to at least 0.25 percent of total retail sales in 2010 if the contract is signed during the first compliance period from 2011-2013. The proposed PPAs are long-term 25-year contracts that do not trigger the minimum quantity requirement set forth in D.12-06-038.

PG&E expects to be in compliance with the long-term contracting requirement for the first compliance period.

[10] See D.11-12-05 at 40-41; See also *id*. at 37 (explaining that the upfront showing required of IOUs for procurement projected to meet Portfolio Content Category One based on the relevant point of interconnection would be "straightforwardly based on showing that the RPS-eligible generator has the applicable first point of interconnection.")

G. Tier 2 Short-term Contract "Fast Track" Process – if applicable

1. Is the facility in commercial operation? If not in commercial operation, explain the IOU's basis for their determination that commercial operation will be achieved within the required six months.

2. Describe and explain any contract modifications to the Commission-approved short-term pro forma contract.

PG&E is not submitting the three PPAs under the "Fast Track" process.

H. Market Price Referent ("MPR")

The actual prices under the PPAs are confidential, market-sensitive information. However, the PPA prices are all below the 25-year 2011 MPR for projects with a 2019 commercial online date ("COD") adopted in resolution E-4442 on December 1, 2011. Total cost information is discussed in Confidential Appendices D1- D3.

I. Interim Emissions Performance Standard

In D.07-01-039, the Commission adopted a greenhouse gas Emissions Performance Standard (EPS) which is applicable to electricity contract for baseload generation, as defined, having a delivery term of five years or more.

1. **Explain whether or not the contract is subject to the EPS.**

A greenhouse gas Emissions Performance Standard ("EPS") was established by Senate Bill 1368 ("SB 1368"), which requires that the Commission consider emissions costs associated with new long-term (five years or greater) power contracts procured on behalf of California ratepayers.

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 a 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.11-05-005.

J. Procurement Review Group (PRG) Participation

1. List PRG participants (by organization/company).

2. Describe the utility's consultation with the PRG, including when information about the contract was provided to the PRG, whether the

information was provided in meetings or other correspondence, and the steps of the procurement process where the PRG was consulted.

3. For short term contracts, if the PRG was not able to be informed prior to filing, explain why the PRG could not be informed.

The Procurement Review Group ("PRG") for PG&E includes the Commission's Energy Division and Division of Ratepayer Advocates, Department of Water Resources, Union of Concerned Scientists, The Utility Reform Network, the California Utility Employees, and Jan Reid, as a PG&E ratepayer. The three PPAs were presented to the PRG as part of PG&E's proposed shortlist on August 12, 2011.[11] On December 23, 2012, PG&E presented the PAV methodology to the PRG and explained how the methodology would apply to the 2011 RPS RFO. The transactions were subsequently presented to the PRG as a potential contract for execution on June 19, 2012. Additional information is provided in Confidential Appendices A1 – A3.

K. Independent Evaluator (IE)

The use of an IE is required by D.04-12-048, D.06-05-039, 07-12-052, and D.09-06-050

1. Name of IE

2. Describe the oversight provided by the IE.

3. List when the IE made any findings to the Procurement Review Group regarding the applicable solicitation, the project/bid, and/or contract negotiations.

4. Insert the public version of the project-specific IE Report.

The IE, Arroyo Seco Consulting, reviewed and assessed PG&E's RPS evaluation and selection process, and observed the negotiations of the PPAs to ensure that they were conducted fairly. Based on the valuation and viability of the Projects, the IE supports that the PPAs merit CPUC approval. The findings of the IE regarding the three PPAs are contained in Confidential Appendix C1 and Public Appendix C2.

III. Project Development Status

A. Company / Development Team

1. Describe the Project development team and/or company principals and describe how many years of experience they have had on the development side of the electric industry.

[11] As described above in Section II. C., PG&E filed a Supplement to the 2011 RPS Shortlist Report on February 8, 2012 in Advice Letter 3938-E-A reflecting the final 2011 RPS RFO shortlist. The final 2011 RPS shortlist was provided to the PRG on January 19, 2012.

First Solar is a large thin-film module manufacturer with an annual manufacturing capacity in excess of one GW. Further details concerning First Solar's development experience is provided below.

2. List any successful projects (renewable and conventional) the Project development team and/or company principals have owned, constructed, and/or operated.

First Solar has developed and completed construction of the following projects in North America. Like the proposed Projects, these projects all use First Solar's proprietary and commercially proven modules:

Paloma Solar Project- First Solar was contracted to design and build the 17 MW Paloma Solar Project in Gila Bend, Arizona. The Paloma project used First Solar's advanced thin-film PV panels.

Blythe Solar Project - The Blythe Solar Project is a 21 MW AC PV generation facility located in Riverside County near Blythe, California. The Blythe Solar Project uses First Solar's thin-film solar photovoltaic panels. First Solar developed, constructed, and operates the facility. NRG Energy now owns the facility.

Cimarron Solar Facility - The Cimarron Solar Facility is a 30 MW PV project located in Colfax County, New Mexico. First Solar developed, constructed, and operates the facility, which features the company's thin-film panels. A portion of the project also utilizes First Solar's tracker technology, similar to the tracker technology that the proposed Project will use. Southern Company and Turner Renewable Energy now own the facility.

Sarnia Solar Farm - The Sarnia Solar Farm is an 80 MW PV generating facility located in Ontario, Canada. The Sarnia Solar Farm uses First Solar's thin-film solar PV panels. First Solar developed, constructed, and operates the facility. Enbridge now owns the facility.

El Dorado / Copper Mountain Solar Project - The El Dorado / Copper Mountain solar project is a 58 MW PV generating facility located near Boulder City, Nevada. The project uses First Solar's thin film solar photovoltaic panels. First Solar provided engineering, procurement, and construction services for the facility, which is owned by Sempra Generation.

In addition, First Solar has approximately 2 GW of executed PPAs with utilities in California, including:

- **550 MW Topaz Project:** Located in San Luis Obispo, California and under contract with PG&E.
- **550 MW Desert Sunlight Project**: Located in Riverside County, California; under contract with Southern California Edison ("SCE") (250 MW) and PG&E (300 MW).
- **290 MW Agua Caliente Project:** Located in Yuma County, Arizona and under contract with PG&E.

- **230 MW AV Solar Ranch One:** Located in Los Angeles County, California and under contract with PG&E.
- **300 MW Stateline Project:** Located in San Bernardino County, California and under contract with SCE.
- **250 MW Silver State South:** Located in Clark County, Nevada and under contract with SCE.

B. Technology

1. Technology Type and Level of Technology Maturity

a. Discuss the type and stage of the Project's proposed technology (e.g. concept state, testing stage, commercially operating, utility-scale operation, ample history of operation).

The Projects will utilize First Solar's proprietary thin film modules. These modules are mature and have been deployed in over 3,000 MW worldwide.

b. If the technology has not been commercially demonstrated, identify whether the developer has or plans to have a demonstration project. Describe the project (MW, hours run), its results (e.g., temperature, GWh, or other appropriate metric) and its ability to perform on a commercial scale.

Not Applicable.

c. If hybrid technology will be deployed, describe the configuration and potential issues and/or benefits created by the hybrid technology.

Not Applicable.

2. Quality of Renewable Resource

a. Explain the quality of the renewable resource that the Project will rely upon. Provide supporting documentation, such as project-specific resource studies, reports from RETI or the National Renewable Energy Lab (NREL) that supports resource quality claims and ability for the facility to provide expected generation.

The Projects rely on solar energy as the sole renewable resource. The Projects are fueled by diffuse and direct sunlight shining on photovoltaic panels. First Solar has assessed the quality of the solar resource for each Project as follows:

Cuyama – Located near in Cuyama, the site has excellent solar radiation characteristics.

Lost Hills and Blackwell – Located in Lost Hills in Kern County, California, the sites have excellent solar radiation characteristics.

These assessments were based on multiple data sources including NREL's Solar Prospector tool[12] as well as First Solar's own ground-based monitoring stations.

b. For biomass projects, please provide a fuel resource analysis and the developer's fuel supply plan. Identify:

i. From whom/where is the fuel being secured; and

b. Where the fuel is being stored.

Not applicable.

c. Explain whether the utility believes that the Project will be able meet the terms of the contract given its independent understanding of the quality of the renewable resource. If necessary, reference successful nearby projects, completed studies, and/or other information.

PG&E believes the Projects will be able to meet the terms of the contract. The quality of each Project's solar resource is well documented by both First Solar and NREL and First Solar provided copies of the energy prediction reports to PG&E.

3. Other Resources Required

a. Identify any other fuel supply (other than the renewable fuel supply discussed above) necessary to the Project and the anticipated source of that supply;

There is no other fuel supply necessary for the Project.

b. Explain whether the developer has secured the necessary rights for water, fuel(s), and any other required inputs to run the Project.

Further information regarding water rights to the project is provided in Confidential Appendices A1-A3.

c. Provide the estimated annual water consumption of the facility (gallons of water/year)

The Cuyama Project will require approximately 155 acre feet of water during construction and one acre feet per year during operation. The Lost Hills Project and the Blackwell Project will each require approximately 100 acre feet of water during construction and two acre feet per year during operation.

d. Explain whether the utility believes that the Project will be able meet the terms of the contract given its independent understanding of the adequacy of the additional fuel or any other necessary resource supply. If necessary, reference

[12] NREL's Solar Prospector tool is available online at http://maps.nrel.gov/prospector.

successful nearby projects, completed studies, and/or other information.

PG&E believes the Projects will be able to meet the terms of their contracts. The applicable solar resources are proven, and First Solar has a demonstrated track record of bringing projects on line.

C. Development Milestones

1. Site Control

Explain the status of Project site control, including:

a. Site control type (e.g. ownership, lease, BLM Right-of-Way grant, etc.)

i. If lease, describe duration of site control and any exercisable extension options

ii. Level or percent of site control attained – if less than 100%, discuss seller's plan for obtaining full site control.

First Solar has site control for each Project under option to purchase agreements.

2. Equipment Procurement

Explain the status of equipment procurement for the Project, including:

a. The status of the procurement of major equipment (e.g. equipment in-hand, contracts executed and equipment in delivery, negotiating contracts with supplier(s), etc.). For equipment not yet procured, explain any contingencies and overall timing.

b. The developer's history of ability to procure equipment.

c. Any identified equipment procurement issues, such as lead time, and their effect on the Project's date of operability.

First Solar has not yet acquired any equipment for the Projects, and does not anticipate any issues acquiring the required equipment.

First Solar manufactures its own commercially proven thin film modules. At the end of 2010, First Solar had a manufacturing capacity of approximately 1,500 MW per year from its facilities in the United States, Germany and Malaysia.

First Solar designs and specifies all equipment used in the single-axis tracker units. First Solar procures the components from multiple suppliers based on a First Solar design specification. While these units are proprietary to First Solar, they are primarily made of galvanized steel and

First Solar has leveraged its existing supply chain for components to secure adequate supply to support First Solar's cumulative project construction well beyond the construction of the Project.

The remaining equipment procured from third party vendors includes inverters, transformers and cabling systems. First Solar has an extensive track record of building utility scale PV plants of this size and has procurement agreements and strategic relationships with multiple suppliers for each type of equipment. The inverter and transformer manufacturer and capacities will be selected based on cost, efficiency, reliability and market availability prior to Project construction.

3. Permitting / Certifications Status

a. Describe the status of the Project's RPS-eligibility certification from the CEC. Explain if there is any uncertainty regarding the Project's eligibility.

Each Project has been certified as RPS-eligible by the California Energy Commission.

b. Use the following table to describe the status of all major permits or authorizations necessary for development and operation of the Project, including, without limitation, CEC authorizations, air permits, certificates of public convenience and necessity (CPCN) or permits to construct (PTC) for transmission, distribution, or substation construction/ expansion, land use permits, building permits, water use or discharge authorizations, Federal Aviation Administration authorizations, military authorizations, and Federal Communication Commission authorizations. If necessary, table may be split between public and confidential sections – permits requests with public agencies should be included in the public portion.

Cuyama

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) – Solar Energy Facility	Santa Barbara County	Permit allowing to construct and operate Cuyama Solar on Agriculture II (AG-II) land	In process; Draft EIR expected Fall 2013	Spring 2013
Land Use Development Code (LUDC)	Santa Barbara County	Proposed amendment allowing utility-scale	LUDC amendment process	Spring 2013

Amendment		commercial solar photovoltaic (PV) power-generating facilities in a district that is zoned AG-II inland of the Coastal Zone, subject to discretionary approval of a CUP	initiated by Santa Barbara County Board of Supervisors	
Consistency rezone for four parcels at the Cuyama Solar Site that are currently zoned U, Unlimited Agricultural District	Santa Barbara County	Outdated zoning designations at Cuyama Solar site to be made consistent with current zoning	In process	Spring 2013
Removal of approximately 167 acres of land from a Williamson Act agricultural preserve contract	Santa Barbara County	Partial cancellation of a Williamson Act contract to accommodate a portion of the Cuyama Solar site	Petition for Partial cancellation submitted to County	Spring 2013
A lot line adjustment, affecting three parcels,	Santa Barbara County	The lot line adjustment will assist with the partial Williamson Act contract cancellation	In process	Spring 2013
County road encroachment, crossing, and right of way permits from Santa Barbara County	Santa Barbara County	Cuyama Solar will have facilities crossing a county road and will be accessed from a county road	To be filed	Spring 2013
Construction/building permits	Santa Barbara County	Construction/Building permits to be obtained following CUP approval	To be filed	Spring 2013
Construction Stormwater general and	California Central Coast	Stormwater and Erosion Control permit	To be filed	Spring 2013

NPDES 1200C	Regional Water Quality Control Board			
Permit to Construct (PTC) or Notice of Construction	California Public Utility Commission	PG&E will obtain a PTC or provide a Notice of Construction to allow for the construction of Cuyama Solar's interconnection facilities	To be file (EIR evaluating impacts of facilities under CEQA)	Spring 2013
Exempt Wholesale Generator Status Approval	Federal Energy Regulatory Commission (FERC)	Wholesale generator status	Status not yet requested from FERC	Project COD

Lost Hills / Blackwell

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	Kern County Planning Dept.	Primary discretionary permit for construction	Approved	Complete
Williamson Act Contract Cancellation	Kern County Board of Supervisors	Cancel Williamson Act contract	Approved	Complete
General Plan Amendment	Kern County Board of Supervisors	Eliminate road reservations with site	Approved	Complete
Grading and Building Permits	Kern County	Ministerial building permits	To be filed	Q3 2013
General Permit for Stormwater Discharge During Construction	Regional Water Quality Control Board	Ministerial construction permit	To be filed	Q3 2013
Encroachment	Caltrans	Ministerial	To be filed	Q3 2013

Permit for Road Access		encroachment permit for site access from State Highway 46		
Exempt Wholesale Generator Status Approval	Federal Energy Regulatory Commission	Exempt Wholesale Generator Status	To be filed	Prior to COD

4. Production Tax Credit (PTC) / Investment Tax Credit (ITC) / Other government funding– if applicable

a. Explain the Project's potential eligibility for tax credits or other government funding based on the technology of the Project and contract operation date.

First Solar indicates that the Projects are eligible for Investment Tax Credits (ITC).

b. If the developer is pursuing PTCs/ITCs/Other, explain the criteria that must be met and the developer's plans for obtaining the PTCs/ITCs/Other.

Under current U.S. tax law, the Projects must be online by the end of 2016. First Solar's project timeline indicates that this date is achievable.

c. Explain whether the utility or the seller bears the risk if the anticipated tax credits/funding are not obtained.

The Seller bears the risk if the ITC is not obtained.

5. Transmission

a. **Discuss the status of the Project's interconnection application, whether the Project is in the CAISO or any other interconnection queue, and which transmission studies are complete and/or in progress.**

Cuyama - First Solar executed a Large Generator Interconnection Agreement ("LGIA") between PG&E and CAISO for the Cuyama Project on March 1, 2012. An Interconnection Request for the Project was submitted to the CAISO in the Transition Cluster process for the Project. All Studies have been completed.

Lost Hills - The 20 MW Small Generator Interconnection Agreement ("SGIA") was executed on March 31, 2011. The Project applied for Full Capacity Deliverability Status in CAISO's Cluster 4 window and is undergoing a deliverability study.

Blackwell – The 12 MW SGIA was executed on October 20, 2011. The Project applied for Full Capacity Deliverability Status in CAISO's Cluster 4 window and is undergoing a deliverability study.

b. Discuss the status of the Interconnection Agreement with the interconnecting utility (e.g., draft issued, executed and at FERC, fully approved).

Cuyama - The Project has an executed LGIA with the CAISO and PG&E.

Lost Hills - The Project has an executed SGIA with the CAISO and PG&E.

Blackwell - The Project has an executed SGIA with the CAISO and PG&E.

c. Describe the required network and gen-tie upgrades and the capacity to be available to the Project upon completion, including any proposed curtailment schemes.

Cuyama - The Project's Interconnection Facilities include the construction of a three mile gen-tie line to the Cuyama -Taft #1 70kV line and addition of a switch at the transmission tap. PG&E will construct, own and maintain the mile generation tie-line at the request of First Solar.

There are no Delivery Network Upgrades required for the Cuyama Project, and it will have Full Capacity Deliverability Status upon completion of the construction of the following Reliability Network Upgrades: Taft – Maricopa and Maricopa – Old River SPS; Atascadero – San Luis Obispo terminal equipment upgrades; and other transmission line and substation work.

Lost Hills – Further information is provided in Confidential Appendices A-2 and D-2.

Blackwell - Further information is provided in Confidential Appendices A-3 and D-3.

d. Describe any required substation upgrades or construction.

Cuyama – Minor upgrades to an existing substation.

Lost Hills – Minor upgrades to an existing substation.

Blackwell - Minor upgrades to an existing substation.

e. Discuss the timing and process for all transmission-related upgrades. Identify critical path items and potential contingencies in the event of delays.

Cuyama – No deliverability upgrades are required.

Lost Hills – Further information is provided in Confidential Appendices A-2 and D-2.

Blackwell - Further information is provided in Confidential Appendices A-3 and D-3.

f. Explain any issues relating to other generating facility projects in the transmission queue as they may affect the Project.

Cuyama – There are no known projects in the CAISO Queue that directly affect the Cuyama Project.

Lost Hills – The Phase 2 study will reflect Cluster 3 and 4 projects that drop from the process, which may impact the cost and timing of the upgrades.

Blackwell - The Phase 2 study will reflect Cluster 3 and 4 projects that drop from the process, which may impact the cost and timing of the upgrades.

g. If the Project is dependent on transmission that is likely to be congested at times, leading to a product that is less than 100% deliverable for at least several years, explain how the utility factored the congestion into the LCBF bid analysis.

Cuyama – Not applicable. There are no Delivery Network Upgrades required for the Project, so it will have Full Capacity Deliverability Status.

Lost Hills – Whether the Project is dependent on transmission that may be subject to congestion depends on the number, location, and timing of other projects in the cluster that become operational and the timing of construction of the Delivery Network Upgrades. The Phase 2 deliverability study should provide more insight into this question.

Blackwell - Whether the Project is dependent on transmission that may be subject to congestion depends on the number, location, and timing of other projects in the cluster that become operational and the timing of construction of the Delivery Network Upgrades. The Phase 2 deliverability study should provide more insight into this question.

h. Describe any alternative transmission arrangements available and/or considered to facilitate delivery of the Project's output.

Cuyama – Not applicable.

Lost Hills – Not applicable.

Blackwell – Not applicable.

D. Financing Plan

1. Explain developer's manner of financing (e.g. project financing, balance sheet financing, utility tax equity investment, etc.).

These projects are expected to be project financed by First Solar.

2. Describe the developer's general project financing status.

No arrangements have been made to date. The financing process is expected to begin later in 2012.

3. To what extent (%) has the developer received firm commitments from financers (both debt and equity), and how much financing is expected to be needed to bring the Project online?

No arrangements have been made to date. The financing process is expected to begin later in 2012.

4. List any government funding or awards received by the Project.

Not Applicable.

5. Explain the creditworthiness of all relevant financiers.

No arrangements have been made to date. The financing process is expected to begin later in 2012.

6. Describe developer's history of ability to procure financing.

First Solar states that in the recent past, First Solar has sold, and commenced construction on ~1.7 GW of utility scale solar projects in North America. These projects involved the raising of ~$8 billion in committed debt and equity. The equity investors in these projects include Southern Company, Exelon, NRG Energy, General Electric Financial Services, Enbridge Capital, Constellation Energy, Tenaska, NextEra (a Florida Power & Light subsidiary), Arizona Public Service, and MidAmerican, the utility company owned by Warren Buffett's Berkshire Hathaway. First Solar indicates MidAmerican not only purchased First Solar's 550 MW Topaz plant in California but also conducted an $850 million bond issuance to finance the deal that was oversubscribed by $400 million.

7. Describe any plans for obtaining subsidies, grants, or any other third party monetary awards (other than Production Tax Credits and Investment Tax Credits) and discuss how the lack of any of this funding will affect the Project.

There are no plans for obtaining subsidies, grants, or any other third party monetary awards other than the ITC, and funding of the Project is not dependent on these items.

IV. Contingencies and/or Milestones

Describe major performance criteria and guaranteed milestones, including those outside the control of the parties, including transmission upgrades, financing, and permitting issues.

The PPAs include certain performance and milestones that PG&E includes in its form RPS PPA contracts. These and other contingencies and milestones are addressed in Confidential Appendices A1-A3 and D 1-D3.

V. REQUEST FOR COMMISSION APPROVAL

PG&E requests that the Commission issue a resolution no later than March 28, 2013, that:

1. Approves the three PPAs in their entirety, including payments to be made by PG&E pursuant to the PPAs, subject to the Commission's review of PG&E's administration of the PPAs.

2. Finds that any procurement pursuant to the three PPAs is procurement from eligible renewable energy resources 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 RPS (Public Utilities Code Section 399.11 et seq.), 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 399.13(g), associated with the PPAs shall be recovered in rates.

4. Adopts the following finding of fact and conclusion of law in support of CPUC Approval:

   a. The PPAs are consistent with PG&E's 2011 RPS procurement plan.

   b. The terms of the PPAs, including the price of delivered energy, are reasonable.

5. Adopts the following finding of fact and conclusion of law in support of cost recovery for the PPAs:

   a. The utility's costs under the PPAs shall be recovered through PG&E's Energy Resource Recovery Account.

   b. Any stranded costs that may arise from the PPAs are subject to the provisions of D.04-12-048 that authorize recovery of stranded renewables procurement costs over the life of the contract. The implementation of the D.04-12-048 stranded cost recovery mechanism is addressed in D.08-09-012.

6. Adopts the following findings with respect to resource compliance with the EPS adopted in R.06-04-009:

   a. The PPAs are not a form of covered procurement subject to the EPS, because the generating facilities have expected capacity factors of less than 60 percent and, therefore, is not baseload generation under paragraph 1(a)(ii) and 3(2)(a) of the adopted Interim EPS Rules.

7. Adopts a finding of fact and conclusion of law that deliveries from the three PPAs shall count in full toward PG&E's RPS requirements and shall be categorized as procurement under the first portfolio content category specified in Section 399.16(b)(1)(A), subject to the Commission's after-the-fact verification that all applicable criteria have been met.

Protests:

Anyone wishing to protest this filing may do so by sending a letter by **October 1, 2012**, which is **21**[13] 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 should be submitted expeditiously. Protests should be mailed to:

[13] The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

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

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies should also be mailed to the attention of the Director, Energy Division, Room 4004, 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: Brian K. Cherry
Vice President, Regulatory Relations
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, California 94177

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

Effective Date:

PG&E requests that the Commission issue a resolution approving this Tier 3 advice filing by early March 2013.

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.11-05-005, and R.12-03-014. 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 General Order 96-B service list should be directed to 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.

Vice President – Regulatory Relations

cc: Service List for R.11-05-005
Service List for R.12-03-014
Paul Douglas – Energy Division
Jason Simon – Energy Division
Adam Schultz – Energy Division
Joseph Abhulimen – DRA
Cynthia Walker – DRA

Attachments

Limited Access to Confidential Material:

The portions of this Advice Letter marked Confidential Protected Material are submitted under the confidentiality protection of Section 583 and 454.5(g) of the Public Utilities Code and General Order 66-C. This material is protected from public disclosure because it consists of, among other items, the Amendment itself, price information, and analysis of the proposed RPS Amendment, 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 A1 – Consistency with Commission Decisions and Rules and Project Development Status - Cuyama
Appendix A2 – Consistency with Commission Decisions and Rules and Project Development Status - Lost Hills
Appendix A3 – Consistency with Commission Decisions and Rules and Project Development Status - Blackwell

Appendix B –2011 Solicitation Overview

Appendix C1 – Independent Evaluator Report (Confidential)

Appendix D1 – Contract Summary Cuyama
Appendix D2 – Contract Summary Lost Hills
Appendix D3 – Contract Summary Blackwell

Appendix E1 – Comparisons of contracts to PG&E's 2011 Pro Forma Power Purchase Agreement -Cuyama
Appendix E2 – Comparisons of contracts to PG&E's 2011 Pro Forma Power Purchase Agreement -Lost Hills
Appendix E3 – Comparisons of contracts to PG&E's 2011 Pro Forma Power Purchase Agreement -Blackwell

Appendix F1 – Cuyama Power Purchase Agreement
Appendix F2 – Lost Hills Power Purchase Agreement
Appendix F3 – Blackwell Power Purchase Agreement

Appendix G – Projects' Contributions Toward RPS Goals

Public Attachment

Appendix C2 – 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 E)**

Utility type:	Contact Person: Greg Backens
☑ ELC ☐ GAS	Phone #: (415) 973-4390
☐ PLC ☐ HEAT ☐ WATER	E-mail: gab4@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) #: **4107-E** **Tier: 3**

Subject of AL: **Three Power Purchase Agreements for Procurement of Eligible Renewable Energy Resources Between First Solar, LLC and Pacific Gas and Electric Company**

Keywords (choose from CPUC listing): **Agreement, Procurement, Contract, 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: **Non-market participants who are 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: **Charlie Post, (415) 973-9286**

Resolution Required? ☑Yes ☐No

Requested effective date: **Early March, 2013** 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:

Service affected and changes proposed:

Protests, dispositions, and all other correspondence regarding this AL are due no later than 21[1] 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
EDTariffUnit@cpuc.ca.gov

Pacific Gas and Electric Company
Attn: Brian K. Cherry, Vice President, Regulatory Relations
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, CA 94177
E-mail: PGETariffs@pge.com

[1] The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

DECLARATION OF CHARLES POST
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION
CONTAINED IN ADVICE LETTER 4107-E
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)

I, Charles Post, declare:

1. I am presently employed by Pacific Gas and Electric Company ("PG&E"), and have been an employee at PG&E since 2000. 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 A1, A2, A3, B, C1, D1, D2, D3, E1, E2, E3, F1, F2 and F3 to PG&E's Advice Letter 4107-E submitted on September 10, 2012. By this Advice Letter, PG&E is seeking this Commission's approval of three PPAs that PG&E has executed with First 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 September 10, 2012 at San Francisco, California.

Charles Post

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 4107-E
September 10, 2012

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (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
Document: Advice Letter 4107-E							
Appendices A1 – A3	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	These Appendices contain bid information and evaluations from the 2011 Solicitation; discuss, analyze and evaluate the Projects and the terms of the Power Purchase Agreements ("PPAs"); contain information, analyses and evaluations of project viability; and contain confidential information of the counterparty (including financial information). Disclosure of this information would provide valuable market sensitive information to competitors. Release of this information would be damaging to negotiations. In addition, if information about and evaluations of the projects' viability is made public, it could harm the counterparties and adversely affect project viability. Finally, certain 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) remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner). For information covered under 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 VIII B), remain confidential for three years after winning bidders selected. For information covered under General Order 66-C, remain confidential.

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 4107-E
September 10, 2012

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (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 B	Y	Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.	Y	Y	Y	This Appendix contains bid information and bid evaluations from the 2011 Solicitation. This information would provide market sensitive information to competitors and is therefore considered confidential. Furthermore, offers received outside of the 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 VIII B), remain confidential for three years after winning bidders selected.

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 4107-E
September 10, 2012

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (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 C1	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 evaluations from the 2011 Solicitation; discusses, analyzes and evaluates the Projects and the terms of the PPAs; contains information, analyses, and evaluations of project viability; and it contains confidential information of the counterparty. Disclosure of this information would provide valuable market sensitive information to competitors. Release of this information would be damaging to negotiations with other counterparties and should remain confidential. In addition, if information about and evaluations of project viability is made public, it could harm the counterparty and adversely affect project viability. Finally, certain 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 counterparty.	For information covered under Item VII G) remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner). For information covered under 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 VIII B), remain confidential for three years after winning bidders selected. For information covered under General Order 66-C, remain confidential.

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 4107-E
September 10, 2012

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (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
Appendices D1 – D3	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	These Appendices contain bid information and evaluations from the 2011 Solicitation; discuss, analyze and evaluate the Projects and the terms of the PPAs; and contains confidential information of the counterparty. Disclosure of this information would provide valuable market sensitive information to competitors. Release of this information would be damaging to negotiations with other counterparties and should remain confidential. Furthermore, the counterparty to the PPAs has an expectation that the terms of the PPAs will remain confidential. 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 counterparty.	For information covered under Item VII G) remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner). For information covered under 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 VIII B), remain confidential for three years after winning bidders selected. For information covered under General Order 66-C, remain confidential.

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 4107-E
September 10, 2012

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (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
Appendices E1 – E3	Y	Item VII G) Renewable Resource Contracts under RPS program - Contracts without SEPs.	Y	Y	Y	These Appendices contain the PPAs for which PG&E seeks approval in the Advice Letter filing. Disclosure of certain terms of the PPAs would provide valuable market sensitive information to competitors. Release of this information would be damaging to negotiations with other counterparties and should remain confidential. Furthermore, the counterparty to the PPAs has an expectation that the terms of the PPAs will remain confidential.	For information covered under Item VII G), remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner).
Appendices F1 – F3	Y	Item VII G) Renewable Resource Contracts under RPS program - Contracts without SEPs.	Y	Y	Y	These Appendices contain the PPAs for which PG&E seeks approval in the Advice Letter filing. Disclosure of certain terms of the PPAs would provide valuable market sensitive information to competitors. Release of this information would be damaging to negotiations with other counterparties and should remain confidential. Furthermore, the counterparty to the PPAs has an expectation that the terms of the PPAs will remain confidential.	For information covered under Item VII G), remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner).
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 other counterparties, this information should remain confidential for three years.	Remain confidential for three years.

Appendix C2
Independent Evaluator Report (Public)

ARROYO SECO CONSULTING

PACIFIC GAS AND ELECTRIC COMPANY 2011 RENEWABLES PORTFOLIO STANDARD SOLICITATION

REPORT OF THE INDEPENDENT EVALUATOR ON CONTRACTS WITH BLACKWELL SOLAR, LLC, CUYAMA SOLAR, LLC, AND LOST HILLS SOLAR, LLC

SEPTEMBER 7, 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report provides an independent evaluation of the process by which the Pacific Gas and Electric Company ("PG&E") negotiated and executed three Power Purchase Agreements (PPAs) with

- Blackwell Solar, LLC, a 12-MW solar photovoltaic generating facility located northeast of the unincorporated community of Blackwell's Corner in northwestern Kern County;

- Cuyama Solar, LLC, a 40-MW solar photovoltaic project located about 2 miles south of the unincorporated farming community of Cuyama in extreme northeastern Santa Barbara County; and

- Lost Hills Solar, LLC, a 20-MW solar photovoltaic project located adjacent to and to the north of the Blackwell Solar project.

All three project companies are currently wholly-owned subsidiaries of First Solar Inc., a vertically-integrated manufacturer and developer of thin-film solar photovoltaic systems. These contracts resulted from PG&E's 2011 Renewables Portfolio Standard (RPS) Request for Offers (RFO). An independent evaluator (IE), Arroyo Seco Consulting (Arroyo), reviewed and assessed PG&E's processes as the utility evaluated the PPAs.

The structure of this report follows the 2011 RPS Shortlist Report Template provided by the Energy Division of the CPUC. Topics covered include:

- The role of the IE;

- Adequacy of outreach for and robustness of the prior competitive solicitation;

- The fairness of the design of PG&E's least-cost, best-fit (LCBF) methodology;

- The fairness of PG&E's administration of its LCBF methodology;[1]

- Fairness of project-specific negotiations; and

- Merit of the PPAs for CPUC approval.

Arroyo's opinion is that the negotiations between PG&E and First Solar to contract for power sales from the three project companies were conducted in a manner that was fair to ratepayers. When viewed in isolation, some contract terms that PG&E provided to

[1] The first four chapters are taken from the IE report prepared in October 2011 that accompanied PG&E's short list; since then the utility has sought to address the concerns expressed about methodology and administration in drafting its 2012 RPS Plan, and has revised its LCBF methodology.

Blackwell Solar and Lost Hills Solar appear to be less than fully fair to competitors, but there are features of the overall negotiations that tend to mitigate these concerns. Arroyo agrees with PG&E that the contracts merit CPUC approval, based on an independently developed opinion that Cuyama Solar ranks as high in net valuation while Blackwell Solar and Lost Hills Solar rank moderate to high in value; all three rank low in contract price. Arroyo regards the portfolio fit of all three projects with PG&E's supply needs as moderate, and their project viability as moderate.

1. ROLE OF THE INDEPENDENT EVALUATOR

Pacific Gas and Electric Company issued a Request for Offers (RFO) on May 11, 2011, a competitive solicitation for power generation that qualifies as eligible renewable energy resources (ERRs) under the California Renewables Portfolio Standard Program.[2] The RPS Program was established by state law to ensure that retail sellers of electricity meet targets for procurement from ERRs as a percentage of annual retail sales.

The CPUC had conditionally approved PG&E's 2011 RPS procurement plan in its Decision 11-04-030 issued on April 14, 2011. This chapter elaborates on the prior CPUC decisions that form the basis for an Independent Evaluator's participation in the 2011 RPS RFO and in bilaterally negotiated contracts for RPS-eligible energy, 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 Decision 04-12-048 on December 16, 2004 (Findings of Fact 94-95, Ordering Paragraph 28). The CPUC required 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 an IE role would serve as a safeguard against anti-competitive conduct in the process of evaluating IOU-built or IOU-affiliated projects competing against Power Purchase Agreements (PPAs) with independent power developers.

In approving the IOUs' 2006 RPS procurement plans, the CPUC issued Decision 06-05-039 on May 25, 2006. This Decision expanded the CPUC's requirements, 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 future competitive solicitations. This requirement 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 was intended by the CPUC to increase the fairness and transparency of the Offer selection process.

Decision 06-05-039 required the 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, and a final report with the advice letter or letters for approval of contracts with the selected Offers.

[2] The solicitation protocol was amended slightly on June 7, 2011 to alter the schedule for the RFO.

B. KEY INDEPENDENT EVALUATOR ROLES

To comply with the requirements ordered by the CPUC, PG&E retained Arroyo Seco Consulting to serve as IE for the 2011 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."[3] More specifically, the Energy Division of the CPUC has provided a template to guide how IEs should report on the 2011 RPS competitive procurement process, outlining four specific issues that should be addressed:

- Describe the IE's role;
- Did the IOU do adequate outreach to potential bidders, and was the solicitation robust?
- Was the IOU's LCBF methodology designed such that bids were fairly evaluated?
- Was the LCBF bid evaluation process fairly administered?

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

C. IE ACTIVITIES

To fulfill the role of evaluating PG&E's 2011 solicitation, several tasks were undertaken, both prior to Offer Opening and subsequently. Prior to Offer Opening on June 22, 2011, Arroyo performed several tasks to assess PG&E's methodology for evaluating Offers:

- Reviewed the solicitation and its attachments including PG&E's 2011 Form Agreements and description of the LCBF methodology and criteria.
- Examined the utility's nonpublic protocols detailing how PG&E would evaluate Offers against various criteria.
- Attended PG&E's Bidders' Conference on May 19, 2011 to evaluate the information provided to potential Participants, and how that information was distributed.
- Reviewed the list of registered attendees of the Bidders' Conference against PG&E's master list of RFO contacts (used for outreach to potential Participants).

[3] 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 posting of questions and answers from the Bidders' Conference on PG&E's public website to check whether information that was made available in-person to conference attendees was also provided to other potential Participants.

- Examined PG&E's 2011 RFO master contact list; performed an analysis of contacts with respect to industry and technology representation.

- Interviewed members of PG&E's evaluation committee regarding details of the 2011 version of the utility's LCBF methodology and its inputs.

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 Offers. Arroyo observed the opening of each Offer and observed the PG&E team logging in each Offer. The IE took an electronic copy of each Offer package, and independently built a database for tracking Offers.

- Reading portions of each Offer. Arroyo particularly scrutinized Offers for utility purchase. For PPA Offers, Arroyo focused on pricing, collateral, interconnection, permitting, technology, resource assessment, site control, and development and ownership experience descriptions in detail.

- Building an independent valuation model and using it to value Offers. This served as a cross-check against PG&E's LCBF model. The IE model used independent inputs and a different methodology than PG&E's. It was much simpler and lacked detail and granularity used in the PG&E model. However, the independent valuation was useful for testing the PG&E team's ranking of Offers using alternate assumptions.

- Attending PG&E's evaluation team discussions of Offers, criteria, issues, etc.

- Scoring Offers independently for viability, using the ED's 2011 version of the Project Viability Calculator. The independently developed Offer valuations and viability scores provided part of the basis for developing an independent view of the relative merit of Offers that the PG&E team selected or rejected.

- Reviewing PG&E's scoring of Offers for the criteria other than market valuation and project viability, testing for consistency and fairness in the treatment of projects.

- Attending meetings of PG&E's steering committee, as it made decisions about the logic for selecting a short list and approved proposed selections for the short list.

- Attending meetings of PG&E's Procurement Review Group (PRG), including answering questions about the solicitation and the Offers, and presenting an independent commentary and observations about the RFO.

- Offering PG&E's evaluation team and steering committee commentary based on independent opinion. In a few cases Arroyo provided specific suggestions on particular topics such as the feasibility of specific out-of-state transmission proposals.

Additionally, in order to prepare this report on the contract with Blackwell Solar, Cuyama Solar, and Lost Hills Solar, Arroyo pursued project-specific activities:

- Observed (telephonically) several negotiation sessions between utility staff and First Solar's commercial team;

- Reviewed draft term sheets, draft contracts, and other documents passed between the parties;

- Performed an independent valuation of the three contracts and evaluation of the project viability of the facilities;

- Compared the net value and pricing of the three contracts to peer groups consisting of alternative competing proposals available to PG&E.

D. TREATMENT OF CONFIDENTIAL INFORMATION

The CPUC's Decision 06-06-066 detailed guidelines for treating confidential information in IOU power procurement and related activities, including competitive solicitations. The Decision provides for confidential treatment of "Score sheets, analyses, evaluations of proposed RPS projects", vs. public treatment (after submittal of final contracts) of the total number of projects and megawatts bid by resource type. Where the IE's reporting on the fairness of PG&E's selection of Offers requires explicit discussion of such analyses, scores, and evaluations, these are redacted from the public report.

2. ADEQUACY OF OUTREACH TO PARTICIPANTS AND ROBUSTNESS OF THE SOLICITATION

In its 2011 RPS solicitation, PG&E sought to meet a goal of procuring 1 to 2% of retail load by selecting Offers that will lead to negotiated contracts and commercially operating generating facilities. This section assesses 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 really concise (it totals 53 pages excluding attachments, vs. Edison's 46 pages and SDG&E's 24 pages), Arroyo believes that the contents of PG&E's 2011 RPS RFO solicitation protocol generally provided clear and comprehensible direction to Participants on how to prepare and submit complete Offer packages that could be accepted and 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:

- Most Offers were submitted as complete and conforming packages. Common deficiencies in other Offers included:

    1. Failure to submit the offer form (Attachment D) for all Offer variants or phases;

    2. Errors in filling in the offer form, such as missing data, incomplete project description, or incomplete self-scored Project Viability Calculator;

    3. Use of a earlier draft version of Attachment D from the original posting of the RFO documents, rather than the one finalized on June 2, 2011 and posted on PG&E's public web site then;

    4. Failure to provide the text and data of the Offer in the requested Microsoft Word 2003 and Excel 2003 formats (as opposed to later versions or to Acrobat .pdf files);

    5. Corrupted data files;

    6. Failure to submit the hardcopies of the Offer as clearly requested in the protocol;

    7. Failure to submit a copy of a completed CAISO or PTO interconnection study in cases where the project had progressed to the point where such a study had been obtained. This requirement was explicitly stated in the solicitation protocol but widely ignored by Participants; and

8. In the case of projects outside California and not directly interconnecting to the CAISO, failure to specify how power would be delivered to a CAISO intertie point with a firm schedule, or what arrangements would be made to deliver to the CAISO.

Since requirements for the offer form were addressed in the solicitation protocol, in the instruction sheet for the offer form, and in the bidders' workshop presentation, Arroyo can only surmise that many Participants neglected to pay attention to these small but important details. Sending deficiency letters to Participants who failed to provide required information and obtaining corrections was time-consuming for all involved, but in most cases corrected documents were provided by the Participants and were accepted by PG&E. Arroyo cannot identify any specific improvements to the clarity of the RFO materials that might have reduced the incidence of such Participant errors, other than editing the instructions for attachment D (e.g. restating in the offer form instructions the need to Enable Macros in MS Excel) or walking through the form step by step in a section of the bidders' conference.

- The 2011 solicitation protocol stated at least four preferences of the utility that are not specifically among the evaluation criteria, including preferences for:

  1. Projects considered bundled, in-state resources, over projects whose output will be considered renewable energy credits (RECs) for RPS compliance purposes;

  2. Projects that deliver to CAISO 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;

  3. Projects that contribute to PG&E's Resource Adequacy (RA) requirements, such as CAISO-interconnected projects with full deliverability, as opposed to energy-only projects in the CAISO or projects in other balancing area authorities for which deliverability or import capability of RA capacity throughout the contract term to PG&E has not yet been established.

  4. Projects that offer flexibility in on-line date, given regulatory uncertainty affecting PG&E's need for RPS-eligible energy in 2014 and 2015.[4]

  Based on comments provided in feedback sessions after the RFO, it appeared that several Participants 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 the future PG&E should edit the protocol to 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 selection process to Participants.

[4] In PG&E's presentation at the bidders' conference, PG&E also expressed a preference that was not included in the solicitation protocol: "PG&E expects to focus on the latter part of the second (2014-2016) compliance period." It would have been helpful to state this preference clearly within the text of the protocol.

- The discussions that took place while debriefing non-shortlisted Participants after the RFO suggest that several developers did not understand the role of the Project Viability Calculator as a tool for assessing the likelihood that a proposed project could attain commercial operation and for screening proposals. Also, it is clear from how some Participants self-scored their projects that the Calculator's scoring guidelines provided by the ED are broadly misunderstood or misinterpreted.

  Several Participants did not or chose not to understand that the Calculator was designed such that the highest score for "project development experience" or "ownership/O&M experience" is assigned only if the development team has previously brought into operation at least two projects of the same technology and similar or larger MW capacity than that proposed. Some Participants could have improved their scores if they had read the guidelines more carefully and chosen to propose projects that could score higher based on those details. However, guidelines were provided in plain sight in the offer form. It is unclear how PG&E could have provided better guidance on how it uses the Calculator, beyond spending more time in the bidders' workshop walking through each criterion in the Calculator in detail.

Given the bulk of material that PG&E needs to provide in its protocol, it is not surprising that it exceeds fifty pages. Arroyo cannot identify any straightforward way to make the protocol more concise; the material provided is generally needed to provide Participants with a full and transparent view of how the solicitation will function and with full disclosure about obligations and constraints that govern Participants if they choose to proceed. One possibility would be to reduce the information required in Offers to focus more narrowly on data needed to establish eligibility and to perform the evaluation.

When the utility solicited feedback from non-shortlisted Participants after closing the solicitation, the sense of the feedback provided by developers was that PG&E's "solicitation was well organized" and "the most user-friendly of the three IOUs", that "the instructions were pretty clear", that in particular "the bidders' conference was very informative" and that the utility team's handling of questions and answers was responsive and helpful. Criticisms of the solicitation tended to focus on technical problems and burdensome nature of filling out the offer form, the priorities embedded in the Project Viability Calculator, the lack of transparency on what sort of projects were short-listed at what prices, the large volume and possible redundancy of information requested in the Offers, and that hardcopies of the Offer packages should not be required as opposed to electronic copies.

Overall, Arroyo believes that PG&E's solicitation materials were clear, if not particularly concise, and that improvement opportunities to help ensure that more complete Offer packages are submitted in the future are minor. Improvements could be helpful in streamlining the process and increasing Participants' satisfaction. Arroyo has some specific critiques regarding the solicitation protocol's lack of transparency about Offers for sites for development, described in the next chapter.

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?

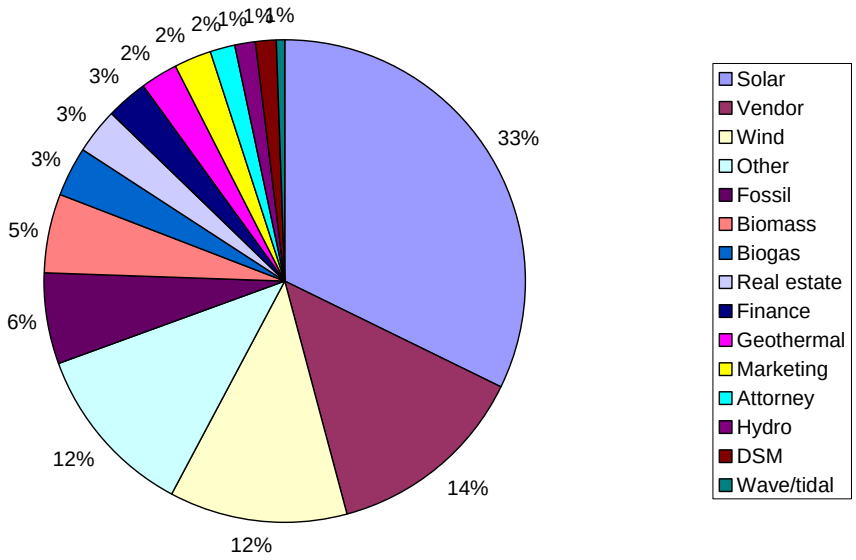
By May 2011, PG&E had compiled a general contact list for use in publicizing its RFOs, totaling more than 1,600 individuals; this is a significant increase from the version of the list used in the 2009 RPS solicitation, with closer to 1,100 contacts. PG&E appears to have been actively compiling contacts for outreach, including a contact list for the biogas industry.

When analyzed to attempt to assess which industries the contacts represented, the largest segment was made up of individuals active 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.

Inspection of the contact list reveals that many of the major developers of renewable energy in North America are included, particularly among solar, wind, and geothermal developers. About 60% of the individual contracts represented organizations that could develop renewable generation or sell from existing facilities. Other contacts were with entities that provide services to renewable energy developers, such as attorneys, financing providers, consultants, equipment vendors, and wholesale marketers; it is unclear whether these providers sought to be on PG&E's RFO contact list in order to keep abreast of the solicitation or to develop business with renewable energy developers.

PG&E did not issue a press release to announce the issuance of the 2011 RPS RFO. However, news of the solicitation was picked up and reported in the electric power trade press, including publications such as Global Power Report, Megawatt Daily, Power, Finance, and Risk, and ReCharge. In addition, the detailed solicitation protocol and its attachments, the schedule, and other informational items were posted on PG&E's public website.

Figure 1. Breakdown of contact list by sector



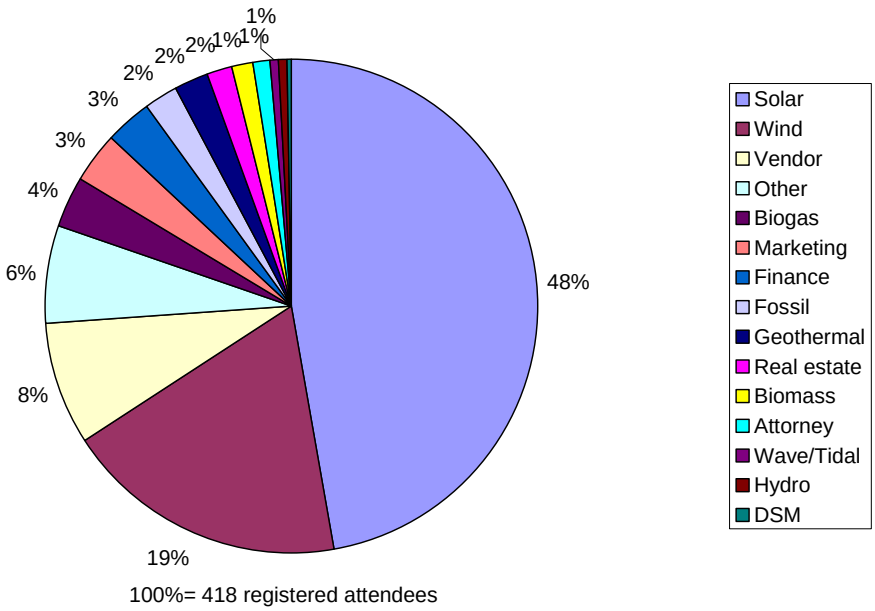
Arroyo notes that news of PG&E's RPS RFO was publicized not only in the trade press but also on the public websites of several law firms whose practices include a focus on renewable energy contract law, such as Allen Matkins, Davis Wright Tremaine, Stoel Rives, and Wilson Sonsini. The news of the RFO was also disseminated by the Geothermal Resources Council and the National Renewable Energy Laboratory.

Another indicator of the adequacy of outreach for the RFO was the response of attendees for the bidders' conference. Figure 2 counts individuals, by sector, who registered for the conference (there is no means to check who actually attended). A turnout of more than 400 individuals represents a very strong response and expression of industry interest, and is an increase of about 70% over the registration for the 2009 RPS RFO bidders' conference. The largest share of attendees represented the solar and wind sectors.

Arroyo estimates that out of the attendees at the 2011 bidders' conference, about 55% were with firms that submitted Offers. This was a higher portion than in the 2009 bidders' conference. This is an indication of successful outreach, in that the audience that registered for the conference was made up mostly of the staffs of developers, owners, or traders that were positioned to submit Offers, as opposed to vendors, attorneys, or consultants to developers, or to small entities that were not really prepared to propose projects.

Arroyo's conclusion is that PG&E conducted substantial outreach to renewable power developers in North America. The number of individuals contacted, the 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.

Figure 2. Breakdown of registration for bidders' conference



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 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 an immense volume of projected generation. If all the Offers were contracted they would total more than PG&E's entire retail load. Such a massive response to the RFO 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. Total GWh/year volume elicited in Offers exceeded the 2009 RFO's response by more than 80%. This ratio of offered volume to targeted procurement volume reflects a remarkably healthy and robust response. More than 300 in-state projects were proposed for contracts, often with several variants (e.g. varying on-line dates, pricing packages, delivery terms, etc.).

The Offers submitted to the 2011 RPS RFO provided more technology diversity than those submitted to the 2009 RFO. There was a greater volume of 2011 proposals for

projects using technologies or resources that were weakly represented in the last solicitation. While it is difficult to attribute this to specific outreach activities by the utility, Arroyo is aware that PG&E staff had actively reached out in order to make potential Participants using these weakly represented technologies aware of the availability of the RPS RFO as a means to obtain long-term PPAs. Given the large number of Offers submitted in 2011 using the well-represented technologies such as solar and wind, Arroyo does not believe that the outreach activities of the utility were in any way unfair to those developer communities.

D. ADEQUACY OF FEEDBACK FROM PARTICIPANTS

After receiving notification that their Offers had been rejected, several of the non-shortlisted Participants expressed an interest in follow-up discussions to be debriefed on reasons for the decision. Arroyo participated in many of these sessions. Based on the number of debriefing sessions that took place (about fifty) and the extent to which the utility team obtained actionable commentary about the RFO from Participants, Arroyo believes that PG&E sought adequate feedback about the bidding and evaluation process.

In general these feedback sessions were welcomed by Participants. They created an opportunity for Participants to obtain a somewhat clearer view of how PG&E's evaluation criteria and preferences applied to their specific Offers, and of what factors played a role in the failure to select the Offers. Many Participants, when prompted to offer feedback on PG&E's solicitation materials and process, had generally positive commentary, including positive ratings for the format of the Offer (such as for the verification checks built into the spreadsheet), for the process and its fairness, for the helpfulness of the bidders' conference, and for the opportunity to debrief on the outcome of PG&E's selection. A variety of specific criticisms were offered, including some constructive suggestions that are summarized later in this report. Some major themes of the criticisms included:

- Data requirements for the written Offers were onerous;
- More transparency in characterizing the price of short-listed Offers would be preferred (often by Participants whose Offers were not short-listed and who aspire to submit their projects to future solicitations with improved pricing);
- The requirement for hardcopies of the Offers should be dropped in favor of electronic-only submittals; and
- More clarity on how the Project Viability Calculator guidelines are applied would be helpful; many Participants disagreed with the Calculator's design because they felt their Offers were unfairly disadvantaged by how scoring criteria are specified.

Arroyo's opinion is that PG&E's efforts to give and receive feedback after the close of the solicitation were adequate and quite helpful both to the utility and to those Participants who were willing to take part in a debriefing session.

3. FAIRNESS OF OFFER EVALUATION AND SELECTION METHODOLOGY

The key finding of this chapter is that PG&E's evaluation and selection methodology for identifying a short list for the 2011 RPS RFO was designed fairly, overall. Arroyo has some disagreements with the utility's approach.

The following discussion identifies principles for evaluating the methodology, describes it, evaluates its strengths and weaknesses, 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 suggested 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. These 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 PG&E's specific situation. Unlike some utilities, PG&E does not rely on weighted-average calculations of scores for evaluation criteria to arrive at a total aggregate score. Instead, the team ranks Offers by net market value, 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."[5] The application of judgment in bringing the non-valuation criteria to bear on

[5]Pacific Gas and Electric Company, "Renewables Portfolio Standard, 2011 Solicitation Protocol, May 11, 2011 (Updated June 7, 2011)", page 40.

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 transparent to Participants.
- The logic of how non-valuation criteria or preferences are used to reject higher-value Offers and select lower-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 legislation that mandated the RPS program required that the procurement process use criteria for selection of least-cost and best-fit renewable resources; in Decisions D.03-06-071 and D.04-07-029 the CPUC issued detailed guidelines for the IOUs to select LCBF renewable resources. PG&E adopted Offer selection and evaluation processes and criteria for its 2011 RPS RFO. These are summarized in Section XI of PG&E's 2011 Solicitation Protocol for its renewable solicitation, and detailed in its Attachment K.

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

- Market valuation
- Portfolio fit
- Project viability
- RPS goals
- Adjustment for transmission cost adders
- Ownership eligibility
- Sites for development

The first five of these are listed as evaluation criteria in the 2011 RPS RFO solicitation protocol (in contrast to prior years, PG&E did not score Offers on Credit). Additionally, the protocol states two other criteria: the materiality and cost impact of Participants' proposed modifications to the RFO's requirements and to the 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, PG&E stated that it will take into account the degree to which Participants have proposed changes to its 2011 RPS Form Agreement 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 PG&E's 2011 RPS 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); ancillary services value is assumed zero. Costs are PG&E's payments to the Participant, adjusted by Time-of-Delivery (TOD) factors as specified in the solicitation protocol. 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 2011 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 uses a real-option pricing model to measure energy benefit.

PG&E develops an outlook for the value of Resource Adequacy capacity as a time series of nominal dollar per kilowatt-year estimates. The CPUC established specific guidelines for estimating RA capacity.[6] Also, the CPUC decided to base Net Qualifying Capacity on a 70% exceedance level for 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. In 2011, the PG&E team has adapted its methodology for estimating the RA capacity of as-yet-unbuilt projects to match the CPUC guidance more closely. Capacity benefit is calculated as the product of capacity value and quantity, and discounted to 2011 nominal dollars.

PORTFOLIO FIT

For the 2011 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.

PROJECT VIABILITY

PG&E employed the Energy Division's final 2011 version of the Project Viability Calculator to assess the likelihood that a proposed generation facility will be completed and

[6] 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.

enter full commercial operation by the proposed on-line date. The CPUC suggested that the Calculator is intended for use as a screening tool rather than a dispositive means of making selection decisions.[7] PG&E was also willing to use its business judgment in assessing the relative viability of projects rather than relying solely on Calculator scores to make selections.

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

- Project development experience,
- Ownership and operating and maintenance experience,
- Technical feasibility,
- Resource quality,
- Manufacturing supply chain (e.g. 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 a helpful effort to standardize how a project would be assigned a score between zero and ten for each. The guidelines support the pursuit of consistency and fairness in rating the viability of proposed projects room for judgment; the combination of the Calculator and its guidelines should serve as a guide to developers on how projects will be assessed by IOUs.

More discussion about the utility of the Calculator as a standardized tool as it was applied in PG&E's 2011 RPS RFO is provided below in the section about the administration of the methodology.

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

[7] 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 20. Arroyo agrees that it is imprudent to rely excessively on the numerical score to make a judgment about the likelihood a project will come on-line on schedule.

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 state Legislature articulated 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 (WMDVBEs). In the 2011 RPS RFO PG&E asked Participants to submit a completed Supplier Diversity Questionnaire with information on the Participant's WMDVBE status, its intent to subcontract with diverse entities, and its own supplier diversity program. The PG&E team scored these questionnaires as part of evaluating Offers against the overall RPS Goals criterion. A change in the 2011 RFO is that PG&E stated that it will include in resulting PPAs a contractual requirement to make good-faith efforts towards a contracted supplier diversity target, and to report annual payments to diverse subcontractors. In Attachment L it requested Participants to specify the percentage of subcontracting spending would be to WMDVBEs.

TRANSMISSION COST ADDERS

The cost of transmission to move power from a project offered in the solicitation to PG&E retail customers is considered in valuation. The methodology takes into account the 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 require network upgrades to accommodate 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 generally uses the more project-specific estimate of transmission network upgrade costs identified in the study rather than the TRCR-based proxy (assuming that the Participant has included the study as part of its Offer package, as was required).

PG&E takes into account both the cost of upgrades required to achieve a reliable interconnection as well as the cost required to achieve a fully deliverable interconnection, for Offers that propose to obtain a full capacity interconnection. While PG&E did not require Participants to achieve full capacity interconnections in the RFO, Offers that proposed energy-only interconnections were not credited with any Resource Adequacy value.

The Solicitation Protocol and its Attachment K lay out the 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 2011 dollars per MWh the impact on customers of the upgrade.

This year, PG&E required Offers to specify a CAISO delivery point and a price at that point, rather than allowing them to propose delivery outside the CAISO. Alternatively, these Participants could propose to use a pseudo-tie arrangement or dynamic scheduling arrangement for the CAISO to manage delivery, despite a project's interconnection in a non-CAISO balancing authority area.

UTILITY OWNERSHIP ALTERNATIVES AND SITES FOR DEVELOPMENT

PG&E developed protocols for evaluating Offers proposing to sell the utility a site for development of renewable generation or to build a facility and transfer it to PG&E ownership. The evaluation of turnkey Offers includes an analysis of the project's value under PG&E ownership and a consideration of the extent to which ownership of such a project is compatible with the utility's core competencies.

There is little specific guidance about how PG&E evaluates the tradeoff between a PPA Offer variant and a Purchase and Sale Agreement (PSA) Offer variant (e.g. build and transfer to utility ownership) 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.

Similarly, both the public solicitation protocol and the non-public protocol give very little specific guidance about how PG&E evaluates Offers for sites for development, and Attachment K is silent on the subject. The protocol does not reveal what technologies PG&E would consider for such an Offer, what term is required, whether site sale or site lease is preferred, or any other requirements or preferences the utility applies when it evaluates proposed sites for development. In the actual event these Offers were evaluated based on criteria that were absent from both the public and non-public protocols, which Arroyo regards as less than fair to Participants. This lack of transparency detracts from the clarity of the RFO materials and contributed to wasted effort on the part of Participants.

COUNTERPARTY CONCENTRATION

In the 2011 RPS solicitation protocol, PG&E stated explicitly that it will consider its total exposure to volume of contracted deliveries from any individual counterparty and the volume already contracted with that party in making selection decisions. Arroyo regards supplier concentration as a legitimate business concern for the utility and its customers, both for credit risk for the utility's supply portfolio as well as risk of development failure.

This year, PG&E made an effort to avoid the prior practices of one or two individual developers that submitted excessively large numbers of Offers, by limiting the total number of Offers per Participant to five, with an exception for small Offers (up to ten Offers per Participant if the total capacity of Offers does not exceed 200 MW). Some developers still submitted more than five large Offers, and others circumvented the restriction by bringing in different part-owners for different groups of projects. Other developers submitted

multiple Offers for projects owned by different subsidiaries or initially owned by other developers while retaining an option to purchase the project if successful. Overall, these tactics used to avoid PG&E's stated limitation do not appear to have benefited those developers at all, but it created excess effort for the utility team; PG&E chose to evaluate all Offers (absent a screening evaluation it would impossible to know which projects to reject).[8]

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 refers to regulatory uncertainty regarding implementation rules on annual compliance goals and states that "PG&E will encourage bids that recognize that uncertainty and offer flexibility toward meeting a range of possible targets (e.g., varied online dates)". Arroyo views this as a reasonable preference to take into account when making a short list given the status of PG&E's RPS compliance position for the next several years.

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, 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. Most of the operators of control areas external to the CAISO have in the past chosen not to provide imbalance service or operating reserves that would be required to enable an intermittent generator in their territory to schedule firm deliveries to a CAISO intertie. Also, contracting with projects that interconnect into PG&E's grid can have other benefits to the utility and its ratepayers, such as enhancing local voltage support. In situations where PG&E is cut off from other service territories (as for example the catastrophic collapse of SDG&E's and IID's systems in September 2011) the robustness of PG&E's system is enhanced by having renewable generation on line in its own territory rather than in other utilities' grids. Consequently Arroyo views PG&E's lower preference for out-of-state power or power delivered into non-CAISO control areas as based on legitimate business concerns.

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 or nil proposed changes to PG&E's standard terms and conditions

[8] Some developers believed that the five-Offer limitation was too constraining in the situation where the company has a large "pipeline" of potential projects of multiple technologies. Other developers praised the five-Offer limitation, observing that "it was very intelligent to limit the size to five projects" because it avoided an even larger proposal response without affecting the short list, under the belief that the limit focuses developers' attention on their lowest-priced and most viable projects.

over Offers whose mark-ups demand unfair concessions, such as projects that propose to post Delivery Term Security that is far less than PG&E's standard requirement.

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 is concerned 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 expressed preference for projects interconnecting within PG&E's grid, or for projects interconnecting within the CAISO, vs. projects delivering at a CAISO intertie point. Arroyo recommends that in future solicitations PG&E edit the solicitation protocol to help clarify that preference.

Also, it would have improved the clarity of the solicitation protocol if it had explicitly stated that PG&E's preference would "focus on the latter part of the 2014-2016 compliance period" as stated in the bidders' conference presentation. It appears, based on debriefings after the RFO's close, that several Participants missed that point and assumed that Offers with earlier on-line dates were preferred, as had previously been the case in PG&E's 2009 RPS RFO. Arroyo speculates that some Participants could have improved the attractiveness of their Offers had they been aware of this subtly stated preference and acted upon it.

SELECTION OF A SHORT LIST

Having ranked Offers by market valuation, including the impact of transmission adders, and having scored the Offers against the non-valuation criteria, the PG&E team 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, then uses scores and information from the 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 2011 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. This affords PG&E a certain degree of latitude in making decisions about how to use information about criteria such as Project Viability and RPS Goals and preferences such as service territory and on-line date in selecting Offers. Unlike other utilities that employ a weighted average of scores for all criteria as a determinative measure to make selection and rejection decisions, PG&E can, up to a point, use its judgment to select lower-valued Offers or less-viable Offers that have special attributes in meeting RPS Goals, for example.

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, the utility's PRG, and internal review. It has thus achieved a certain degree of refinement that has strengthened the process from the perspective of fairness and reasonableness.

1. MARKET VALUATION

General strengths and weaknesses. 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 several valuations 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 forward markets are not liquid and transparent beyond a limited time horizon, PPAs that last for up to 25 years must rely on extrapolation of 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, the valuation must rely on fundamental forecasts for the value of capacity rather than on traded forward curves.

- There are challenges in estimating what Net Qualifying Capacity will be assigned by the CAISO to a project that does not yet exist. To a large extent PG&E must rely on the generation profiles provided by Participants, some of which appear to be of dubious quality.

- The methodology, given its inputs from forward curves, RA value assumptions, and discount rate, sometimes gives results that might appear 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. Such outcomes 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.

- In the 2011 RPS solicitation, PG&E has used historical information about locational marginal price (LMP) to adjust the valuation of Offers based on the historical record. Attachment K to the solicitation protocol displayed the aggregation multipliers used to adjust for LMPs in various zones within the CAISO. Unfortunately, analogous multipliers had not been prepared for delivery points at intertie points of the CAISO; Arroyo recommends that prior to the next RFO the PG&E team investigate how best to make LMP adjustments for Offers that propose to deliver at such points.

Price vs. Value. PG&E's LCBF methodology takes into account both proposed price and estimated net value of each Offer, in the sense that price is a key input to the utility's valuation model. However, PG&E ranks Offers and Offer variants by calculated net value to make a primary screening for selection purposes, and does not construct or review a separate ranking by contract price. The valuation ranking takes into account the total cost to ratepayers of a PPA by including the contract payments (or purchase price) for a project and the transmission rate impact of required network upgrades and the effect of differing market prices across zones on the attractiveness of a project's output. When reviewing Offers to make a short list, PG&E does include information on LCBF-based net value and pricing, but the focus is on net value including transmission cost impacts rather than on contract price.

Financial Benefits and Costs. Overall, PG&E's LCBF methodology adequately takes into account nearly all financial benefits and costs of proposed Offers (see below for one exception). There are some areas that would be challenging for the evaluation team to quantify in financial terms. For example:

- Environmental externalities relating to the impact of new projects on wildlife or scarce water supplies are difficult to quantify as financial costs. A sub-team of PG&E's evaluation team reviews such aspects of proposed projects as their potential impact on threatened and endangered species. While these concerns are not translated into estimates of financial costs, PG&E's selection of a short list is informed by these data.

- Some local areas of PG&E's grid could suffer from deficiencies in local capacity resources compared to requirements identified to maintain local reliability. For example, the CAISO has identified a deficiency of 36 MW of resources in the Sierra local area within PG&E's territory.[9] It is difficult to quantify as financial benefits the extra benefit to grid reliability that would be provided by contracting with new resources in local areas with deficiencies.

- The California IOUs assume that the cost of integrating new resources into the electric system is zero, consistent with current CPUC policy. Utilities in other jurisdictions apply estimated costs of integration for intermittent resources when ranking the value of potential new projects, based on estimates of such components as obtaining sufficient load-following resources and voltage/frequency regulation. One might anticipate that at some point as load grows and as intermittent resources make up a greater proportion of the resource

[9] California Independent System Operator, "2012 Local Capacity Technical Analysis: Final Report and Study Results", April 29, 2011, page 2.

mix within the CAISO the price of increasingly scarce but required load-following and regulation may increase. This potential effect is not included in PG&E's valuation; there is no CEC-approved methodology for such an estimate.

Arroyo acknowledges the challenges of quantifying benefits and costs such as these in monetary terms, and opines that the PG&E LCBF methodology incorporates most financial benefits and costs that reasonably can be estimated at this point in time, with the following two exceptions.

Transmission upgrade costs. As described above, PG&E's LCBF methodology includes the costs of transmission upgrades in its value calculations of all Offers involving projects that propose to interconnect directly to the CAISO, using proxy costs from TRCRs or estimates of network upgrade costs from interconnection studies or executed interconnection agreements. However, the methodology does not take into account these costs in situations where the project proposes to interconnect outside the CAISO balancing authority area and the network costs are ultimately borne by transmission customers of that other balancing authority area. Arroyo believes that valuing projects in these areas without applying transmission adders while valuing projects within the CAISO with adders is less than fully fair to developers of projects within the territories of the three IOUs.

Arroyo recommends that PG&E incorporate estimates of transmission upgrade costs for Offers where projects propose to interconnect within California to non-CAISO balancing authority areas that are entirely or partially located within California. While Arroyo acknowledges that PG&E's ratepayers will not directly bear the costs of network upgrades in these other BAAs, the California ratepayers served directly by these balancing authorities will. Additionally, to the extent that PG&E procures energy from projects within such BAAs, taking delivery at a CAISO intertie point, PG&E's customers will pay a contract price for that power which recovers the cost of transmitting the project's output to the intertie, and those transmission tariffs will eventually reflect the cost of required network upgrades. However, in the 2011 RFO, Arroyo can identify at most one proposal whose selection or rejection might have differed if non-CAISO network upgrade costs had been counted.

Congestion charges. As described previously, the current implementation of the LCBF methodology does not count the congestion charges between certain distant CAISO delivery points and the EZ hubs internal to CAISO service territories. Arroyo recommends that the PG&E team develop estimates of LMP multipliers appropriate for these delivery points as it has done for zones within the main body of the CAISO grid.

2. EVALUATION OF PORTFOLIO FIT

The approach PG&E employed in the 2011 RPS RFO to score Offers on portfolio fit 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 objective in its development with little discretion or judgment involved in applying scoring guidelines.

- The scoring for time of delivery is closely related to how PG&E currently perceives its greatest needs for new RPS procurement, an important consideration for compliance strategy.

There are a few drawbacks to this approach:

- The current scoring approach is somewhat black and white; it tends to provide either a high score or a low score with few steps in between.

- 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 awareness there has not yet been a situation where a renewable Offer's superior portfolio fit score has enabled it to be shortlisted by PG&E 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.

PG&E's revised portfolio fit criterion for the 2011 RPS solicitation is consistent with the utility's current understanding of its generation need for each compliance period under SBX 2. Arroyo has almost no visibility into how PG&E calculates its net short position of RPS-eligible energy procurement vs. RPS goals in the three compliance periods and can therefore have no opinion about whether that calculation was reasonable. To the extent information was made available to the utility's Procurement Review Group, it appears that the portfolio fit methodology aligns well with times when PG&E expects more procurement is needed.

The utility's estimates have considerable potential for error, both because of uncertainty about how the CPUC's implementation rules will set targets for intermediate years like 2014 and 2015, and because of uncertainty about the likelihood that contracted projects will come on-line and the extent to which projects whose PPAs are expiring will be recontracted.

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

Offer Size. PG&E's LCBF valuation methodology is essentially neutral to project size; it does not consider extrinsic variables such as 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 on valuation, 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.

The viability scoring system, however, is not neutral to project size. The larger the proposed 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 on Project Development Experience, Ownership/O&M Experience, and Project Financing Status if the project is larger.

From the debriefings after the conclusion of the RFO, it became evident that many developers failed to appreciate that proposing new projects much larger than any they had

previously brought into operation will lower their viability score using the Energy Division's Project Viability Calculator. Other developers with deep experience in developing large projects in conventional technologies were unaware that the design of the Calculator did not fully take that experience into account in scoring when they proposed to construct large projects using a renewable technology with which they had no prior experience.

This left some non-selected Participants with a sense that the design of the Project Viability Calculator was unfair to them, arguing that it has a "rich get richer" aspect in which only those developers who have previously brought into operation large renewable energy projects can achieve the highest scores for developer and ownership experience for proposed new large renewable energy projects.

The fact that PG&E's objective for the 2011 solicitation is to procure 1 to 2% of retail load, combined with the RFO Goals non-quantitative factor of resource diversity, makes it difficult for the utility to select the very largest-volume proposals offered. An extreme hypothetical scenario in which the utility selects one Offer only of several TWh/year would be the opposite of pursuing resource diversity. The RFO Goals criterion gives PG&E the basis for preferring to select multiple smaller Offers rather than a very few large projects, in pursuit of greater resource diversity. This tradeoff between the criteria of highest valuation vs. resource diversity requires the utility to exercise business judgment about its priorities.

On-Line Date. PG&E's LCBF valuation methodology, using current inputs, exhibits a propensity to favor projects that start later rather than earlier, all else being equal (this is related to inputs about forward prices, capacity value, and discount rate). It is a modest effect, and is roughly consistent with the stated preference of the utility to focus on the latter part of the 2014-2016 compliance period rather than on the first compliance period.

Because of the focus of PG&E's methodology on selecting projects ranked high for net value and project viability, the process is not designed to provide a short list that fits best with PG&E's net short position for RPS compliance. That would require the most valued and most viable proposals to have offered in-service dates that closely match the compliance periods when the utility has the largest net short position, which would be coincidental if it occurred. Instead, because there are more than three evaluation criteria to pursue, the methodology is designed to construct a short list composed primarily of high-valued and highly viable proposals of which some have on-line dates that fall close to compliance periods with short positions, but of which others have substantially earlier or far later in-service dates and don't necessarily fit well with compliance periods of the greatest need.

Similarly, PG&E's methodology is not designed to construct a short list with the highest value to ratepayers while meeting the utility's RPS compliance needs. Such an alternative approach would necessarily disregard the project viability criterion by selecting the highest valued Offers with in-service dates matching RPS compliance periods of greatest need, regardless of whether those low-priced and well-timed projects have progressed at all in permitting, interconnection, and site control processes, and whether or not their technology is well-commercialized or never before demonstrated at utility scale. The IOUs have had bitter experience with low-priced projects that proposed attractive on-line dates but failed to achieve timely commercial operation because of viability issues. PG&E's methodology is designed to screen out high-valued projects that fit well with compliance period needs if they

rank low on project viability. If the PG&E had an alternative approach that disregards viability in pursuit of highest value and fit with compliance needs, then one would expect a short list with a significantly higher likelihood of contract failure than the current approach.

Contract Duration. The valuation methodology similarly tends to favor contracts with longer duration to those with shorter terms, all else being equal. Since few 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 price differences between Offer variants.

4. EVALUATION OF BIDS' TRANSMISSION COSTS

The valuation methodology assigns estimated transmission costs to the contract price of generation in order to compare Offers fairly, taking into account the full cost of generating power including upgrades required to achieve reliable deliverability for new generation. Many 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 view of full costs of the project rather than only the energy procurement cost.

The transmission cost methodology also has some drawbacks:

- The process of estimating transmission adders is analytically burdensome. It requires checking of Participant's information by transmission experts and consumes a considerable portion of the total time for valuation analysis.

- TRCR adders are a generalized, regional proxy for the actual cost of a particular-sized project at a particular interconnection point. There can be rather large deviations between the final cost of network upgrades written into an interconnection agreement and an early TRCR estimate.

- In those cases where the TRCR adder turns out to be an underestimate of actual network upgrade cost, PG&E's prior practice of only performing the full LCBF valuation including transmission adders during solicitations impedes the transparency of decision-making.

- TRCR adders are available only for California IOUs, and only for specific transmission clusters that the IOUs have analyzed. They are not available for other balancing authorities in California or outside the state. It would be challenging for the PG&E team to estimate a proxy for network upgrade cost for projects interconnecting, for example, in the Sacramento Municipal Utility District's or IID's grid unless the project had obtained a system impact study or facilities study or

interconnection agreement from that balancing area authority. Given the focus on new renewables in Imperial Valley, this shortage of information is inconvenient.

- CAISO Phase I studies have been known to provide gross early overestimates of the actual network upgrade costs. In some transmission clusters, excessive numbers of new projects have applied for interconnections; their aggregate new capacity is so large that Phase I estimates of work required to accommodate such a large new build are massive. When posed with the obligation to finance hundreds of millions of dollars of network upgrades for their projects, many developers choose to drop out of the CAISO queue, leaving sufficiently fewer new projects moving through the Phase II study to result in much smaller estimates of network upgrade costs. In these situations, the methodology disadvantages projects that have received a Phase I study but not yet a Phase II study, even though the analysis in hand is the best currently available estimate of project-specific upgrade requirements. This seems less than fully fair to some projects caught in that early stage of analysis.

Whether the transmission adder methodology relies more on TRCR proxy adders or on interconnection studies or interconnection agreement data depends entirely on what projects Participants submit. In the case of PG&E's 2011 RPS solicitation, roughly half the Offers had not applied for an interconnection or had not yet completed a Phase I study or system impact study. This illustrates how reliant the methodology is on the accuracy of the IOUs' Transmission Ranking Cost Reports.

Most Phase I and Phase II interconnection studies provide estimates of both reliability network upgrades and deliverability network upgrades. In situations in which the project has not yet been studied as a full capacity resource, the studies lack an analysis of required deliverability upgrades. In many cases projects apply for an energy-only resource and later request a deliverability assessment (such as for projects that initiated their application under the Small Generator Interconnection Process). PG&E's methodology is designed to be internally consistent; either it treats a project as energy-only and takes into account the estimated reliability network upgrades only and doesn't attribute Resource Adequacy value to the facility, or it treats it as full-capacity, takes into account costs of both reliability and deliverability network upgrades, and attributes RA value. In some cases projects were analyzed both ways and the approach that provided the higher valuation was selected, giving the project the benefit of the doubt that of the two the higher-valued approach would be chosen. This would be consistent with the logic of PG&E choosing to contract with a new project as an energy-only resource if the deliverability network upgrade costs would exceed the value of Resource Adequacy the project can provide.

Conformance checks of transmission study results were performed. Arroyo notes that some Offers misstated the estimated network upgrade costs provided by CAISO or PTO studies. Arroyo believes that PG&E did a thorough job of checking the original source materials when conducting its analysis of transmission adders. Part of the challenge was that many Participants omitted the requested copy of the latest interconnection study, requiring the utility team to seek this information for deficient Offer packages.

5. 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 than methods that use single-digit scores.

- 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.

- Some of 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 12 points. Even among individual members of the PG&E team there was a need to review and standardize scoring to reduce discrepancies between individuals' practices. This suggests that the Calculator is still a crude screening 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.

- As evidenced by feedback from Participants, developers in general have a poor understanding of how the utility interprets the scoring guidelines. Many developers, for example, claimed not understand that their project cannot obtain a score of 10 out of 10 for project development experience if their team has never brought at least two projects of equal or larger size with similar technology into operation…even though that is explicitly what the scoring guidelines in the Calculator state.

- Some scoring criteria would be difficult for a layperson to interpret, such as the Transmission System Upgrade Requirements criterion that requires some basic knowledge of what components of an upgrade require or don't require a CPUC Permit to Construct of Notice of Construction. Many or most developers lack on-staff experts in the regulatory landscape for new transmission build in California.

- 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.

In Arroyo's opinion, PG&E reasonably measured the viability of every project that submitted a conforming proposal for bundled energy, out-of-state power attached to renewable energy credits, or biogas. The evaluation team did not use the Calculator to evaluate Offers for RECs only or sites for development; some Participants for the former did not submit data needed to evaluate their viability, and proposals of land sales or leases are not amenable for scoring as power projects with the information requested or supplied.

The Participants' self-scoring was uneven in quality. While the PG&E team agreed with the self-scored Calculator scores for about a quarter of Offers, on average PG&E gave the Participant-estimated scores a "haircut" of eleven points. This is somewhat distorted by a few developers who scored their own projects by more than 40 points higher than the PG&E team; Arroyo agreed with PG&E that these projects had been assigned grossly inflated scores by any objective standard.

PG&E conducted conformance checks of viability assessments for Offers, in part to ensure quality control and consistency in how multiple scorers applied the scoring guidelines. Particular attention was paid to Offers that were considered for short listing in early drafts, in order to confirm the quality and consistency of the assessments.

In some cases factors not assessed by the Calculator were taken into consideration when the PG&E team made selections; this is consistent with the direction provided by the CPUC about the use of the Calculator as a screening tool.

6. OTHER STRENGTHS AND WEAKNESSES

Evaluation of different technologies. PG&E's protocol tends to avert selecting Offers for utility ownership for which the utility lacks particular core competencies, so there 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.

The Project Viability Calculator was designed to be technology-neutral as well. 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 lacks prior experience developing, owning, operating, or financing, all else being equal. The methodology will tend to discount projects based on emerging technologies or on those that have not been implemented broadly at utility scale, and will tend to promote projects that rely on technologies with widespread market acceptance and many examples of operating 100+ MW installations. It became evident from debriefing Participants that some developers were unaware that the Calculator's design tends to disfavor emerging technologies, and that other competitive venues than the IOUs' RPS RFOs that do not require the use of the Calculator might be more appropriate for projects that employ poorly-commercialized technologies.

PG&E's protocol for RFO Goals includes a provision allowing the utility to consider the non-quantitative factor of resource diversity benefits in the selection process; this is stated in Attachment K and supported by regulatory decisions. This feature allows the utility to consider such things as its resource need for baseload vs. peaking or intermittent generation in selecting Offers. To the extent some technologies are operated as baseload in the

California market and there is a resource need for baseload resources this may tilt Offer selection towards those projects over technologies that provide intermittent or peaking generation. Similarly, the RFO Goals criterion accommodates the non-quantitative factor of continuing to meet the goal stated by Executive Order S-06-06 for biomass-fueled renewable energy, which could tilt Offer selection towards biomass or biogas-fueled generation.

Out-of-state projects. One issue regarding both value and viability concerns Offers for out-of-state projects that propose not to actually deliver power to the CAISO but instead intend to be managed through a pseudo-tie or dynamic scheduling. There are only a very few projects to date where these have been implemented by the CAISO. Because such approaches require the assent of both the CAISO and the foreign balancing area authority to which the project will interconnect (and PTOs in between), it is difficult for PG&E to judge the likelihood of whether such arrangements will actually be achieved. It was evident from reviewing out-of-state Offers that several Participants do not comprehend how their projects will be treated by the CPUC for RPS compliance purposes, with several assuming that their PPAs will be treated as bundled in-state delivery of power, despite failing to specify how they will obtain dynamic scheduling by the CAISO. One hopes that more experience with dynamic scheduling will make it clearer what can and cannot be achieved with these arrangements and that future solicitation protocols can clarify how PG&E will assess them.

Similarly, Arroyo considers it risky for the utility to value out-of-state projects that assume that the import of their power at a CAISO intertie will provide full Resource Adequacy value to PG&E ratepayers. The process for allocation of RA import capability at intertie points does not currently accommodate long-term dedication of that capability to IOUs, putting at risk the delivery of RA value. Simply assuming that full RA benefits of the capacity of these out-of-state projects will be realized for the entire delivery term of a PPA may overstate the value of these projects. However, in the actual selection of projects Arroyo can identify at most one Offer whose selection or rejection might have differed if PG&E had taken a different approach in evaluating pseudo-ties or RA import capability.

Participants' viewpoints on strengths and weaknesses. Feedback from Participants provided some insight into other strengths of PG&E's approach compared to other utilities'.

- The bidders' conference was cited as being "very helpful" by several Participants, in clarifying objectives, evaluation process, and requirements. The ability to ask questions and to obtain answers quickly and spontaneously was cited as useful.

- The solicitation materials were regarded as clear, straightforward, and "user-friendly", with the exception of the Attachment D offer form, with which some Participants had technical difficulties. (Others found the verification process built into this year's Attachment D to be quite helpful and fully functional.) Participants who submitted less commonly pursued approaches (e.g. projects outside the CAISO or sites for development) tended to be more frustrated with their perception that the solicitation materials lacked clarity about their Offers would be evaluated.

- While some Participants clearly did not understand how the scoring guidelines in the Project Viability Calculator were intended to be used and were frustrated that their

early-stage projects were disfavored by the design of the Calculator, others expressed opinions that the Calculator was "fair and relevant" 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 useful information on how to make their projects more competitive in future solicitations. Some Participants particularly appreciated that PG&E provided timely responses about whether their Offers were selected or rejected, in contrast to another IOU.

- Some Participants felt disadvantaged compared to rivals who, they feared, could propose unreasonably low pricing, obtain a PPA, then sell the project. They suggested that PG&E erect higher barriers to participation by "non-serious" parties, such as higher offer deposits (as required in other jurisdictions). Arroyo views this theme as a form of confirmation that PG&E's approach to outreach was successful in obtaining broad and robust competition from the developer community.

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. This process has provided incremental improvements to the methodology over time. 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, some of which were suggested in feedback sessions by Participants.

ENHANCING TRANSPARENCY

One set of suggestions would seek to address the sense that comprehension of how PG&E evaluates and selects Offers among the developer community could be improved. This could help reduce 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:

- Reviewing the scoring guidelines for the Project Viability Calculator in the bidders' conference, to explain what is required to obtain top scores in each criterion;

- Including scoring guidelines for all 11 criteria used in the Calculator in Attachment K, with commentary on what it takes to obtain top scores in each category;

- Editing the solicitation materials to further emphasize the need for out-of-state projects to provide a full price at a CAISO delivery point that the developer would be willing to write into a PPA, rather than a busbar price outside the CAISO;

- Modifying solicitation materials to clarify that the developer must provide a copy of the most recent interconnection study or executed interconnection agreement that will serve as the basis for estimating a transmission adder for network upgrades;

- Revising the solicitation materials to clarify that, in addition to the various evaluation criteria, PG&E will use its preferences regarding delivery point and commercial operation date to make selection decisions. In particular, it would be key to make as clear as possible within the solicitation protocol itself what PG&E's preferences for on-line date are, seeing that many Participants completely failed to notice this;

- Editing the both the public and non-public solicitation protocols to provide a fuller description of how Offers for sites for development will be evaluated, what the basic requirements for eligibility are, what specific evaluation criteria will be used, and what characteristics of offered sites would render them attractive or unattractive to the utility as candidates for ownership. The ownership team should provide clearer internal documentation of how it made its selection and rejection decisions.

STREAMLINING THE PROCESS

At least one other IOU has chosen to drop the requirement for hardcopies of the Offer package; to Arroyo this now seems an appropriate step for PG&E to take, going forward. Arroyo has some lingering concern about the Participants who fail to put all the information present in their hardcopy Offers into readable electronic form using the required format, but this may be dispelled if Offers are submitted entirely in electronic form. Arroyo agrees that it is still best to submit electronic Offer packages by flash drive rather than by e-mail.

Some Participants have objected to the volume of information that PG&E requires for a complete Offer. Arroyo agrees that there are some opportunities to delete some required information that has little or no impact on a short-listing decision (such as project block diagrams and resumes of managers) in favor of seeking such information after short-listing.

IMPROVING VALUATION INPUTS

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

- Use a discount rate based on an estimate of the cost of capital for power developers, rather than PG&E's authorized cost of capital. Arroyo believes that given the risks that face renewable project development (permitting, site control, interconnection, equipment procurement, financing, etc.) it is more appropriate to discount future benefits and costs of the projects using a higher discount rate representative of the riskier independent power industry, rather than that of a regulated monopoly.

- Restudy the inputs to the model that set the basis for Resource Adequacy valuation. For example, it appears that PG&E's current assumption for new entrant capital costs is materially higher than that embedded in the currently applicable Market Price Referent. Arroyo believes that current assumptions (including the use of a regulated utility's cost of capital as discount rate) cause the PG&E team to overstate the value

of RA capacity, and that this tends to create distortions and biases in project valuation rankings.

- Clarify that the most recent CAISO or PTO interconnection study (or interconnection agreement if available) is required in the Offer package. Without this non-public information it is difficult to assess an appropriate transmission adder other than using TRCR information, and data from either a Phase I or Phase II study report is more specific to a given resource than TRCR proxy estimates.

- Develop LMP multipliers for CAISO interconnection points at the periphery of the balancing authority area, such as Four Corners, Moenkopi, Mead, and the Hassayampa-North Gila line, so that energy from projects that propose such nodes as delivery points can be valued taking congestion into account. These are CAISO delivery points that are external to the body of the IOUs' service territories and tend to record higher congestion differentials than points within the territories.

- Discuss with the CAISO its plans and policies for establishing pseudo-ties or dynamic scheduling arrangements for new projects outside the balancing authority area, in order to establish a view about which projects realistically can expect to obtain such treatment and which not. For example, Arroyo perceives it as unlikely that the CAISO could or would set up dynamic scheduling arrangements with projects that interconnect in WECC balancing authority areas that would require wheeling through three service territories to get to a CAISO intertie.

- Offers claiming that a project will be managed as a pseudo-tie should be required to state the specific CAISO intertie with which it will be permanently associated as required by CAISO rules; this would clarify how best to value the proposal.

- Include in the LCBF valuation the costs of network upgrades for projects that interconnect within California but outside the CAISO grid. The practice of evaluating full costs for some projects but PPA costs only (omitting the impact on transmission rates) for other California projects seems inconsistent and less than fully fair to developers who choose to build their generation within the CAISO grid. It also seems less than fully fair to California customers in non-CAISO balancing authority areas who will bear the primary burden for those upgrades.

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 in the 2011 RPS solicitation was conducted fairly. Arroyo's overall conclusion is that the process was conducted in a fair and generally consistent manner. Arroyo disagreed with PG&E about the length of its short list. This chapter discusses 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 suggested a set of principles proposed to guide IEs in determining if an IOU's administration of its 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 use of 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 administration 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?
- If PG&E did not select the projects for the short list that provide the best overall value while meeting the needs of PG&E's three compliance periods, what factors prevented those projects from being selected? Was their rejection based on factors that were communicated transparently to Participants in the solicitation protocol?

- Does the resulting short list conform to the needs of PG&E's portfolio?

- 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 opinions about the strengths and weakness of individual Offers against the evaluation criteria laid out in PG&E's protocols.

Arroyo was present at evaluation team 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 team responsible for scoring the Offers against each of the evaluation criteria. Arroyo was able to question 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;

- Independently scoring Offers using the 2011 Project Viability Calculator;

- Developing a separate and independent point of view about which Offers most merited selection for a short list;

- Comparing PG&E's valuation ranking to the IE model's ranking, 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;

- Auditing communications between PG&E and Participants to check whether any individual Participant was advantaged by requests posed or information provided;

- Reviewing in detail and discussing PG&E's decisions to reject Offers for nonconformance with the requirements of the solicitation protocol;

- 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 rejections were fair and reasonable;

- 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 NONCONFORMANCE TO REQUIREMENTS OF THE SOLICITATION

After Offers were received, PG&E performed a detailed review of the packages in order to identify deficiencies that needed to be addressed by requesting additional information from Participants and to assess which Offers deviated from the requirements of the solicitation protocol. Most Participants whose Offers were identified as deficient were able and willing to address the missing information. A few did not.

Fifteen Offers were rejected by PG&E for nonconformance with the requirements of the Solicitation Protocol. Also, a few variants of Offers were rejected though other variants of the same Offer were accepted as conforming. PG&E rejected some Offers and variants because they violated the requirement stated in the solicitation protocol that projects for a Purchase and Sale Agreement (e.g. for transfer to utility ownership) must be sited within the state of California. PG&E is not at this point in time considering the purchase of out-of-state power plants through RPS solicitations.

Other offers for PPAs were rejected as nonconforming because they specified a price for delivery at a project busbar in a balancing authority area outside California rather than to a CAISO delivery point. Or they proposed an out-of-state project as a PPA for bundled product delivery, rather than a REC sale or a CAISO-approved pseudo-tie or dynamic scheduling arrangement. Some out-of-state Offers failed to provide a detailed or credible plan about how to deliver power to the CAISO, particularly for intermittent resources, or failed to name a specific point of interconnection to the CAISO where the power will be delivered. The solicitation protocol had cited CPUC Decision 11-01-025 regarding bundled transactions requiring interconnections inside California or using dynamic scheduling. It appeared that some Participants do not understand current requirements for a project to be considered an in-state bundled resource for purposes of RPS compliance.

Similarly, some variants were rejected because they failed to conform to another requirement stated in the protocol for PSAs: "The Project and transmission interconnection must be designed and constructed in conformance with California Independent System Operator's (CAISO) various reliability agreements, procedures, protocols, tariffs, and standards."[10] While this eligibility requirement does not says so in so many words, Arroyo interprets it to disqualify PSAs for in-state generation whose interconnection is outside the CAISO's balancing authority area. Such projects would not operate under the CAISO tariff. PG&E is not considering purchasing generation outside the CAISO through RFOs.

[10] Pacific Gas and Electric Company, "Renewables Portfolio Standard: 2011 Solicitation Protocol, May 11, 2011 (Updated June 7, 2011)", page 9.

One Offer submitted for a PSA was rejected for non-compliance with the requirement stated in the solicitation protocol that the "Project should utilize a commercially proven, non-solar technology." PG&E is not currently considering solar generation proposals from the RPS RFO for transfer to utility ownership (as opposed to other competitive solicitations focused on pursuing turnkey approaches to utility-owned solar generation).

PG&E rejected another set of Offers that failed to provide basic information required by the solicitation protocol, such as project location, and which explicitly were offered as indicative, non-binding proposals as opposed to the binding and exclusive requirement for participation in the RFO as stated in the protocol. Other Offers were deemed nonconforming to the requirements of the protocol because they proposed new transmission or new shaping-and-firming service arrangements rather than new PPAs, PSAs, unbundled RECs, or biogas sales as requested in the protocol.

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.

Overall, Arroyo's opinion is that PG&E's decisions about which Offers or Offer variants to classify as nonconforming were fair to Participants. There were Offers that were very clearly nonconforming based on explicit deficiencies from the requirements clearly stated in the solicitation protocol; most Offers were clearly conforming. There was also a gray area in between, in which reasonable people could disagree about whether an Offer should be rejected for nonconformance or not; in general the PG&E team gave Participants whose Offers fell into this gray zone the benefit of the doubt and evaluated the proposals. In many of these cases Arroyo would have rejected the proposals. However, none of these accepted Offers from the gray area were selected given their rankings for value and viability.

Another gray area that troubles Arroyo is the failure of several Participants to submit the required Attachment L, PG&E's supplier diversity questionnaire. As described below, it appears that some Participants did not take the supplier diversity evaluation criterion of the RFO and the requirements of the protocol relating to diversity seriously. In future Arroyo would suggest that Offers lacking a completed Attachment L be rejected as non-conforming if PG&E contacts the Participant to correct the deficiency but the Participant fails to do so.

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 2011 RPS RFO Offers were reasonably and fairly chosen, in Arroyo's opinion. 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 2011 present value. This value is based on PG&E's approved cost of capital. It represents the approved weighted average cost of capital (WACC) for PG&E, on an after-tax basis.

Arroyo doubts 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 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 developer was 11.96% vs. PG&E's authorized 11.35%.

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 (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%. PG&E disagrees, and believes that cash flows in a PPA secured by a regulated utility's credit should be discounted at a regulated WACC.

Arroyo's opinion is that use of a low discount rate 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, and projects with later on-line dates. In particular, the lower discount rate tends to overemphasize the value of Resource Adequacy.

PG&E has a variety of internal controls in place to ensure that selection of inputs is 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 protocols. Also, 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

In its 2011 solicitation, PG&E outsourced a portion of the analysis of transmission adders to an external consultant. An internal PG&E transmission expert oversaw the work and performed quality control on the product; also, Arroyo had an opportunity to review the third-party work product and compare it to the IE's independent analysis as a check.

F. TRANSMISSION COST ADDERS AND INTEGRATION COSTS

PG&E generally followed its transmission analysis protocols in administering its procedures for market valuation. The team used TRCR proxy costs from the three

California IOUs or data from Phase I or Phase II interconnection studies or interconnection agreements 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.

The team followed the public and non-public protocols for analysis of transmission adders. As stated in the discussion of PG&E's LCBF methodology, there are two areas in which Arroyo disagrees with how this was performed. Both fall within lacunae in the protocols, so PG&E's practice was entirely consistent with its protocols.

- Arroyo believes that transmission cost adders should be estimated for projects that interconnect within California but outside the CAISO's balancing authority area, using the estimates of network upgrade costs provided in those other PTO's interconnection studies. Arroyo considers the valuations of these PPAs to understate the full cost of power from the projects, and the analytic approach to be less than fully fair to projects that interconnect to the CAISO grid.

- In Arroyo's opinion, the lack of estimated LMP multipliers for CAISO intertie points that fall outside the main body of the BAA presents a gap in data inputs. Projects that propose to interconnect to these points are unfairly advantaged vs. projects assigned to recognized LMP zones. Arroyo's opinion is that projects interconnecting to far-flung outposts of the CAISO grid in other states should be evaluated with a recognition that nodal prices there are on average materially lower than those within the core of CAISO service territories due to congestion.

G. AFFILIATE PROPOSALS AND TURNKEY OFFERS

PG&E has more stringent eligibility requirements for renewable energy projects intended for utility ownership through turnkey development and transfer (the utility does not have unregulated affiliates that participated in the RPS RFO). For example, PG&E does not accept proposals for utility-owned generation that is sited outside California or outside the CAISO balancing authority area. In the RPS solicitation PG&E did not accept PSA proposals for solar generation; it separately conducts a competitive solicitation seeking solar photovoltaic generation for utility ownership.

Analytically, PG&E has an extra step in applying the same LCBF methodology to projects proposed for PSAs; it estimates a stream of revenue requirements for the project and the estimated operating and maintenance costs to replace PPA payments as the cost of the PSA. Otherwise the evaluation of turnkey proposals is quite similar to that of PPAs.

H. PG&E'S USE OF ADDITIONAL CRITERIA AND ANALYSIS IN CREATING A SHORT LIST

PG&E's overall approach to creating a short list was to rank PPA Offers for bundled delivery to a CAISO node by net value and to screen out (as a first cut) all Offers that scored

below a chosen threshold for project viability. Then the PG&E team went down the list ranked by value, selecting Offers primarily based on highest valuation and higher than threshold viability. These selections were modified by criteria and preferences other than value and viability, described in this section.

PG&E stopped adding highly valued projects to its short list when the total volume of the selections totaled several times the RFO's target of 1% to 2% of PG&E's retail load. The team made a business judgment of how much more than the target would be needed to achieve the goals for the RFO, given a likelihood that Participants would choose exclusive negotiations with other utilities or that Offers would drop out of negotiations at some point.

The team applied different value cutoffs to different classes of projects based on the utility's stated preferences; for example, the valuation cutoff was lower for projects sited within PG&E's service territory than for those interconnecting to other utility's grids. Similarly, the valuation cutoff for Offers of unbundled RECs or RECs plus firm energy was set higher than the cutoff for Offers proposing bundled delivery of energy to a CAISO point. Other situations where the cutoff varied are described below.

1. SERIOUS ENVIRONMENTAL CONCERNS

Appendix K to PG&E's 2011 solicitation protocol states specific subcomponents of the RPS Goals evaluation criterion. 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.

In the 2011 RFO, PG&E's evaluation team screened Offers to identify higher-valued projects with potentially serious environmental impacts; this is the contrapositive of the logic stated in Decision 04-09-027, in that PG&E is using a qualitative attribute to reject Offers from its short list. The team identified only a few Offers as posing sufficiently egregious threats to consider rejection 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 critical habitat.

In administrating its methodology, PG&E only rejected one 2011 Offer based solely on serious environmental concerns; it was adjacent to known occurrences of both endangered and fully protected species. Other projects that were identified as posing such concerns were rejected anyway based on inadequate value or viability scores.

2. RESOURCE DIVERSITY

Another component of the RFO Goals evaluation criterion is resource diversity. Attachment K of PG&E's 2011 solicitation protocol cited "Resource Diversity benefits" as a non-quantitative factor identified in CPUC Decision 04-07-029 that could be considered in Offer selection.

PG&E made an effort to increase the resource diversity of its energy mix by altering the value cutoff point below which it rejected Offers. For example, the PG&E team chose to

accept baseload generation Offers that were valued below proposals for intermittent generation that were rejected. In a sense, the team chose to create a short list that is quite diverse in resource type (rather than, say, one technology) by applying the valuation criterion differently for different resources, rather than selecting only the highest-valued proposals that had acceptable viability. This will likely result in PG&E contracting with a diverse mix of baseload and peaking, and firm and intermittent resources, at a higher cost to ratepayers than only contracting disproportionately with one type of resource at lower cost.

3. SUPPLIER CONCENTRATION

In this year's solicitation, PG&E stated in its protocol that averting excess supplier concentration would be an evaluation criterion. During the selection process this criterion played a role: the PG&E team limited the volume of selected Offers from any individual counterparty. In some cases where a Participant had its most attractive Offers selected, the PG&E team chose to reject remaining Offers from that Participant even though they were higher valued than Offers from other Participants that were also selected. PG&E also chose to reject some rather large proposals from a developer with whom the utility has already contracted large-volume projects that have not yet achieved commercial operation.

One way that PG&E avoided excess supplier concentration was to reject some rather high-volume Offers with high valuations in favor of smaller Offers with lower valuations from the same developer. This enabled the short list to include a larger number of Participants whose smaller Offers were selected, instead of fewer Participants with only large Offers. The result is a more robust solicitation in the sense that more companies are likely to complete contracts and that PG&E's counterparty credit risk will be diversified. It also means that total ratepayer cost will be higher than an alternative scenario in which only the very highest-valued, viable Offers were selected regardless of volume.

In future years the transparency of solicitations would be improved if this aspect or consequence of the supplier concentration criterion were communicated more clearly in the bidders' conference and in the protocol. Arroyo believes that it is unlikely that most Participants were aware that submitting large projects could disadvantage those proposals.

4. DELIVERY POINT

PG&E stated in its 2011 solicitation protocol a preference for projects that deliver 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 the 2011 RPS solicitation, PG&E translated this stated preference into a higher valuation cutoff for in-state projects outside its service territory and a lower valuation cutoff for projects inside. In other words, some projects interconnecting in the SP-15 zone were rejected, whereas if the project with the same resource type, valuation, and viability had proposed to interconnect in NP-15 or ZP-26 it would likely have been selected.

5. COMMERCIAL OPERATION DATE

The solicitation protocol clearly stated PG&E's preference to select Offers that demonstrated flexibility in on-line date. PG&E's bidders' conference presentation stated

that the utility would focus on the latter part of the 2014-2016 compliance period. This preference aligns with the utility's current view of its RPS portfolio needs.

It is difficult to separate the application of this preference in Offer selection from an independent effect: that the LCBF valuation methodology assigns a higher value, all else being equal, to projects with later on-line dates than to projects with earlier on-line dates. Arroyo is not aware of any individual Offer that selected solely because of the timing of its COD, as opposed to a better valuation for later on-line date. Nor is Arroyo aware of any Offer that was rejected solely because its proposed on-line date was far from the latter part of the 2014-2016 compliance period. It was clear that fit of projects' timing with the utility's compliance needs was on the mind of the PG&E team as it constructed the short list.

In future RPS solicitations, PG&E should improve the transparency of its selection process by stating its timing preference directly in the protocol. It was evident from debriefings that many Participants were operating under the mistaken belief that PG&E preferred projects with the earliest on-line dates, as was the case in its 2009 RPS RFO.

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 (WMDVBE) 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 goal by reaching greater than 30% of all procurement with WMDVBEs…The Supplier Diversity evaluation will take into account the Participant's status as a WMDVBE, intent to subcontract with WMDVBEs, and the Participant's own Supplier Diversity Program."

PG&E's evaluation committee scored Offers based on the submittal of Attachment L, a Supplier Diversity Questionnaire.

Historically, only a tiny proportion of IOUs' short-listed Offers or executed PPAs have been executed with WMDVBEs, 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 (or from prime contractors that use diverse suppliers as subcontractors) and PG&E's overall supplier diversity goal.

Among developers submitting to the 2011 RPS RFO, only three Participants were WMDVBEs that have been certified by the CPUC Clearinghouse. None of the Offers submitted by certified WMDVBEs scored above the valuation cutoff. Other Participants claimed to be WMDVBEs that had not yet obtained CPUC certification, but review of their ownership suggested that this claim was inaccurate for at least one entity.

Not only were few Participants actual WMDVBEs, but only a subset of Participants agreed to pursue PG&E's stated WMDVBE subcontracting goal (30% of spend). Some Participants whose Offer was shortlisted stated an intent to meet this goal in their proposals

but others did not. Arroyo views the overall response from the renewable energy developer community towards PG&E's diversity goals as rather weak. It appears that many Participants failed to take the supplier diversity criterion seriously. In future solicitations there may be opportunities to explain or communicate the diversity goal more clearly, and to more explicitly link Offer selection to a Participant's willingness to commit to some subcontracting goal.

I. 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

Arroyo disagreed with some minor aspects of the PG&E analysis and selection, but these pertained to micro-level issues that did not affect overall selection of a short list. For example, Arroyo and the PG&E team scored Offers using the same Project Viability Calculator; in nearly all cases the scores differed, but relative rankings of Offers were similar overall. Other examples of minor disagreement with no impact on selection include:

- Arroyo disagreed with the estimates of LMP multipliers applied to CAISO delivery points outside California which had not been assigned to an LMP zone;

- Arroyo would have rejected as non-compliant more out-of-state Offers with weak cases for achieving regulatory treatment as bundled in-state resources;

- Arroyo would not have assigned full Resource Adequacy value to some of the out-of-state Offers that proposed to deliver power at CAISO intertie points where PG&E's ability to secure RA import capability is limited.

Arroyo's primary critique of PG&E's short list is that it is too large. Total volume is a multiple of the target for procurement of contracts from the 2011 RFO. By choosing to accommodate a large short list, PG&E has selected some Offers that Arroyo considers marginally attractive, rather than focusing on the highest valued, most viable proposals:

- Because PG&E chose a different cutoff for valuation for different types or locations of resources, it selected several Offers that Arroyo ranked as mediocre in net value. Arroyo would have shortened the short list by rejecting these lower-valued proposals.

- PG&E used a cutoff for viability score to screen out many Offers. However, the team selected a very few Offers that it had scored below this threshold, because of other attributes that PG&E considered sufficiently attractive to outweigh the projects' weaker viability assessments. Arroyo would have rejected those proposals based on the projects' mediocre viability.

- Arroyo's input assumptions to the independent valuation place a lower value on Resource Adequacy capacity than PG&E's do. As a result, Arroyo would have ranked some solar projects lower than PG&E did, and some wind generation projects higher; Arroyo would have considered selecting more wind generation.

Although Arroyo disagreed with the resulting short list that PG&E selected, the basis for these disagreements largely centers on differences in business judgments about relative priorities and choices of numerical inputs. Arroyo believes that the choices the PG&E team made were reasonable and justifiable. For example, PG&E's choice to lower the valuation cutoff for certain resource types and locations was fully consistent with placing a relatively high priority on the non-quantitative sub-criterion of resource diversity and on the stated preference for projects within PG&E's service territory. While Arroyo's relative preferences differ, Arroyo believes that PG&E's relative priorities, based on its business judgment, are reasonable.

Similarly, Arroyo disagrees with PG&E's selection of inputs for its valuation of capacity, but acknowledges that the underlying sources of the inputs which generate the RA value estimates come directly from the CPUC and the California Energy Commission. It seems reasonable for a regulated utility to select parameters in a way that they are consistent with guidance from regulators, though Arroyo believes that better choices are available for inputs.

Separately, Arroyo can offer only a qualified opinion about whether the selection of Offers for sites for development was made fairly. The group within PG&E that analyzes these Offers provided incomplete documentation of the basis for selection decisions. Arroyo disagrees with the shortlisting decisions about these Offers. The CPUC will have a better opportunity to review these if PG&E executes contracts for these in the future.

2. INDEPENDENT OFFER ANALYSES

Arroyo conducted its own rather simplified valuation analysis. PG&E's and Arroyo's valuations generally correlated well for many Offers, but with a fair amount of noise in the comparison, as shown in Figure 3 that compares the two sets of valuations. Some of the differences between valuations include:

- Less value assigned to Resource Adequacy in the independent assessment, which tends to lower the value ranking of projects with the most estimated Net Qualifying Capacity such as solar generation;

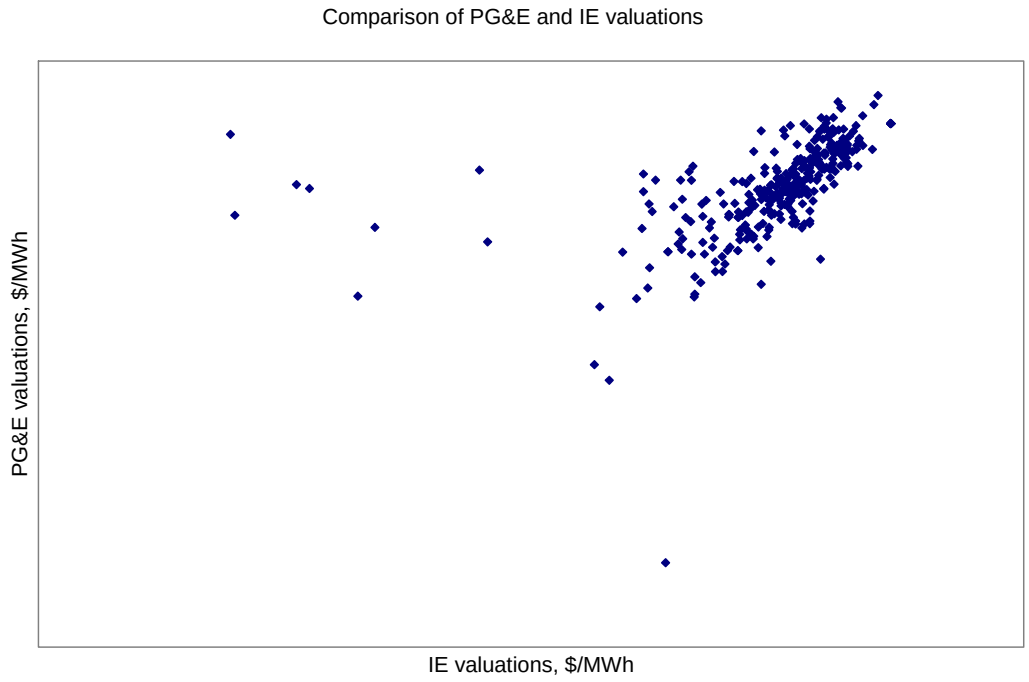
- Less value assigned to projects interconnecting in non-CAISO balancing authority areas;

- Less of a premium assigned to projects with later CODs or longer delivery terms.

This comparison was useful in quality control to identify errors in PG&E's or the IE's input parameters. Also, the comparison helped identify what 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, and the size of transmission adder.

Arroyo also scored each Offer for viability independently of PG&E's analysis. 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 viability or are within the noise of the method. 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 significant differences in the likelihood that project will succeed in attaining commercial operation on schedule, given the modest precision of the tool and the subjectivity of its use.

Figure 3



Some of the differences between viability scores include:

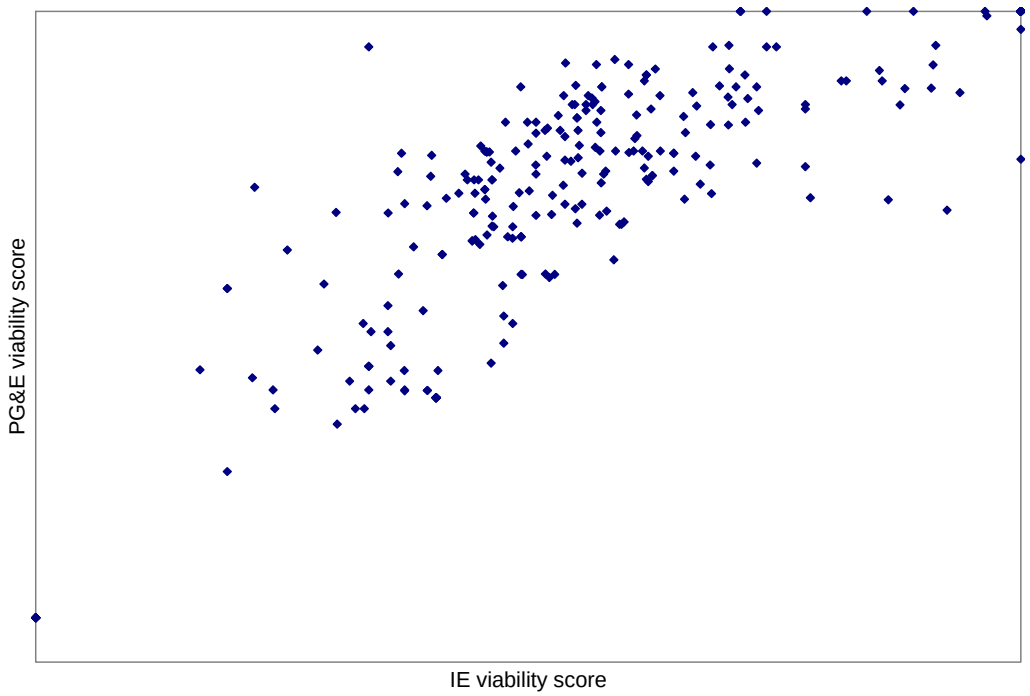
- Lower IE scores for projects proposing very large solar photovoltaic facilities;
- Lower IE scores for projects from developers with experience only in distributed generation (e.g. beyond the meter) projects rather than wholesale generation;
- Lower IE scores for projects for which specific network upgrades are as yet poorly characterized.

3. RECTIFYING DEFICIENCIES OF REJECTED OFFERS

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 deficiencies caused rejection from the short list, as far as Arroyo can discern. Many of the issues related to failure to

complete an Attachment D offer form fully, using the final version of that form, or omission of the most recent CAISO or PTO interconnection study.

Figure 4



Given the robustness of the solicitation and the large number of Offer variants, PG&E did not collect every piece of information required by the protocol from every Participant. Some Participants had obtained interconnection studies for their project but did not submit copies with their proposals. Arroyo observes that in these cases the missing information would not have made a difference to the selection decision. PG&E made a concerted effort to obtain copies of these studies for most of these projects. By this point it was evident which Offers had proposed uncompetitive, high prices and were unlikely to be short-listed.

4. OVERALL FAIRNESS OF ADMINISTRATION

Despite a variety of minor disagreements, Arroyo Seco Consulting's overall judgment is that PG&E's administration of its protocols to arrive at a short list for the 2011 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. Arroyo believes that PG&E's preferences and its choices are within the realm of "reasonable business judgment" that the CPUC allows IOUs to exercise in energy procurement.

5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

This chapter gives an independent review of whether PG&E's negotiations with First Solar Inc. for contracts for delivery of renewable energy from the Blackwell Solar, Cuyama Solar, and Lost Hills Solar projects were fair to ratepayers and competitors.

Arroyo observed several negotiation sessions between PG&E's and First Solar's representatives. Arroyo was also able to review draft term sheets and contracts in order to identify specific proposals and counterproposals the parties made regarding contract terms in the course of discussions.

Based on this review, Arroyo did not identify any situations in which PG&E provided First Solar with concessions in contract terms that the IE considered to be materially unfair to ratepayers. Nor did PG&E provide First Solar with specific information that might have unfairly advantaged the seller compared to its competitors. The starting point for negotiations was PG&E's 2011 RPS Form Agreement; PG&E requested updates to the 2012 Form Agreement when that became available in May 2012. Only a few variances to the utility's standard form language were requested by First Solar and accepted by PG&E.

Arroyo's opinion is that the negotiations between PG&E and First Solar for the Blackwell Solar, Cuyama Solar, and Lost Hills Solar contracts were conducted in a manner that was fair to ratepayers. The resulting contract retains the ratepayer protections afforded by PG&E's Form Agreement. However, PG&E provided specific contract terms to First Solar that would advantage two of the three projects compared to their competitors in a specific scenario that Arroyo regards as not highly likely. When viewed in isolation, the disparate treatment that Blackwell Solar and Lost Hills Solar receive in this scenario compared to a competitor appears to be less than fully fair to competitors; however there are mitigating circumstances that help explain the disparity.

A. BACKGROUND INFORMATION

First Solar Inc. is a North American manufacturer of thin-film solar modules and developer of solar photovoltaic projects, headquartered in Tempe, Arizona. It is the world's largest manufacturer of thin-firm photovoltaic modules, producing nearly 2 GW in 2011. It has grown its project development pipeline and project installed base through acquisition of other solar project developers such as NextLight (2010) and by acquiring the project development pipeline of other developers such as OptiSolar (2009) and Edison Mission Energy's solar power unit (2010).

First Solar's strategy with respect to solar project development, as stated in its 2011 annual report, is to "sell developed projects to system operators who wish to own generating facilities, such as utilities, or to investors who are looking for long-term investment vehicles". Thus, while First Solar has previously acquired or developed projects for which it

negotiated PPAs with PG&E, such as Agua Caliente Solar, Antelope Valley Solar 1, and Desert Sunlight, it subsequently sold these projects to new owners (NRG Energy and MidAmerican Energy, Exelon Corp., and NextEra Energy and General Electric Financial Services, respectively). Arroyo speculates that the Blackwell Solar, Cuyama Solar, and Lost Hills Solar facilities will similarly be sold to new owners.

First Solar submitted [redacted] Offers for new solar PV projects to PG&E's 2011 RPS RFO,

[redacted]

All these projects were proposed to use First Solar's cadmium-telluride thin-firm panels mounted on single-axis trackers.

In the case of Cuyama Solar, First Solar has obtained site control [redacted]

For the Blackwell Solar and Lost Hills Solar site, First Solar has obtained site control [redacted]

The parties negotiated for several months in 2012. In May 2012, First Solar requested and PG&E agreed to split the 32-MW Lost Hills Solar Offer into two separate PPAs: a 20-MW contract for Lost Hills Solar and a 12-MW contract for Blackwell Solar which is interconnecting separately at the distribution level. In July 2012, PG&E selected the most competitive of the remaining shortlisted Offers from its 2011 RPS RFO for execution, including the three First Solar PPAs, based on current market conditions and using the portfolio-adjusted valuation approach described in the next chapter rather than the version of the LCBF methodology that was used to make shortlisting decisions in the summer of 2011 as described in Chapter 3.[11] The parties executed the contract for Blackwell Solar, and Lost Hills Solar on August 13, 2012 and the contract for Cuyama Solar on August 20, 2012.

B. PRINCIPLES FOR EVALUATING THE FAIRNESS OF NEGOTIATIONS

Arroyo took into account several principles to evaluate the degree of fairness with which First Energy was treated in negotiations.

[11] Chapters 1 through 4 of this report restate the October 2011 public version of the IE report that accompanied the filing of PG&E's short list; PG&E's methods have been altered since then.

- Were sellers treated fairly and consistently by PG&E during negotiations? Were all sellers given equitable opportunities to advance their Offers towards final PPAs? Were individual sellers given unique opportunities to move their proposals 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 sellers 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 sellers? Were individual sellers uniquely given information that advantaged them in securing contracts or realizing commercial value from those contracts?

- If any individual seller was given preferential treatment by PG&E in the course of negotiations, is there evidence that other sellers were disadvantaged by that treatment? Were other proposals of comparable value to ratepayers assigned materially worse outcomes?

C. NEGOTIATIONS BETWEEN FIRST SOLAR AND PG&E

While discussions about the three projects began in September 2011, actual negotiations between the parties extended from January through August 2012. Some of the issues addressed in the negotiation included:

[redacted]

[redacted]

D. DEGREE OF FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

The starting point for drafting the PPAs with Blackwell Solar, Cuyama Solar, and Lost Hills Solar was PG&E's 2011 RPS Form Agreement, which served as the basis for contracting with other sellers. In June 2012 PG&E updated the draft PPA to include features of its draft 2012 RPS Form Agreement. There are only a few modifications to the Form Agreement that could raise issues about whether ratepayers or competing generators were treated unfairly. To a large extent PG&E refused to accommodate First Solar in several requested modifications to the standard text of the PPA.

One fairness issue is the design of the Blackwell Solar and Lost Hills Solar contracts to handle the scenario in which [redacted]

[redacted]

PG&E's treatment of [redacted] compared to that of Blackwell Solar and Lost Hills Solar is quite disparate. [redacted]

PG&E disparate treatment of the projects stems from its effort to ensure that ratepayers are treated fairly and kept whole in the scenario [redacted]

Arroyo discusses the value of the Blackwell Solar and Lost Hills Solar PPAs if they become [redacted] However, the disparate treatment of [redacted] the two First Solar projects appears to be less than fully fair to [redacted] when this element of the PPAs is considered in isolation. All three projects are subject to [redacted] Arroyo regards the contrast in outcomes in this (admittedly low-probability) scenario to be somewhat less than entirely equitable.

The disparate treatment borne by [redacted] could be mitigated by the fact that [redacted]

[redacted]

One principle that Arroyo uses to evaluate the fairness of negotiations is whether other proposals of comparable value to ratepayers were assigned materially worse outcomes. [redacted]

Another mitigating consideration is that Arroyo cannot identify any specific alternate way to construct the contract terms [redacted] that would have treated ratepayers fairly while meaningfully reducing the disparity between the treatment [redacted] Arroyo acknowledges that in a situation where there is a hard tradeoff between negotiating terms that are fair to ratepayers and terms that are fair to developers it would seem the former is preferable.

[redacted]
Arroyo's own opinion is that the disparity of treatment seems less than fully fair, but not so unfair as to imply that the PPAs do not merit approval, given several mitigating circumstances.

Overall, Arroyo's opinion is that the negotiations with First Solar for the contracts with Blackwell Solar, Cuyama Solar, and Lost Hills Solar were handled in a manner that was fair to ratepayers but appears less than fully fair to competitors:

- Sellers with Offers of comparable value and viability were given opportunities to move their proposals forward (other shortlisted projects with higher value initially did not reach an executed contract because their pricing was not improved as these three projects' prices were reduced upon PG&E's request).

- The distribution of risk between PG&E and the three projects is roughly comparable to that in other contracts with intermittent generators. Ratepayers do not take on a disproportionate degree of risk with any of these contracts.

- Arroyo does not believe that PG&E provided any information to First Solar that may have advantaged the seller compared to its competitors in a way that would have influenced the outcome of the solicitation.

- PG&E provided Blackwell Solar and Lost Hills Solar with specific contract terms that, under certain circumstances, lead to outcomes for these projects that are quite disparate from those that competitors face. Arroyo regards this disparity in contract design as less than fully fair, but this is a matter of opinion and other observers could reasonably disagree: disparate treatment is not necessarily inequitable treatment. Also, there are mitigating circumstances that make it difficult to see how PG&E could have treated these projects in a less disparate manner without harming ratepayers' interests.

6. MERIT FOR CPUC APPROVAL

This chapter provides an independent review of the merits of PG&E's contracts with Blackwell Solar, Cuyama Solar, and Lost Hills Solar against criteria identified in the Energy Division's 2011 RPS IE template.

A. CONTRACT SUMMARY

On August 13, 2012, PG&E executed contracts with Blackwell Solar and Lost Hills Solar, and on August 20 the contract with Cuyama Solar was executed. The solar photovoltaic projects will have contract quantity averaging roughly 28 GWh/year for Blackwell Solar, 104 GWh/year for Cuyama Solar, and 47 GWh for Lost Hills Solar over the delivery terms[12]. The initial energy delivery dates for these contracts will be no sooner than the start of 2019, and the contracts have delivery terms of twenty-five years starting on those dates. Blackwell Solar and Lost Hills Solar will be adjacent to each other with two separate points of interconnection, northeast of the highway crossing of Blackwell's Corner in northwest Kern County, across state highway 46 from PG&E's Blackwell substation. Cuyama Solar will be sited south of the hamlet of Cuyama in an agricultural valley in northeastern Santa Barbara County.

B. NARRATIVE OF EVALUATION CRITERIA AND RANKING

The 2011 RPS template for IEs provided by the Energy Division calls for a narrative of the merits of the proposed project on the criteria of contract price, portfolio fit, and project viability.

CONTRACT PRICE AND MARKET VALUATION

Arroyo has compared the net value of the three First Solar PPAs to relevant peer groups of previously and currently offered competing sources of RPS-eligible energy, using the results of both PG&E's analysis and a simpler but independent model. Based on those comparisons, Arroyo opines that the market valuation of the Cuyama Solar contract ranks as high compared to relevant peer groups of competing proposals, and the value of the Blackwell Solar and Lost Hills Solar contracts rank as moderate to high. The contract prices of all three PPAs rank low compared to competing alternatives.

Contract Price. [redacted]

12 [redacted]

[redacted]

On that basis, Arroyo's opinion is that the contract prices of the three PPAs rank low among competing alternatives.

Market Valuation. Using different versions of its least-cost, best-fit methodology PG&E estimated the value of the three projects' deliveries under the PPA, taking as inputs for market forward price observations from July 11, 2012. By one measure, the three contracts' estimated net market value [redacted]

[redacted]

[redacted]

PG&E also estimated the "portfolio-adjusted value" (PAV) of the First Solar PPAs using a methodology that explicitly discounts the benefit to ratepayers of the renewable attributes of delivered energy in the first and second compliance periods. This method counts the value of green attributes in delivery years when PG&E is expected to be short of its compliance goals. PG&E now prefers this PAV approach to the prior version of the LCBF method the utility used in creating the initial short list for the 2011 RPS solicitation.

PG&E's current expectation is that it will meet RPS targets in the first and second periods with contracts already in place, so one thought in applying this version of the portfolio-adjusted value metric was that incremental RPS-eligible energy delivered through at least 2017 does not provide additional value to ratepayers. Also, this method discounts the value of Resource Adequacy delivered from projects that are outside PG&E's service

territory, under the assumption that at some point in time the utility's ability to benefit from capacity attributes of generation located in SP-15 will be limited by import constraints.

[redacted]

Using the portfolio-adjusted value metric, the three First Solar PPAs rank [redacted]

[redacted]

[redacted]

[redacted]

Arroyo independently estimated the value of the three PPAs. The estimates, which use the most recent CAISO study estimates of reliability and delivery network upgrade costs, place the Blackwell Solar and Lost Hills Solar PPAs [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

On the basis of these comparisons, Arroyo's opinion is that the Cuyama Solar contract ranks high in net value compared to relevant competing alternatives, while the Blackwell Solar and Lost Hills Solar projects would rank moderate to high depending on what the actual cost of delivery network upgrades turn out to be. There are a variety of uncertainties about factors that directly affect the value of this contract to ratepayers, some of which will be resolved soon [redacted] and others that will be uncertain until [redacted]. PG&E has endeavored to shield ratepayers from a range of these risks in the contracts' design.

PORTFOLIO FIT

The initial energy delivery date for the three First Solar projects is the start of 2019, within the third RPS compliance period in which PG&E currently anticipates a net short position; thus, the contract is expected to contribute to PG&E's efforts to achieve RPS compliance. In that sense the contract fits well into the utility's portfolio needs.

As a solar photovoltaic generator, the anticipated generation profiles for the projects are highest [redacted], and highest [redacted] This tends to correlate, though not exactly, with the seasonal and daily pattern of PG&E customers' demand. It also tends to correlate, though not exactly, with periods of highest hourly energy price, historically.

As as-available solar photovoltaic generators, the projects' power is not dispatchable and therefore does not offer maximum flexibility and discretionary control to PG&E's portfolio. [redacted] However, the projects' generation will have a considerable degree of day-ahead predictability, as potential insolation is generally predicted by time of day and seasonality, and as the photovoltaic technology, with an array of several individual modules, is potentially less vulnerable to major forced outages than some other technologies. The greatest source of uncertainty in day-ahead predictability will likely be cloud cover or fog, driven by weather events. Such weather events are less predictable or frequent in the western Central Valley and the Cuyama Valley than in far-inland desert regions.

Based on the timing of its contribution to PG&E's RPS compliance needs, the correlation of the seasonality and time-of-day of the projects' generation with PG&E customer needs and market prices, and on the fair day-ahead predictability of its production (but taking into account its lack of dispatchability), Arroyo would rank the PPAs as moderate for portfolio fit. This is consistent with how PG&E ranked solar photovoltaic projects with on-line dates in the third compliance period when scoring Offers during initial shortlisting.

PROJECT VIABILITY

In Arroyo's opinion, the project viability of the three First Solar photovoltaic facilities is moderate.

Project development experience. While First Solar has been involved in a number of solar PV projects, it is sometimes difficult to identify whether the company's role has been the primary developer. For example, on its public website it claims responsibility for the Copper Mountain Solar 1 project in Boulder City, Nevada, but a more detailed look shows that First Solar acknowledges it role as EPC contractor, with Sempra Generation as developer and owner.

OptiSolar, Inc. developed a 20-MW solar PV project in Sarnia, Ontario; the project development business of OptiSolar was acquired in early 2009 by First Solar while the facility was under construction. First Solar then sold the project to Enbridge, Inc., the Canadian natural gas pipeline company, in later 2009. Enbridge subsequently expanded the project to 80 MW capacity in 2010. Arroyo finds it difficult to credit First Solar with lead responsibility as developer of the full 80 MW project as opposed to the original 20 MW, though First Solar engineered and constructed the facility.

OptiSolar developed the 550-MW Desert Sunlight project planned for eastern Riverside County; its offers had been shortlisted by PG&E and Edison in their 2008 RPS solicitations. First Solar acquired OptiSolar's development pipeline during negotiations for PPAs. First Solar subsequently executed PPAs, secured a federal loan guarantee for the facility, and then sold the project to a subsidiary of General Electric Co. and a subsidiary of NextEra Energy. OptiSolar also developed the Topaz Solar Farms project in the Carrizo Plain, a 550-MW project that First Solar sold to MidAmerican Energy. First Solar announced that the first photovoltaic panel at Topaz Solar Farms was installed in May 2012.

NextLight Renewable Power, LLC developed the 290-MW Agua Caliente Solar project that is currently under construction in Yuma County, Arizona, and under contract with PG&E. NextLight was acquired by First Solar in mid 2010 after PG&E executed the Agua Caliente PPA but before the project was financed. First Solar subsequently sold the project to NRG Energy, contingent on successfully obtaining federal loan guarantees, which occurred in mid-2011. NRG subsequently sold 49% of the project to MidAmerican Energy. Agua Caliente Solar is reported in the press to have energized more than 200 MW of its capacity as of July 2012.

NextLight also developed the planned 230-MW Antelope Valley Solar Ranch 1 project in northern Los Angeles County, and secured a PPA for that facility's output with PG&E in 2009. NextLight succeeded in obtaining a federal loan guarantee for the project and then immediately sold it to a subsidiary of Exelon Corp. Press reports indicate that federal loan disbursements did not begin until April 2012 due to permitting issues. The project is under construction but Arroyo does not have information about how many if any megawatts are energized.

NextLight also developed the 50-MW Silver State North Solar project near Primm, Nevada, and secured a PPA with NV Energy (at a contract price reported to be $132/MWh

with 1% p.a. escalation) in early 2010 before being acquired by First Solar. First Solar sold this project to Enbridge in March 2012. The facility was energized in May 2012.

Based on this record, Arroyo believes that First Solar or its acquisitions have developed at least two solar PV projects that are larger than the proposed Blackwell Solar, Cuyama Solar, and Lost Hills Solar facilities, because the now-operating 50-MW Silver State North was developed by First Solar to the point of securing a PPA before being sold, and is now operational, and because the Agua Caliente Solar project was developed, contracted, and financed before being sold and is now generating more than 200 MW.

Ownership/O&M experience. As stated in its 2012 Form 10-K, First Solar's business with respect to utility-scale projects is to "design, construct, and sell photovoltaic (PV) solar power systems", not to continue to own them. However, First Solar also "may provide ongoing O&M services to the system owner under long-term service agreements." Specifically, press reports indicate that First Solar is providing O&M services to Enbridge's Silver State North project under a long-term contract. Similarly, press reports indicate that First Solar will operate and maintain the Agua Caliente Solar project.

While First Solar generally has not owned solar PV projects it developed and built, it did own the 5-MW Tilbury solar project in Ontario for a few months after completion of construction in late 2010 before selling it to Enbridge in 2011.

Technical feasibility. First Solar indicated in its Offers that the three projects will all use [redacted] technology is well-commercialized and in use in several utility-scale projects now including the larger Silver State North and Agua Caliente Solar facilities. [redacted]

Resource quality. [redacted]

Manufacturing supply chain. First Solar reports that it produced almost 2 GW of solar modules in 2011. It has manufacturing capacity in Ohio, Germany, and Malaysia. There appear to be no constraints on the vertically-integrated company's ability to supply panels for the three projects by the end of 2018.

Site control. [redacted]

[redacted]

Permitting. First Solar applied for a conditional use permit from Kern County for the Lost Hills Solar project (a single project at that time) in July 2009. Initial CEQA studies were completed and the application underwent public review for a mitigated negative declaration in March and April 2010. Kern County issued the permit in November 2010.

The environmental impact report for the Lost Hills Solar/Blackwell Solar project indicated that several issues have significant and unavoidable impacts that cannot be mitigated. These include aesthetic impacts of degrading the visual impact of the site, conversion of prime farmland with a Williamson Act contract to non-agricultural use, and cumulative air quality impacts and cumulative impacts to biological resources. No special-status plant or animal species were found at this long-cultivated, disturbed site but mitigation measures were ordered to manage potential impacts.

First Solar applied for a conditional use permit from Santa Barbara County for the Cuyama Solar project in March 2010. CEQA studies were conducted in 2010. The County staff found various issues of incompleteness in the application package and the application had to be revised by First Solar; eventually the County found the application to be complete in October 2011.

An environmental assessment for the project was completed in November 2011; it reports potentially significant environmental impacts such as converting prime farmland (including about half the parcel which is under a Williamson Act contract) to non-agricultural use, using the site in a manner incompatible with the existing land use, and short-term noise exposure exceeding County thresholds. Few special-status species (horned larks, northern harriers, golden eagles) were observed to be present at or over the project site, which is intensively tilled and used for carrot production.

In April 2012 the Santa Barbara County board of supervisors voted to authorize a consultant study to prepare an environmental impact study for the Cuyama Solar project. A county official was quoted in the press surmising that the use permit approval process could be completed in 2013.[13]

[13] Santa Maria Times, "40-Megawatt Solar Facility Proposed for Cuyama Valley", April 12, 2011.

Project financing status. [redacted]

First Solar secured a federal loan guarantee for the Agua Caliente Solar project prior to selling it to NRG Energy (the sale was contingent on the loan guarantee).

Interconnection progress. [redacted]

Transmission requirements. [redacted]

[redacted]

Reasonableness of COD. For Cuyama Solar, Arroyo does not anticipate that the remaining hurdles of [redacted] would likely be impediments to achieving the initial energy delivery date in 2019. [redacted] The permitting process with Santa Barbara County may take some period of time, but superficially there appears to be only modest local community opposition[14] and the environmental assessment did not identify many issues of potential significance.

For Blackwell Solar and Lost Hills Solar, there is currently uncertainty about [redacted]

[redacted] On that basis Arroyo's opinion is that the projects can reasonably achieve the planned schedule for deliveries, given [redacted].

Summary. The Cuyama Solar project has made considerable progress towards completion. The developer has established site control for the facility and gen-tie line. The process of permitting the project with Santa Barbara is well-advanced though not certain. First Solar has developed and built at least two solar PV projects with larger capacity than any of the three projects addressed here. [redacted]

[14] A spokesman for "Friends of Cuyama Valley" was cited in a news report objecting to the project.

[redacted]

In contrast, the Blackwell Solar and Lost Hills Solar projects have also made good progress on site control, and have obtained their use permits from Kern County, but [redacted]

Arroyo has scored the Cuyama Solar project [redacted] using the Energy Division's Project Viability Calculator; this is a material improvement from the score [redacted] the IE assigned during the shortlisting process, based on progress that the project has made since mid-2011 and the experience in financing and completing large PV projects that First Solar has made. Arroyo scores the Blackwell Solar and Lost Hills Solar projects [redacted], compared [redacted] during shortlisting. Based on this, all three projects rank in the second highest quartile among proposals submitted to PG&E in the 2011 RPS RFO in June 2011. [15]

On that basis, Arroyo ranks the three First Solar projects as moderate in project viability when compared to competing alternatives.

RPS GOALS

RPS-eligible production from the three First Solar projects will likely contribute to PG&E's RPS compliance goals in the third compliance period of 2017-2020, when the utility expects to have a net short position, and beyond.

Entering into this transaction would not advance PG&E and the state towards the 20% biomass goal set by Executive Order S-06-06.

C. DISCUSSION OF MERIT FOR APPROVAL

In Arroyo's opinion, PG&E's contracts with Blackwell Solar, Cuyama Solar, and Lost Hills Solar all merit CPUC approval.

Arroyo's independent but simple valuation ranks the Cuyama Solar contract as high in net value compared to other Offers submitted to PG&E in the 2011 RPS RFO. [redacted] Arroyo's valuation ranks Blackwell Solar and Lost Hills Solar as moderate compared to competing Offers from the solicitation.

PG&E's LCBF analyses rank all three contracts as high in value compared to a peer group of competing alternatives, whether using the net market value metric, the portfolio-adjusted value metric, or an alternative portfolio-adjusted metric.

The contract prices rank as low compared to competing alternatives available to PG&E.

[15] There is no way to assess the extent to which other developers have also advanced their projects since June 2011, other than those projects on PG&E's short list.

Arroyo ranks all three projects as moderate in viability, given progress that First Solar has made in developing, financing, building, and bringing solar PV projects into operation, and specific progress made in permitting and interconnection studies. [redacted]

Arroyo regards these contracts as ranking as moderate in portfolio fit. The projects currently appear unlikely to contribute to overprocurement of RPS-eligible energy by PG&E. The project's output levels are expected to correlate well with PG&E's seasonal needs and to a lesser degree with time-of-day needs.

Arroyo believes that PG&E's project-specific negotiations with First Solar for the three contracts were conducted in a manner that was fair to ratepayers. PG&E treated Blackwell Solar and Lost Hills Solar quite differently [redacted]; Arroyo's opinion is that this disparity in contract terms and in economic consequences for projects in that (admittedly not very likely) scenario is sufficient that the negotiations appeared to be less than fully fair. However, there are circumstances that mitigate Arroyo's concern about disparities in how competitors were treated; Arroyo concludes that this issue falls short of providing a sufficient basis for rejecting the PPAs.

Based on its high valuation, low contract price, moderate viability, and moderate portfolio fit, Arroyo's opinion is that the Cuyama Solar contract merits CPUC approval. The Blackwell Solar and Lost Hills Solar contracts rank as moderate to high in value, low in contract price, moderate in project viability and portfolio fit; Arroyo's opinion is that these too merit CPUC approval despite a concern about fairness to competitors.

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Tecogen, Inc.
Tiger Natural Gas, Inc.
TransCanada
Turlock Irrigation District
United Cogen
Utility Cost Management
Utility Specialists
Verizon
Wellhead Electric Company
Western Manufactured Housing Communities Association (WMA)
eMeter Corporation