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

August 22, 2013

Advice Letter 4193-E

Brian K. Cherry
Vice President, Regulation and Rates
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Subject: Power Purchase Agreements for the Procurement of Eligible Renewable Energy Resources between ABEC Bidart-Stockdale, LLC and ABEC Bidart-Old River, LLC, and PG&E Company

Dear Mr. Cherry:

Advice Letter 4193-E is effective June 27, 2013 per Resolution E-4596.

Sincerely,

Edward Randolph

Edward F. Randolph, Director
Energy Division

Pacific Gas and Electric Company

Brian K. Cherry
Vice President
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February 14, 2013

Advice 4193-E
(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

Subject: Power Purchase Agreements for the Procurement of Eligible Renewable Energy Resources between ABEC Bidart-Stockdale, LLC and ABEC Bidart-Old River, 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 two new Power Purchase Agreements ("PPAs"), between PG&E and ABEC Bidart-Stockdale, LLC ("Stockdale") and ABEC Bidart-Old River, LLC ("Old River").

The PPAs are for Renewables Portfolio Standard ("RPS")-eligible energy from Stockdale and Old River (each a "Project" and jointly "the Projects"). The Projects will use dairy-waste biomethane combustion to generate electricity and are each located in Bakersfield, CA. The Stockdale PPA has a capacity of 0.6 MW and a term of 10 years. The Old River PPA has a capacity of 1.84 MW and a term of 15 years.

PG&E believes the Projects represent a pilot opportunity to support the accumulation of financing and operational experience in the dairy-waste bioenergy sector, which aligns the Projects with the state's goal of increasing bioenergy generation in California, as directed by Executive Order S-06-06.

PG&E requests that the Commission issue a resolution no later than July 11, 2013, approving the PPAs and containing the findings as set forth in Section V below.

B. Subject of the advice letter

1. Project name

The Project names are Stockdale and Old River. Both Projects are located in Bakersfield, California.

2. Technology (including level of maturity)

The Projects will use dairy-waste biomethane combustion to generate electricity, which is a commercially-proven technology but not yet at significant scale in California. The Projects will both use double-lined lagoon digesters. In addition to the lagoon digester, Old River also plans to use above-ground stir tanks, making the Project a hybrid digester. In the anaerobic digesters, methanogenic bacteria break down the dairy waste and create biogas, which primarily consists of methane. The biogas is then cleaned and run through an internal combustion engine.

3. General Location and Interconnection Point

The Projects will be located in Bakersfield, California and expect to interconnect directly into PG&E's distribution system and then subsequently into the California Independent System Operator ("CAISO") controlled-grid, a California balancing authority. Stockdale has signed an interconnection agreement to interconnect to PG&E's 12 kV Tupman 1104 circuit. Detailed information regarding Old River's point of interconnection is provided in Confidential Appendices A1 and D1.

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 owner of the Stockdale Project is ABEC Bidart-Stockdale, LLC. The owner of the Old River Project is ABEC Bidart-Old River, LLC. The developer of both Projects is California BioEnergy, LLC ("CalBio").

ABEC Bidart-Stockdale, LLC is 1% owned by American Biogas Electric Company, LLC ("ABEC") and 99% owned by Bidart Dairy II, LLC. ABEC Bidart-Old River LLC is currently 100% owned by ABEC. ABEC is a subsidiary of CalBio, the Project developer, and CalBio is the sole member of ABEC.

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

The Projects are new dairy-waste biomethane combustion plants that will be built on the existing Bidart Dairy II and Bidart Dairy III sites in Bakersfield, California for Old River and Stockdale, respectively. The Stockdale Project is constructed but not yet commercially operational. Old River is earlier in the development process.

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

The PPAs resulted from bilateral negotiations. PG&E has included Confidential Appendices A through G and Public Appendix C-2, which demonstrate the reasonableness of the PPAs.

As discussed below, PG&E requests confidential treatment for the information contained in Appendices A through G. PG&E requests that the Commission issue a resolution no later than July 11 2013, approving the PPAs in their entireties, all payments to be made by PG&E under the PPAs, and containing the findings required by the definition of CPUC Approval adopted by Decision ("D.") 07-11-025 and D.08-04-009.[1]

[1] As provided by D.07-11-025 and D.08-04-009, the Commission must approve the PPAs and payments to be made thereunder, and find that the procurement will count toward PG&E's RPS procurement obligations.

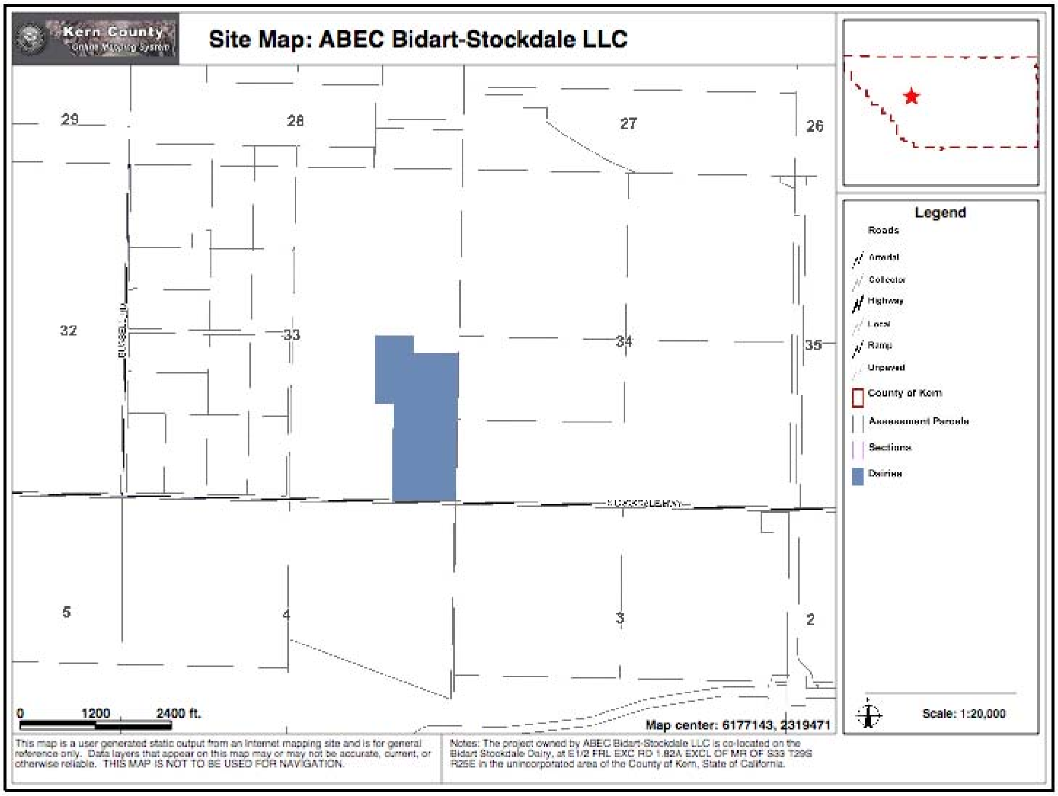
C. General Project(s) Description

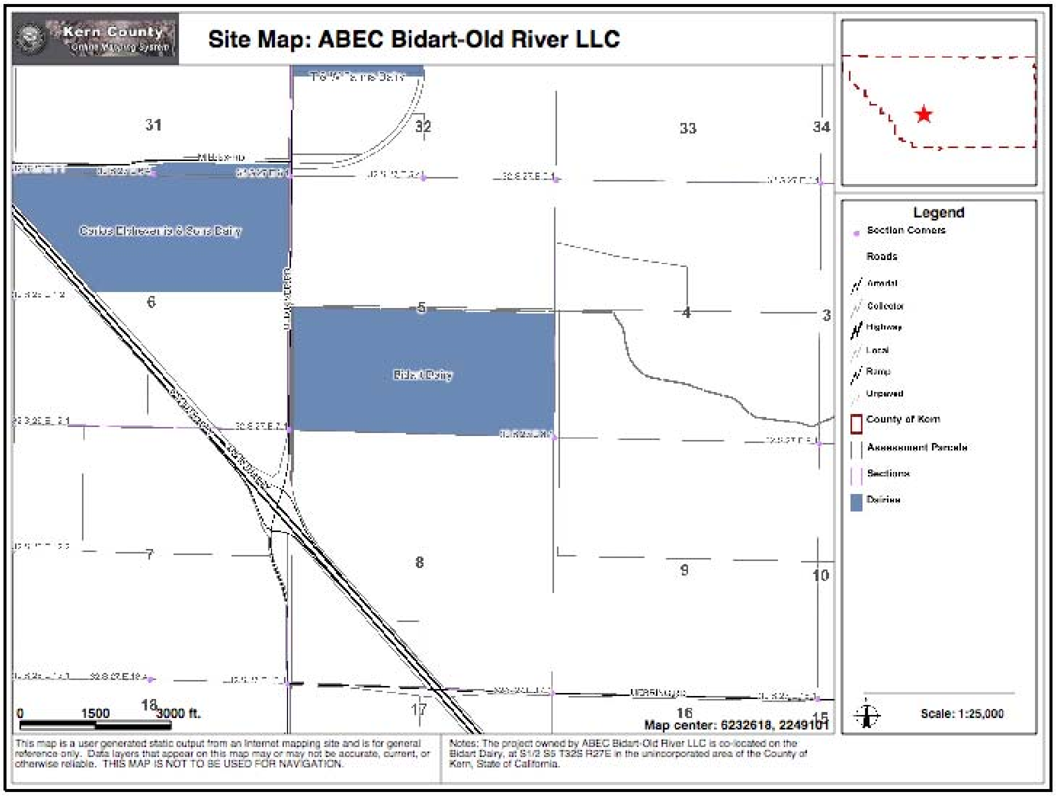
Project Names	Stockdale Old River
Technology	Dairy-waste biomethane combustion
Capacity (MW)	Stockdale 0.6 MW Old River 1.84 MW
Capacity Factor	28% Stockdale (projected) 73% Old River (projected)
Expected Generation (GWh/Year)	1.40 GWh/year average over the Stockdale contract term 12.95 GWh/year average over the Old River contract term
Initial Commercial Operational Date	Stockdale: April 1, 2013 Old River: Phase 1: February 28, 2014; Phase 2: June 15, 2014
Date contract Delivery Term begins[2]	Stockdale April 1, 2013 Old River February 28, 2014
Delivery Term (Years)	Stockdale 10 years Old River 15 years
Vintage (New / Existing / Repower)	New
Location (city and state)	Bakersfield, CA
Control Area (e.g., CAISO, BPA)	CAISO
Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI)[3]	Tehachapi; however, these are distribution-level Projects
Type of cooling, if applicable	N/A

[2] Projects may deliver energy before COD.
[3] Information about RETI is available at: http://www.energy.ca.gov/reti/

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 used for dairy farming. The developer has asserted that dairies in Kern County do not require a land use permit to construct a digester for electricity generation on the property.[4]

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 dairy-waste biogas fueled facilities that are expected to interconnect directly into PG&E's distribution system in the CAISO-controlled transmission system, a California balancing authority. Because the Projects are RPS-eligible generators that expect to have their first points of interconnection to distribution facilities used to serve end-users within the boundaries of a California balancing authority, the RPS-eligible procurement from the Projects satisfy the criteria for the portfolio content category specified in Public Utilities Code Section 399.16(b)(1)(A) (hereinafter "Portfolio Content Category One").

[4] *See* Kern County Zoning Ordinance, Chapter 19.12 "Exclusive Agriculture (A) District", Section 19.12.130, pg. 102-103.

2. Partial/full generation output of facility

PG&E will receive all of the generation output from the Projects, starting April 1, 2013 and February 28, 2014 for Stockdale and Old River, respectively. The PPAs are for the purchase of as-available products ("Products"). While the Projects' Products are classified as as-available, the Projects will provide day-ahead schedules to the Scheduling Coordinator.

3. Any additional products, e.g. capacity

The Products include the energy, capacity, and all ancillary products, services or attributes including, renewable attributes, Renewable Energy Credits, and Green Attributes, including any emissions products necessary to ensure that the Projects qualify as Zero Net Emissions, if such a requirement is required in the future.

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

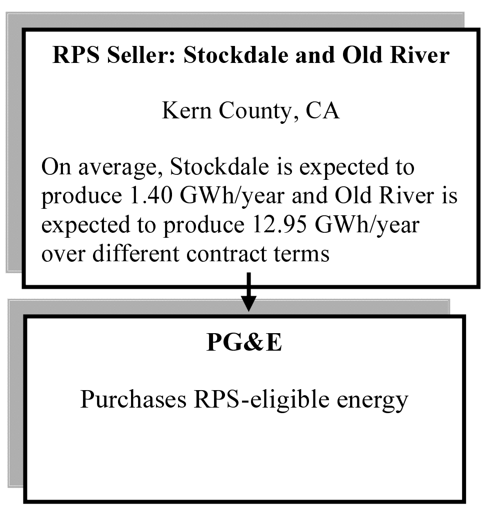
Stockdale's generation delivery point is PG&E's Tupman 115 kV bus. Old River's energy will be delivered to the PNode designated by the CAISO. Transmission details are further described in Confidential Appendices D1 and D2.

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

There is no firming or shaping associated with the PPAs. PG&E or its agent will be the Scheduling Coordinator for the Projects.

6. Diagram and explanation of delivery structure

Figure 1: Delivery Structure of the PPA



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 Projects are consistent with these goals because they are new facilities located in the CAISO control area that will generate clean energy and are in compliance with Assembly Bill ("AB") 32, which set the 2020 greenhouse gas emissions reduction goal into law. The Projects will also contribute to maintaining a diversified and balanced energy generation portfolio. Additionally, the Projects will dispose of dairy-waste in an environmentally sensitive manner, which reduces the methane emitted into the atmosphere from the dairies and improves their overall environmental footprint.

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

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 bundled retail sales in 2021 and all years thereafter.

Consistent with the Energy Division Staff methodology for calculating the renewable net short ("RNS")[5], PG&E provides a RNS calculation in Table 1. PG&E also provides an alternative RNS calculation (the "Alternate RNS") in Table 2. The RNS calculates the volumes that PG&E projects it will need for RPS compliance based on direction provided in the August 2, 2012 ALJ Ruling using an "expected case" scenario. The Alternate RNS provides the same calculations as the RNS but substitutes PG&E's internal long-term bundled retail sales forecast for the assumptions provided in the August 2, 2012 ALJ Ruling.

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[5] *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*, filed August 2, 2012 in R.11-05-005, Attachments A1 and A2 at 5.

Table 1: Renewable Net Short Calculation as of December 2012

Net Short Calculation Using PG&E Bundled Retail Sales Forecast In Near Term (2012 - 2016) and LTPP Methodology (2017 - 2030)**

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	14,576	18,548	21,930	24,435	24,752	25,075	23,444	22,715	22,088	21,640	19,313	18,987	18,722	18,596	17,981	17,635	17,531	16,948	16,887
4	Annual RPS Position (%)	19.3%	[redacted]				32.0%	32.7%	30.6%	29.6%	28.7%	28.1%	25.0%	24.5%	24.1%	23.9%	23.1%	22.6%	22.4%	21.6%	21.5%
5	Gross Surplus/(Deficit) compared to Annual Targets* (GWh)	(500)					5,413	4,373	1,229	(1,059)	(3,309)	(3,807)	(6,185)	(6,562)	(6,877)	(7,055)	(7,721)	(8,119)	(8,274)	(8,909)	(9,022)
6	Volumes (Banked) or Withdrawn from Bank	0					(5,413)	(4,373)	(1,229)	1,059	3,309	3,807	6,185	6,562	4,527	0	0	0	0	0	0
7	Net Surplus/(Deficit) (GWh)	(500)					0	0	0	0	0	0	0	0	(2,351)	(7,055)	(7,721)	(8,119)	(8,274)	(8,909)	(9,022)
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%	33.0%	30.0%	23.9%	23.1%	22.6%	22.4%	21.6%	21.5%
9	Cumulative Banked Volumes (GWh)	0				14,434	19,847	24,220	25,448	24,389	21,080	17,273	11,088	4,527	0	0	0	0	0	0	0
10	Forecast Failure Rate (%) for New Projects not yet online	0.0%	0.0%	0.0%	1.0%	4.0%	13.2%	20.4%	20.0%	20.1%	19.8%	19.9%	19.9%	20.0%	20.1%	20.1%	20.2%	20.2%	20.4%	20.4%	20.4%
11	Forecast Failure Rate (%) for Existing Generation	0.0%	1.8%	2.3%	1.6%	0.7%	0.6%	0.6%	0.5%	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)

Line #		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)	47,596			71,117			93,321				21,640	19,313	18,987	18,722	18,596	17,981	17,635	17,531	16,948	16,887
15	RPS Position (%)	[redacted]						30.4%				28.1%	25.0%	24.5%	24.1%	23.9%	23.1%	22.6%	22.4%	21.6%	21.5%
16	Gross Surplus/(Deficit) (GWh)							1,234				(3,807)	(6,185)	(6,562)	(6,877)	(7,055)	(7,721)	(8,119)	(8,274)	(8,909)	(9,022)
17	Volumes (Banked) or Withdrawn from Bank (GWh)							(1,234)				3,807	6,185	6,562	4,527	0	0	0	0	0	0
18	Net Surplus/(Deficit) (GWh)							0				0	0	0	(2,351)	(7,055)	(7,721)	(8,119)	(8,274)	(8,909)	(9,022)
19	Net RPS Positions (%)							30.0%				33.0%	33.0%	33.0%	30.0%	23.9%	23.1%	22.6%	22.4%	21.6%	21.5%
20	Cumulative Banked Volumes (GWh)				19,847			21,080				17,273	11,088	4,527	0	0	0	0	0	0	0
21	Forecast Failure Rate (%) for New Projects not yet online	0.0%			6.1%			20.1%				19.9%	19.9%	20.0%	20.1%	20.1%	20.2%	20.2%	20.4%	20.4%	20.4%
22	Forecast Failure Rate (%) for Existing Generation	1.4%			1.0%			0.4%				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)	(51,452)																			

Assumed annual targets are: 2011-2013 (20% annually), 2014 (21.7%), 2015 (23.3%), 2016 (25%), 2017 (27%), 2018 (29%), 2019 (31%), and 2020 (33%). These targets are illustrative only and not enforceable.

*** The 2010 LTPP sales forecast extends only from 2017 through 2020. For purposes of extending this forecast past 2020, PG&E applied a 0.2% annual growth rate to the LTPP's "Adjusted Energy Demand/Consumption" forecast in years after 2020. (This 0.2% growth rate is equal to the average growth rate seen in the LTPP forecast over the 2018-2020 period.) The "Energy Demand/Consumption" amount was then adjusted for line losses to determine bundled retail sales.*

Table 2: Alternate Renewable Net Short Calculation as of December 2012

Net Short Calculation Using PG&E Bundled Retail Sales Forecast

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	14,576	18,548	21,930	24,435	24,752	25,075	23,444	22,715	22,088	21,640	19,313	18,987	18,722	18,596	17,981	17,635	17,531	16,948	16,887
4	Annual RPS Position (%)	19.3%					32.0%	32.2%	30.0%	28.9%	27.8%	27.0%	23.9%	23.3%	22.7%	22.4%	21.4%	20.9%	20.5%	19.8%	19.5%
5	Gross Surplus/(Deficit) compared to Annual Targets* (GWh)	(500)					5,413	4,076	752	(1,684)	(4,122)	(4,781)	(7,356)	(7,924)	(8,447)	(8,808)	(9,684)	(10,270)	(10,627)	(11,339)	(11,621)
6	Volumes (Banked) or Withdrawn from Bank	0					(5,413)	(4,076)	(752)	1,684	4,122	4,781	7,356	6,732	0	0	0	0	0	0	0
7	Net Surplus/(Deficit) (GWh)	(500)					0	0	0	0	0	0	0	(1,193)	(8,447)	(8,808)	(9,684)	(10,270)	(10,627)	(11,339)	(11,621)
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%	31.5%	22.7%	22.4%	21.4%	20.9%	20.5%	19.8%	19.5%
9	Cumulative Banked Volumes (GWh)	0				14,434	19,847	23,922	24,674	22,991	18,869	14,088	6,732	0	0	0	0	0	0	0	0
10	Forecast Failure Rate (%) for New Projects not yet online	0.0%	0.0%	0.0%	1.0%	4.0%	13.2%	20.4%	20.0%	20.1%	19.8%	19.9%	19.9%	20.0%	20.1%	20.1%	20.2%	20.2%	20.4%	20.4%	20.4%
11	Forecast Failure Rate (%) for Existing Generation	0.0%	1.8%	2.3%	1.6%	0.7%	0.6%	0.6%	0.5%	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)

Line #		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)		47,596			71,117			93,321			21,640	19,313	18,987	18,722	18,596	17,981	17,635	17,531	16,948	16,887
15	RPS Position (%)								29.7%			27.0%	23.9%	23.3%	22.7%	22.4%	21.4%	20.9%	20.5%	19.8%	19.5%
16	Gross Surplus/(Deficit) (GWh)								(978)			(4,781)	(7,356)	(7,924)	(8,447)	(8,808)	(9,684)	(10,270)	(10,627)	(11,339)	(11,621)
17	Volumes (Banked) or Withdrawn from Bank (GWh)								978			4,781	7,356	6,732	0	0	0	0	0	0	0
18	Net Surplus/(Deficit) (GWh)								0			0	0	(1,193)	(8,447)	(8,808)	(9,684)	(10,270)	(10,627)	(11,339)	(11,621)
19	Net RPS Positions (%)								30.0%			33.0%	33.0%	31.5%	22.7%	22.4%	21.4%	20.9%	20.5%	19.8%	19.5%
20	Cumulative Banked Volumes (GWh)					19,847			18,869			14,088	6,732	0	0	0	0	0	0	0	0
21	Forecast Failure Rate (%) for New Projects not yet online		0.0%			6.1%			20.1%			19.9%	19.9%	20.0%	20.1%	20.1%	20.2%	20.2%	20.4%	20.4%	20.4%
22	Forecast Failure Rate (%) for Existing Generation		1.4%			1.0%			0.4%			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)	(71,988)																			

** Assumed annual targets are: 2011-2013 (20% annually), 2014 (21.7%), 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 both scenarios, 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 (2011 – 2013). Additionally, PG&E expects to significantly exceed the RPS procurement requirement in the second compliance period (2014 – 2016).

While the RNS calculation in Table 1 shows a slight surplus in the third compliance period (1,234 GWh), PG&E estimates (using the Alternate RNS calculation in Table 2) that it will need 978 GWh of cumulative RPS-eligible volumes, prior to applying any excess procurement, to satisfy third compliance period targets. Both scenarios show that if RPS-eligible projects in PG&E's portfolio perform as expected, PG&E has fairly significant incremental need beginning in 2020 (prior to applying any excess procurement from earlier compliance periods) and beyond in order to maintain a 33% RPS level. 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 from the Projects to PG&E are expected to commence on April 1, 2013 and February 28, 2014 for Stockdale and Old River, respectively. While PG&E does not have a specific need for RPS-eligible deliveries from these Projects prior to the third compliance period, the Projects' deliveries from April 1, 2013 and February 28, 2014, respectively, to December 31, 2016 can be "banked" and applied to subsequent compliance periods. PG&E presently intends to use banked excess procurement in future compliance periods to smooth short-term delivery shortfalls caused by unanticipated project failures or delays or under performance of existing projects leading up to 2020, and all years thereafter. The Projects' deliveries after 2016 will directly contribute to meeting PG&E's third compliance period needs and beyond.

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.

Confidential Attachments:

Appendix A1 – Consistency with Commission Decisions and Rules and Project Development Status – ABEC Bidart – Old River LLC

Appendix A2 - Consistency with Commission Decisions and Rules and Project Development Status – ABEC Bidart – Stockdale LLC

Appendix B – 2011 Solicitation Overview

Appendix C1 – Independent Evaluator Report (Confidential)

Appendix D1 – Contract Summary: ABEC Bidart – Old River LLC

Appendix D2 – Contract Summary: ABEC Bidart – Stockdale LLC

Appendix E1 – Comparison of the PPA to PG&E's 2011 Pro Forma Power Purchase Agreement - ABEC Bidart – Old River LLC

Appendix E2 - Comparison of the PPA to PG&E's 2011 Pro Forma Power Purchase Agreement - ABEC Bidart – Stockdale LLC

Appendix F1 – ABEC Bidart – Old River LLC Power Purchase Agreement

Appendix F2 – ABEC Bidart – Stockdale LLC 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. PG&E's 2011 RPS Plan was in effect during negotiations for the Projects during 2012, and the Projects are described within the context of the 2011 RPS Plan and the 2011 RPS Solicitation.

Prior to execution of the PPAs, PG&E's 2012 renewable procurement plan ("2012 RPS Plan") was conditionally approved in D.12-11-016 on November 14, 2012. PG&E submitted a final version of the 2012 RPS Plan on November 29, 2011. PG&E also describes the Projects within the context of the 2012 RPS Plan to the extent feasible.

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

The goal of PG&E's 2011 RPS Plan was 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 goal of serving 33% of its retail sales with renewable resources by 2020.

The primary goal of PG&E's 2012 RPS Plan is to procure up to 1,000 GWh per year in long-term incremental RPS procurement as part of its 2012 RPS Solicitation. PG&E's 2012 RPS Plan goal is intended to focus on purchasing for longer-term needs, which will enhance PG&E's ability to satisfy an ongoing 33% RPS requirement post-2020.

3. Discuss how the Projects are 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, and are consistent with PG&E's 2012 RPS Plan primary goal to procure up to 1,000 GWh in long-term incremental procurement. Since the PPAs are long-term, and deliveries from the Projects 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 period or year 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 many of PG&E's preferred project characteristics set forth in the 2011 RPS Solicitation and 2012 RPS Solicitation. PG&E's 2011 and 2012 RPS Solicitation Protocols express a preference for bundled in-state resources located within PG&E's service territory. The Projects are consistent with these preferences as they are located within PG&E's service territory.

The PPAs conform to PG&E's Commission-approved 2011 RPS Plan by delivering an average of 1.40 GWh/year and 12.95 GWh/year, for Stockdale and Old River respectively, to fill a portion of PG&E's long-term RPS net short position. The transactions comply with the RPS program requirements, meet the portfolio needs outlined by the 2011 RPS Plan, and meet the project characteristics set forth in the solicitation.

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.

The PPAs resulted from bilateral negotiations between PG&E and the Project developer, CalBio. To address the issue of bilateral contracting, the Commission developed guidelines pursuant to which utilities may enter into bilateral RPS contracts. In D.03-06-071, the Commission authorized entry into bilateral RPS contracts, provided that such contracts did not require Public Goods Charge funds and were "prudent." Later, in D.06-10-019, the Commission again held that bilateral contracts were permissible provided that they were at least one month in duration, and also found that such contracts must be reasonable and submitted for Commission approval by advice letter. Also in that decision, the Commission stated that bilateral contracts were not eligible for supplemental energy payments.

Based on D.03-06-071 and D.06-10-019, the Commission set forth the following four requirements for approval of bilateral contracts in a Resolution approving a bilateral RPS contract executed by PG&E: (1) the contract is submitted for approval by advice letter; (2) the contract is longer than one month in duration; (3) the contract does not receive above-market funds ("AMF"); and (4) the contract is deemed reasonable by the Commission.[6] The Commission noted that it would be developing evaluation criteria for bilateral contracts, but that the above four requirements would apply in the interim.[7]

On June 19, 2009, the Commission issued D.09-06-050 establishing price benchmarks and contract review processes for short-term and bilateral RPS contracts. D.09-06-050 provides that bilateral contracts should be reviewed using the same standards as contracts resulting from RPS solicitations.

The PPAs satisfy the requirements listed above and the requirements of D.09-06-050. The PPAs are being submitted for approval via this Advice Letter. The PPAs are not eligible for AMFs because they resulted from bilateral negotiations. The PPAs' terms are longer than one month in duration. Finally, the PPAs are reasonable when considered against the standards used for evaluating contracts resulting from PG&E's 2011 RPS Solicitation, as PG&E explains in this Advice Letter and in the Confidential Appendices.

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

After initial discussions and due diligence, PG&E determined that these two Projects represent a pilot opportunity to support the accumulation of financing and operational experience in the dairy-waste bioenergy sector.

According to the developer, the dairy-waste bioenergy sector is in its infancy and has not benefited from the economies of scale that other RPS-eligible technologies have with larger commercial-scale deployments. Though a proven and commonly used technology at utility-scale in parts of the world, the technology has been deployed at a smaller scale in California. Because of limited California experience at this scale, banks and investors may be demanding higher returns and impose other restrictions on projects; capital expenditures are higher because of the lack of local suppliers, limited order size and limited developer knowledge; and O&M (operation and maintenance) costs are higher because of the lack of scale (i.e., maintaining one project is much more expensive than a team managing 50).[8] Therefore, the developer believes that expanded use of the technology will correct the lack of economies of scale and will ultimately result in significant price reductions in the future through shared industry knowledge and reduced cost of capital, as a result of accumulated experience by lenders and investors.

Given the characteristics of these Projects, as pilots to establish financing and utility-scale operational experience, bilateral negotiations, rather that direct competition through solicitations, were necessary to realize the benefits of the technology and to facilitate appropriate contract terms. Further detail is offered in Confidential Appendices A1 and A2.

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.

[6] Resolution E-4216 at 5.
[7] *Id.*
[8] Teru Talk, "Renewable Energy from Organic Residuals: Interview with Neil Black, President of California Bioenergy", August 25, 2012 (http://www.terutalk.com/Renewable-Energy-from-Organic-Residuals.html)

As stated above, PG&E views these Projects as a pilot opportunity to support the demonstration of lending and operational experience for dairy-waste digester technology in California. Furthermore, given their pilot nature, the Projects are not well-suited to compete in the RPS Solicitation, which primarily consists of projects with more experienced development teams, more commercially-deployed technologies, larger capacities, and as a result, lower costs of capital.

Additionally, the Projects are not able to participate in PG&E's feed in tariff (FIT) program because PG&E's existing tariff applicable to the Projects is fully subscribed. Furthermore, the expanded Section 399.20 FIT program has not yet been implemented by the Commission.

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's 2012 RPS Solicitation was issued on December 10, 2012. The deadline for PG&E to receive offers pursuant to the 2012 RPS Solicitation was February 6, 2012. Because the 2012 RPS Solicitation had not been conducted prior to execution of the PPAs, PG&E evaluates and provides a comparison of the value of the PPAs to those projects executed as part of the 2011 RPS Solicitation.

PG&E filed its 2011 RPS Shortlist Report on November 11, 2011 in Advice Letter 3938-E and a Supplement to the 2011 RPS Shortlist Report on February 8, 2012 in Advice Letter 3938-E-A. The 2011 RPS Shortlist Report has, at the date of this filing, not formally been approved by the Commission. The 2011 RPS Shortlist Report contains offers that were evaluated as part of the 2011 RPS Solicitation. The 2011 RPS Shortlist Report does not contain reference to the Projects because the Projects were negotiated bilaterally.

The RPS statute requires PG&E to procure the "least-cost best-fit" ("LCBF") eligible renewable resources.[9] The LCBF decision directs the utilities to use certain criteria in their bid ranking 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.[10] PG&E's approved process for identifying the LCBF renewable resources focuses on five 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 PPAs using the LCBF evaluation criteria from the 2011 RPS Solicitation. The general finding is that the PPAs compare unfavorably to PG&E's 2011 RPS Solicitation shortlist. However, PG&E believes that the Projects offer favorable attributes including: the pilot demonstration opportunity, as discussed above, and the technology

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[9] Pub. Util. Code § 399.14(a)(2)(B).
[10] D.04-07-029.

diversity the Projects add to PG&E's RPS portfolio. A more detailed discussion of PG&E's evaluation of the PPAs is provided in Confidential Appendices A1 and A2.

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 price in the PPAs. PG&E's analysis of the market value is confidential and addressed in Confidential Appendices A1 and A2.

2. Portfolio Fit

Portfolio fit considers how well an offer's firmness and energy delivery patterns match PG&E's portfolio needs. PG&E evaluated the bilateral offers for the Projects' consistency with portfolio fit as described in the 2011 RPS Plan and Protocol.

In a subsequent supplemental filing dated February 8, 2012 in Advice Letter 3938-E-A, PG&E submitted an updated Shortlist Report that enhances the valuation methodology to calculate a portfolio-adjusted value ("PAV").[11] 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, the Projects did not compare favorably to the 2011 RPS shortlisted offers.[12] Additional information about the PAV methodology is provided in PG&E's 2012 RPS Plan, Confidential Appendices A1 and A2, and Advice Letter 3938-E-A.

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 CPUC developed Project Viability Calculator ("PVC"). The PVC is a tool for IOUs to evaluate the viability of a renewable energy project, relative to all other projects that bid into the California utilities' 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 Appendices A1 and A2.

4. RPS Goals

PG&E assesses an 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

[11] PG&E subsequently filed substitute sheets for Advice Letter 3938 E-A on February 15, 2012.
[12] In D.12-11-016, the Commission accepted the use of PG&E's proposed PAV methodology for PG&E's 2012 RPS Solicitation.

declarations that increase California's reliance on renewable energy, consistency with the CPUC's Water Action Plan, Executive Order S-06-06 that established a goal that the state would meet 20% of its renewable energy needs with electricity produced from biomass, and supplier diversity.

When evaluating these Projects, PG&E assessed their alignment with the state's goal of increasing bioenergy generation in California, as directed by Executive Order S-06-06. Additionally, the Projects support the goals of the California Energy Commission's 2012 Bioenergy Action Plan, including: the development of diverse bioenergy technologies that increase local electricity generation and the improvement of air and water quality in the state. These legislative and state agency directions were considered when comparing this technology to other available RPS-eligible generation options.

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 Appendices A1 and A2.

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 PPAs conform exactly to the "non-modifiable" terms set forth in Attachment A of D.08-04-009, as modified by 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:

ABEC Bidart-Old River, LLC		
Non-Modifiable Term	**PPA Section No.**	**PPA Page No.**
STC 1: CPUC Approval	**1.50**	**5**
STC 2: RECs and Green Attributes		
• **Definition of Green Attributes**	**1.123**	**12 – 13**
• **Conveyance of Green Attributes**	**3.2**	**32**
STC 6: Eligibility	**10.2(b)**	**58 – 59**
STC 17: Applicable Law	**10.12**	**66**
STC REC-1: Transfer of renewable energy credits	**10.2(b)**	**59**
STC REC-2: Tracking of RECs in WREGIS	**3.1(k)(viii)**	**29**

ABEC Bidart-Stockdale, LLC		
Non-Modifiable Term	**PPA Section No.**	**PPA Page No.**
STC 1: CPUC Approval	**1.48**	**5**
STC 2: RECs and Green Attributes		
• **Definition of Green Attributes**	**1.120**	**12 – 13**
• **Conveyance of Green Attributes**	**3.2**	**31**
STC 6: Eligibility	**10.2(b)**	**56**
STC 17: Applicable Law	**10.12**	**64**
STC REC-1: Transfer of renewable energy credits	**10.2(b)**	**57**
STC REC-2: Tracking of RECs in WREGIS	**3.1(k)(viii)**	**29**

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.

A redline comparison of the PPAs with PG&E's 2011 Pro Forma PPA is provided in Confidential Appendices E1 and E2.

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

1. Describe the contract's claimed portfolio content category

As described in Section I.E. and in further detail below, the PPAs satisfy the upfront showing required for Portfolio Content Category One.

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

SB 2 1X, which is codified at Public Utilities Code 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.

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 electricity distribution system used to serve end-user customers within the metered boundaries of California balancing authority ("CBA") area.[13]

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 expect to have their first point of interconnection with the electricity distribution system used to serve end-user customers within the metered boundaries of a CBA area. Therefore, the RPS-eligible procurement from the Projects satisfies the criteria for Portfolio Category One adopted in D.11-12-052.

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

There is no known risk that the procurement would not be classified as Portfolio Content Category One.

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

a. Contract is classified as claimed

b. Contract is not classified as claimed

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[13] *See* D.11-12-052 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.")

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. If the PPAs are not classified as Portfolio Content Category One, the value to PG&E and its customers could under certain limited scenarios be lower. 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 any RECs from the Projects exceeding the portfolio balance requirements to be deducted from any RPS 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 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.

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 PPAs under the "Fast Track" process.

H. 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 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. D.07-01-039 determined that certain renewable resources and technologies are pre-approved as EPS-compliant.

> "Based on the record in this proceeding, it is reasonable to make an upfront determination that the following renewable resources and technologies are EPS-compliant:
>
> (a) Solar Thermal Electric (with up to 25% gas heat input)
>
> (b) Wind
>
> (c) Geothermal, with or without reinjection
>
> (d) Generating facilities (e.g., agricultural and wood waste, landfill gas) using biomass that would otherwise be disposed of utilizing open burning, forest accumulation, landfill (uncontrolled, gas collection with flare, gas collection with engine), spreading or composting."

The Projects are biomass generating facilities as identified in (d) and as such, they are pre-approved and EPS-compliant. 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.

2. If the contract is subject to the EPS, discuss how the contract is in compliance with D.07-01-039.

Not applicable.

3. If the contract is not subject to EPS, but delivery will be firmed/shaped with specified baseload generation for a term of five or more years, explain how the energy used to firm/shape meets EPS requirements.

Not applicable.

4. If the contract term is five or more years and will be firmed/shaped with unspecified power, provide a showing that the utility will ensure that the amount of substitute energy purchases from unspecified resources is limited such that total purchases under the contract (renewable and non-renewable) will not exceed the total expected output from the renewable energy source over the term of the contract.

Not applicable.

5. If substitute system energy from unspecified sources will be used, provide a showing that:

a. the unspecified energy is only to be used on a short-term basis; and

b. **the unspecified energy is only used for operational or efficiency reasons; and**

c. **the unspecified energy is only used when the renewable energy source is unavailable due to a forced outage, scheduled maintenance, or other temporary unavailability for operational or efficiency reasons; or**

d. **the unspecified energy is only used to meet operating conditions required under the contract, such as provisions for number of start-ups, ramp rates, minimum number of operating hours**

Not applicable.

I. Procurement Review Group (PRG) Participation

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

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.

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.

The Projects were presented to the PRG on November 8, 2011 after previously being discussed at the June 14, 2011 PRG meeting.

Additional information is provided in Confidential Appendices A1 and A2.

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.

Not applicable.

J. 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

Arroyo Seco Consulting is the IE.

2. Describe the oversight provided by 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.

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

The IE was present at the PRG meeting on November 8, 2011 when PG&E presented the Projects and answered PRG members' questions.

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

The detailed findings of the IE regarding the 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.

The Project development team, CalBio, has completed the construction of one dairy-waste biogas project, Stockdale, but it is not yet operational. None of the team members have prior experience bringing a power plant online. However, the team has extensive experience in other industries including: dairy and other agriculture operations, management consulting, telecommunications and financial services.

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

The Project development team completed construction of the Stockdale Project. They do not have previous power plant operational experience.

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 employ many commercially-proven technologies, including: anaerobic digesters of animal waste and biogas-fueled internal combustion engines for electricity generation. Both Projects will use a double-lined lagoon digester, and the Old River Project will also use two above-ground stir tank reactors. The Stockdale Project, as described below, also deploys a custom, innovative engine.

For the Stockdale Project, the developer designed and constructed the Project through a collaborative process with Dr. Doug Williams (who teaches at California Polytechnic State University), the Central Valley engineering firm Provost & Pritchard, and Environmental Fabrics, Inc, ("EFI") which has built lagoon digesters around the world. Both Dr. Williams and EFI have designed existing California lagoon digesters and Provost & Pritchard played a role in designing many California dairies. The Stockdale lagoon is double-lined and meets the Water

Board's Tier 1 guidelines, their strictest protocol.[14] The 0.6 MW engine for the Stockdale Project is a rebuilt engine with a Caterpillar 398 core, specially designed to handle dairy biogas. It deploys an exhaust gas recirculation system, state-of-the-art control system designed to limit the emissions of nitrogen oxides ("NOx"), and a standard three-way catalyst. CalBio received grant funds from the San Joaquin Valley Air Pollution Control District for the Stockdale Project's engine.

The Old River Project will be a hybrid digester, integrating both the double-lined lagoon from EFI and two Complete Stir Tank Reactors ("CSTR") from MT-Energie, a German company that, according to the developer, has built over 500 projects in Europe. The Old River Project will use two 1.2 MW Caterpillar CG170 engines that are manufactured by MWH GmbH, which was recently acquired by Caterpillar. The engines will be equipped with a selective catalytic reduction system for NOx reduction.

Renewable Energy Construction Management, the U.S. subsidiary of MT-Energie, is the Project Engineering, Procurement, and Construction ("EPC") contractor for the Old River Project. The developer has informed PG&E that this is one of the first dairy-waste biogas projects in California with an EPC partner.

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 – the Projects will be using a commercially demonstrated technology.

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

The Stockdale Project will not use a hybrid configuration. The Old River Project will use a hybrid digester configuration. For anaerobic digestion, the Old River Project will use both a lagoon and two above-ground stir tanks. The equipment manufacturers for both digester components have commercially demonstrated technologies as cited above. While PG&E does not have reason to believe there are potential issues with the hybrid configuration, as the developer has asserted that the components are all commercially demonstrated, this is the first hybrid project that the development team has built. The developer asserts that the hybrid configuration allows the Project to benefit from the characteristics of both technologies. In particular, the CSTR technology results in more controlled energy production as well as greater destruction of pathogens due to its higher temperature.

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

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[14] *See* California Regional Water Quality Control Board, Central Valley Region, Order No. R5-2007-0035 "Water Discharge Requirements General Order for Existing Milk Cow Dairies", pg. 13

National Renewable Energy Lab (NREL) that supports resource quality claims and ability for the facility to provide expected generation.

The fuel feedstock will be onsite dairy manure, and the Projects each have feedstock agreements for the fuel that extend beyond the terms of the PPAs.

While PG&E does not anticipate any production shortfall, disruptions at the adjacent dairies are a risk factor as they could potentially disrupt the Projects' operations and their ability to generate electricity.

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

ii. Where the fuel is being stored

See Quality of Renewable Resource above.

The fuel will be flushed into collection areas and flowed into a biogas control system, the main component of which is an anaerobic digester. In the anaerobic digester, methanogenic bacteria break down the dairy waste and create biogas, which primarily consists of methane. The fuel will be stored in the digesters until the process is complete and the fuel is ready to be cleaned to run through an internal combustion engine for electricity generation.

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.

The developer and owner of the Projects is, in part, the owner of the host dairies. PG&E believes that this partnership should result in adequate fuel supply, which will allow the Projects to meet the terms of the fuel supply contracts.

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.

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

The Projects have secured long-term fuel supply agreements that extend beyond the PPA terms. The Projects will use onsite water and will not require additional water beyond what is already used for dairy operations.

Stockdale received its California Regional Water Quality Control Board, Central Valley Region, Construction Quality Assurance Report for the digester lagoon on November 24, 2010 and Old River is expected to file for this permit within the next few months.

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

Not applicable – The Projects will not consume any additional water beyond what is already used for dairy operations.

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

The Projects are expected to meet the terms of the PPAs given the long-term fuel supply agreements in place and the established nature of the dairy facilities supplying the fuel.

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

The Projects both have leases that extend multiple years beyond the PPA terms. The leases do not contain exercisable extension options, but the dairy owner is a partner in the Projects.

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

The Projects both have 100% site control via their long-term lease agreements, providing the Projects with site control throughout the terms of the PPAs.

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.

The Stockdale Project is constructed.

The Old River Project has an EPC contract in place and further information on equipment procurement status can be found in Confidential Appendix A1.

PG&E does not anticipate contingencies or delays due to equipment procurement issues, but these could result if financing is not secured for the Old River Project or equipment suppliers go out of business. However, the technology is commercially demonstrated and there are additional equipment suppliers in the industry.

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

The developer was successful in procuring the necessary equipment to construct the Stockdale Project, which has completed construction but is not yet in commercial operation.

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

PG&E is not aware of any equipment procurement issues that could affect the Projects' date of operability.

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.

Stockdale has received a preliminary certification of RPS-eligibility, which should be finalized shortly. Old River is not as far along in development and has not applied for preliminary certification. Based on the Projects' plans, PG&E does not have any concerns about the Projects' eligibility for RPS certification from the CEC.

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.

STOCKDALE

Name of Permit or Lease required	Grantor	Description of Permit or Lease	Current Status (to be filed, pending approval, approved)	Projected timeframe for approval
Authority to Construct	San Joaquin Valley Air Pollution Control District	Air permit required to begin construction of generation facility	Approved 10/30/2009	Completed
Construction Quality Assurance Report, Tier 1 Pond	California Regional Water Quality Control Board (Central Valley Region)	Water permit required to fill lagoon digester	Approved 11/24/2010	Completed
Building Permit	Kern County	Permit for the generation facility	Approved K201003099	Completed
Building Permit	Kern County	Permit for the digester	Approved K201100090	Completed
Conditional Use Permit	Kern County	N/A- dairies are able to add digester electricity generation up to 10 MW by right in Kern County	N/A	N/A

OLD RIVER

Name of Permit or Lease required	Grantor	Description of Permit or Lease	Current Status (to be filed, pending approval, approved)	Projected timeframe for approval
Authority to Construct	San Joaquin Valley Air Pollution Control District	Air permit required to begin construction of generation facility	Initially approved for earlier design, pending re-approval	60 days
Construction Quality Assurance Report, Tier 1	California Regional Water Quality Control Board (Central	Water permit required to fill lagoon digester	To be filed	30 days after filing

Pond	Valley Region)			
Building Permit	Kern County	Permit for the generation facility	To be filed	Dependent on filing date
Building Permit	Kern County	Permit for the digester	To be filed	Dependent on filing date
Conditional Use Permit	Kern County	N/A- dairies are able to add digester electricity generation up to 10 MW by right in Kern County	N/A	N/A

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

Both Projects plan to use the Section 1603 Treasury Cash Grant. The Stockdale Project received its Section 1603 Treasury Cash Grant award in October 2012. The Old River Project needs to be placed into service by December 31, 2013 to qualify for the grant.

The developer also received funding through the San Joaquin Valley Air Pollution Control District's Technology Advancement Program ("TAP") for the design of the Stockdale engine, which limits NOx emissions.

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.

SB 71 authorizes the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) to provide eligible projects financial assistance in the form of a sales and use tax exclusion on property used for the "design, manufacture, production, or assembly" of either advanced transportation technologies or alternative energy source products, components or system. Stockdale has used this tax exemption for equipment procurement and Old River plans to do so as well.

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.

Not applicable.

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 Old River Section 1603 Treasury Cash Grant is not obtained. Stockdale has already received its Section 1603 Treasury Cash Grant.

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.

Both Projects interconnect at the distribution-level and have applied for interconnection through PG&E's independent study process. Stockdale has an executed Interconnection Agreement and Old River has completed its studies but has not yet signed an Interconnection Agreement.

Additional detail is offered in Confidential Appendices A1 and A2.

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

Stockdale has an executed Interconnection Agreement with PG&E, signed August 5, 2010.

PG&E describes the interconnection agreement status for Old River in more detail in Confidential Appendix A1.

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.**

d. **Describe any required substation upgrades or construction**

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

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

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.**

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

PG&E describes the transmission arrangements for Stockdale and Old River in more detail in Confidential Appendices A1 and A2.

D. Financing Plan

1. **Explain developer's manner of financing (e.g. project financing, balance sheet financing, utility tax equity investment, etc.).**
2. **Describe the developer's general project financing status.**
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?

4. **List any government funding or awards received by the Project.**
5. **Explain the creditworthiness of all relevant financiers.**
6. **Describe developer's history of ability to procure financing.**
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.**

The developer was successful in financing construction of the Stockdale Project. The developer will be closing both the construction and term financing for Old River, which will include debt and equity capital.

Both Projects plan to use the Section 1603 Treasury Cash Grant. The Stockdale Project received its Section 1603 Treasury Cash Grant Award in October 2012. The developer anticipates the Old River Project will qualify for 1603 Treasury Cash Grant. Old River needs to be placed into service by December 31, 2013 to qualify for the grant. Old River bears the risk if it is unable to obtain the cash grant.

Additional financing information is provided in Confidential Appendices A1 and A2.

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 criteria and milestones that PG&E includes in its form RPS PPA contracts. These and other contingencies and milestones are addressed in Confidential Appendices A1 & A2 and D1 & D2.

V. REQUEST FOR COMMISSION APPROVAL

PG&E requests that the Commission issue a resolution no later than July 11, 2013, that:

1. Approves the PPAs in their entireties, including payments to be made by PG&E pursuant to the PPA, subject to the Commission's review of PG&E's administration of the PPA.
2. Finds that any procurement pursuant to the 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, D.06-10-050, D.11-12-020. D.11-12-052 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 and 2012 RPS procurement plans.
   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 cost that may arise from the PPAs is 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 pre-approved as meeting the EPS because they are for a <u>biomass facility covered by Conclusion of Law 35(d) of D.07-01-039.</u>

   (b) PG&E has provided the notice of procurement required by D.06-01-038 in its Advice Letter filing.
7. Adopts a finding of fact and conclusion of law that deliveries from the PPAs shall be categorized as procurement under the portfolio content category specified in Public Utilities Code Section 399.16(b)(1)(A), subject to the Commission's after-the-fact verification that all applicable criteria have been met.

<u>Protests</u>:

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, facsimile or E-mail, no later than **March 6, 2013**, which is 20 days after the date of this filing. Protests must be submitted to:

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

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

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

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

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

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

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Rule 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Rule 3.11).

Effective Date:

PG&E requests that the Commission issue a resolution approving this Tier 3 advice filing by July 11, 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.

Brian Cherry

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
Karin Hieta _ DRA
Cynthia Walker – DRA

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.

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: Anupama Vege and Kimberly Chang
☑ ELC ☐ GAS	Phone #: (415) 973-7600 and (415) 972-5472
☐ PLC ☐ HEAT ☐ WATER	E-mail: a1vb@pge.com and kwcc@pge.com and PGETariffs@pge.com

EXPLANATION OF UTILITY TYPE	(Date Filed/ Received Stamp by CPUC)
ELC = Electric GAS = Gas PLC = Pipeline HEAT = Heat WATER = Water	

Advice Letter (AL) #: **4193-E** **Tier: 3**

Subject of AL: **Power Purchase Agreements for the Procurement of Eligible Renewable Energy Resources between ABEC Bidart-Stockdale, LLC and ABEC Bidart-Old River, LLC and Pacific Gas and Electric Company**

Keywords (choose from CPUC listing): Contracts, Portfolio

AL filing type: ☐ Monthly ☐ Quarterly ☐ Annual ☑ One-Time ☐ Other ____________________________

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

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

Summarize differences between the AL and the prior withdrawn or rejected AL: ____________________

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

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

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: Michael Avidan (415)973-4858

Resolution Required? ☑Yes ☐ No

Requested effective date: July 11, 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: N/A
Service affected and changes proposed: N/A
Pending advice letters that revise the same tariff sheets: N/A

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

California Public Utilities Commission
Energy Division
EDTariffUnit
505 Van Ness Ave., 4th Flr.
San Francisco, CA 94102
E-mail: EDTariffUnit@cpuc.ca.gov

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

DECLARATION OF UDAY MATHUR
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION
CONTAINED IN ADVICE LETTER 4193-E
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)

I, Michael Avidan, declare:

1. I am presently employed by Pacific Gas and Electric Company ("PG&E"), and have been an employee at PG&E since September 1, 2008. My current title is Senior Manager 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 the "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, B, C1, D1, D2, E1,E2, F1, F2, and G to Advice Letter 4193-E submitted on February 14, 2013. By this Advice Letter, PG&E is seeking this Commission's approval of two power purchase agreements that PG&E has executed with ABEC Stockdale, LLC and ABEC Old River, LLC.

3. Attached to this declaration is a matrix identifying the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is

seeking to protect constitutes the particular type of data and information listed in Appendix 1 of D. 06-06-066 and Appendix C of D.08-04-023 ("the IOU Matrix"), or constitutes information that should be protected under General Order 66-C. The matrix also specifies the category or categories in the IOU Matrix to which the data and information corresponds, 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. February 14, 2013 at San Francisco, California.

Michel Avidan

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
Advice Letter 40XX-E
February 14, 2013

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 40XX-E							
Appendices A1 – A2	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 40XX-E
February 14, 2013

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 40XX-E
February 14, 2013

IDENTIFICATION OF CONFIDENTIAL INFORMATION

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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 40XX-E
February 14, 2013

IDENTIFICATION OF CONFIDENTIAL INFORMATION

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Appendices D1 – D2	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 40XX-E
February 14, 2013

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 – E2	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 – F2	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. This information should remain confidential for three years.	Remain confidential for three years.

Public Appendix C2

Independent Evaluator Report

ARROYO SECO CONSULTING

PACIFIC GAS AND ELECTRIC COMPANY BILATERAL CONTRACT EVALUATION

REPORT OF THE INDEPENDENT EVALUATOR ON BILATERAL CONTRACTS WITH ABEC BIDART-STOCKDALE LLC AND ABEC BIDART-OLD RIVER LLC

FEBRUARY 7, 2013

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EXECUTIVE SUMMARY

This report provides an independent evaluation of the process by which the Pacific Gas and Electric Company ("PG&E") negotiated and executed Power Purchase Agreements (PPA) with ABEC Bidart-Stockdale LLC ("Stockdale") and ABEC Bidart-Old River LLC ("Old River") for the output of their proposed dairy biogas-fueled generators. ABEC Bidart-Stockdale LLC is currently 1% owned by American Biogas Electric Company LLC ("ABEC") and 99% owned by Bidart Dairy II LLC[1]. ABEC itself is a subsidiary of California Bioenergy LLC ("CalBio"), a generation developer based in Dallas, Texas; CalBio is the sole member of ABEC and the manager of the project. ABEC Bidart-Old River LLC is currently 100% owned by ABEC.

These contracts originated in an approach by CalBio to PG&E in early 2011, [redacted]. An independent evaluator (IE), Arroyo Seco Consulting (Arroyo), conducted activities to review and assess PG&E's processes as the parties negotiated 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 2011 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;[2]
- Fairness of project-specific negotiations; and
- Merit of the PPAs for CPUC approval.

Arroyo's opinion is that the negotiations between PG&E and CalBio, LLC were, to some extent, conducted in a manner that resulted in less than fully fair treatment of ratepayers and competing developers. PG&E provided concessions in [redacted] contract terms that, while they have precedents in past bilateral contracts, are advantageous to these two projects in comparison to the utility's treatment of other sellers in the last two years.

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1 [redacted] John Bidart is a co-founder and board member of California Bioenergy LLC. [redacted]

2 The first four chapters are taken directly from the IE report prepared in October 2011 that accompanied PG&E's short list for its 2011 RPS solicitation; 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.

These specific bilaterally negotiated terms are more favorable to the projects than the terms granted to shortlisted sellers from PG&E's 2011 RPS RFO.

Arroyo's independently developed opinion is that both of the contracts rank low in net valuation and high in contract price. Arroyo assessment is that the portfolio fit of both the Stockdale and Old River projects with PG&E's supply needs ranks as moderate, and their project viability ranks as moderate when compared to competing alternatives. Because of the low valuation of the proposed projects, and because of [redacted] concessions that PG&E granted to the sellers, Arroyo has reservations about whether the two bilateral contracts merit CPUC approval.

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.[3] 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.

[3] 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."[4] 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).

[4] 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 bilateral negotiations to develop contracts with Stockdale and Old River, Arroyo pursued project-specific activities:

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

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

- Performed an independent valuation of the Stockdale and Old River contracts and evaluation of the project viability of the facilities;

- Reviewed information provided by CalBio staff about the economics of the projects;

- Compared the net value and pricing of the two 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 Stockdale and Old River contracts 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.[5]

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.

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[5] 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?

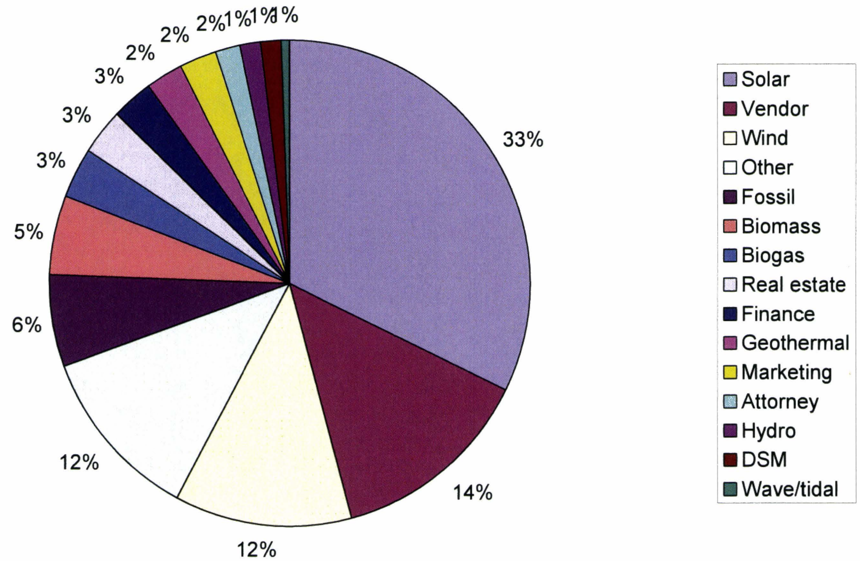
By May 2011, PG&E had compiled a general contact list for use in publicizing its RFOs, totaling more than 1,600 individuals; this is a significant increase from the version of the list used in the 2009 RPS solicitation, with closer to 1,100 contacts. PG&E appears to have been actively compiling contacts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



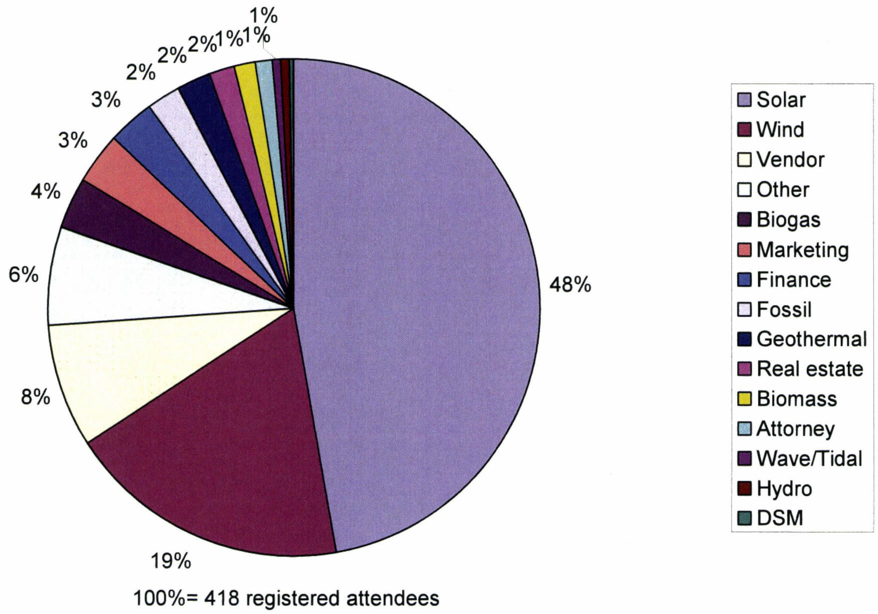
Arroyo notes that news of PG&E's RPS RFO was publicized not only in the trade press but also on the public websites of several law firms whose practices include a focus on renewable energy contract law, such as Allen Matkins, Davis Wright Tremaine, Stoel Rives, and Wilson Sonsini. The news of the RFO 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."[6] The application of judgment in bringing the non-valuation criteria to bear on

[6]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.[7] 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 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

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[7] 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.

selection decisions.[8] 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

[8] 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).[9]

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

[9] 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.[10] 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 mix within the CAISO the price of increasingly scarce but required load-

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

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.

<u>On-Line Date.</u> 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."[11] 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.

[11] 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;

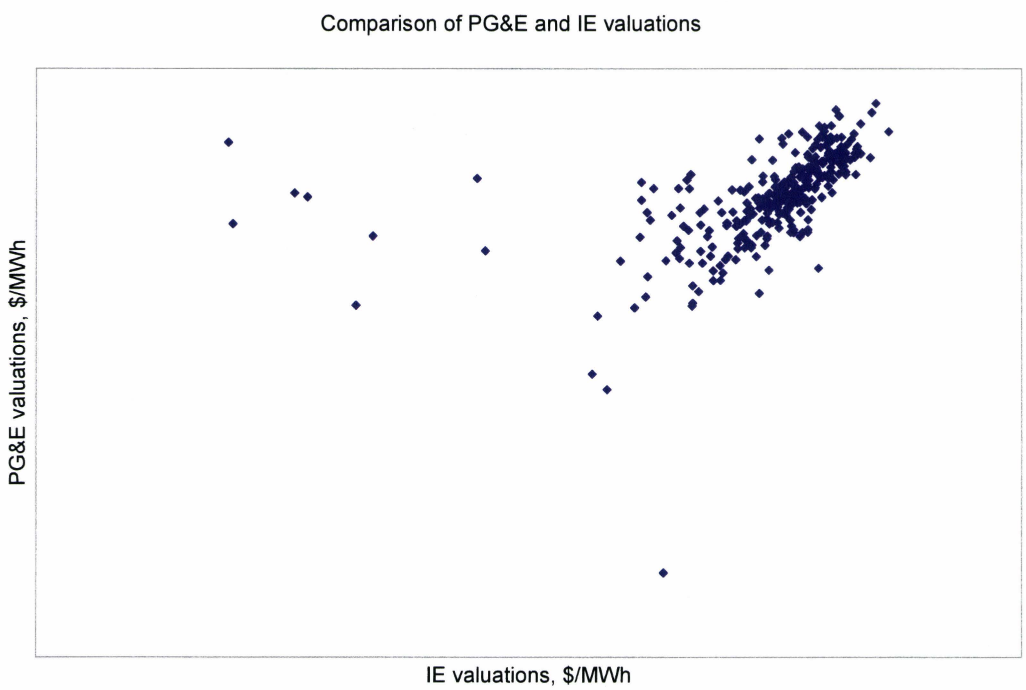
- Less value assigned to projects interconnecting in non-CAISO balancing authority areas;

- 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;

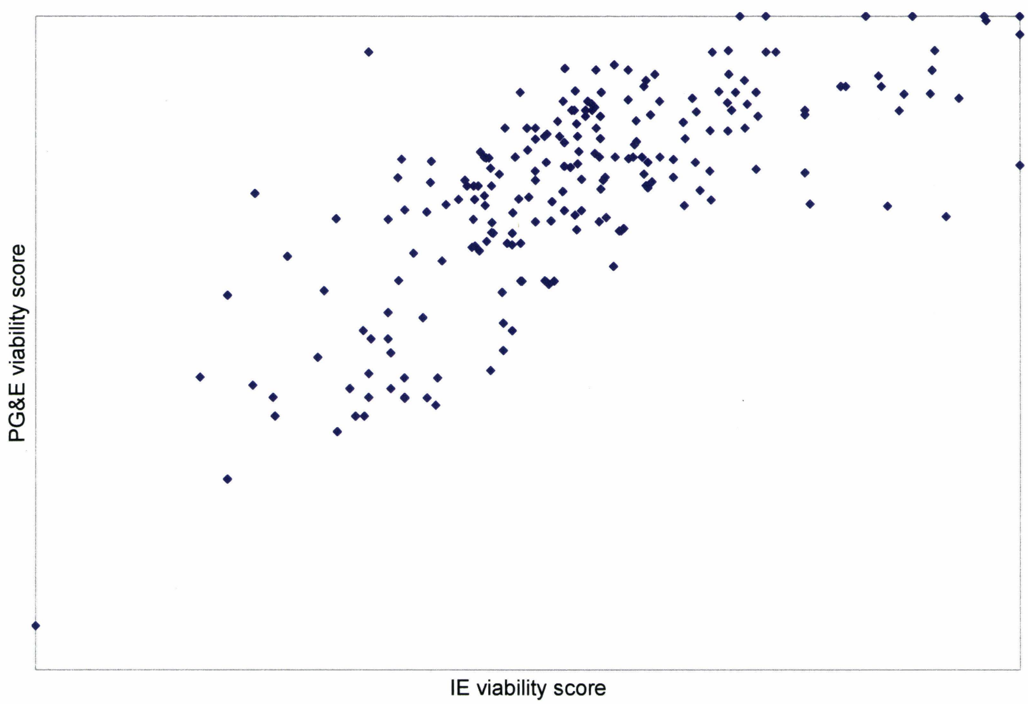
- Lower IE scores for projects from developers with experience only in distributed generation (e.g. beyond the meter) projects rather than wholesale generation;

- Lower IE scores for projects for which specific network upgrades are as yet poorly characterized.

<u>3. RECTIFYING DEFICIENCIES OF REJECTED OFFERS</u>

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 the extent to which PG&E's bilateral negotiations with California Bioenergy LLC for two power purchase agreements for delivery of renewable energy from ABEC Bidart-Stockdale LLC and ABEC Bidart-Old River LLC projects were conducted fairly.

Arroyo observed several negotiation sessions between PG&E's and CalBio's representatives over the course of nearly two years. 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 noted a few specific concessions in contract terms that the IE considers to be materially advantageous to Stockdale and Old River in comparison to terms provided to other sellers with which PG&E has recently contracted. These concessions have the effect of weakening ratepayer protections for project performance and are in part the basis for Arroyo's concerns about fairness of treatment. Also, PG&E treated the two projects differently than most of the sellers with whom the utility had been bilaterally negotiating RPS agreements [redacted]

PG&E did not provide the sellers with information that might have unfairly advantaged them compared to competitors. The original starting point for the negotiations was PG&E's 2010 RPS Form Agreement; PG&E subsequently requested updates to conform terms and conditions to those of its 2011 and 2012 Form Agreements when those became available.

Arroyo's opinion is that the negotiations between PG&E and CalBio for PPAs with the two project companies were conducted in a manner that appears to be less than fully fair to competitors and ratepayers because of specific [redacted] concessions granted to Stockdale and Old River during the course of negotiations.

A. BACKGROUND INFORMATION

CalBio was founded in 2006 with an intent to build, own, and operate dairy-based biogas digesters and generator sets to deliver power to the grid in California. PG&E's prior commercial dealings with CalBio include the purchase of Climate Action Reserve carbon emission credits for use in the utility's voluntary ClimateSmart program; these credits were derived from a methane capture project employing a dairy waste digester at the Stockdale project site. As of today, CalBio has not yet developed and brought into commercial operation any biogas generator. One of the co-founders of CalBio is the manager of large dairies in Kern County [redacted]

CalBio approached PG&E in early 2011 [redacted]

The 0.6-MW Stockdale project has already been constructed but has not yet entered operation as an electric generator; its guaranteed commercial operation date is April 1, 2013. The Old River project's planned operation is to commence in two phases, with GCOD for the first 0.9 MW of February 28, 2014, and June 15, 2014 for an additional 0.94 MW.[12] Stockdale will employ a covered lagoon to digest the dairy waste; Old River will use both a covered lagoon and two stirred-tank reactors. Both projects will generate power from the biogas with internal combustion engines. CalBio and Preventive Maintenance Services, Inc. (PMSI) of New Iberia, Louisiana had entered into a partnership for CalBio to use PMSI's Greenguard engine technology which is intended to operate using biogas with high carbon dioxide and high hydrogen sulfide content.[13] The engine on site at the Stockdale facility uses a Caterpillar internal combustion engine that has been rebuilt and modified with this Greenguard technology. The Old River project will use internal combustion engines from MWM GmbH, a German subsidiary of Caterpillar.

After a few months of contract discussions, in May 2011, PG&E suggested to the CalBio team that it did not make sense for the parties to proceed in bilateral negotiations, and recommended that the developer "take a look" at submitting its projects as offers to PG&E's impending 2011 RPS solicitation. The CalBio team declined to submit the projects into the RFO. [redacted]

[redacted]

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12 [redacted]

13 Press release, "California Bioenergy and PMSI-Walters Power International Announce a "Clean Tech" Strategic Partnership, May 6, 2009. [redacted]

[redacted]

PG&E chose not to terminate negotiations with CalBio. The parties' bilateral discussions proceeded on and off through the rest of 2011 and 2012 (with heightened negotiation activity between October 2011 and March 2012) culminating in the execution of the two bilateral contracts on December 19, 2012.

B. PRINCIPLES FOR EVALUATING THE FAIRNESS OF NEGOTIATIONS

Arroyo took into account several principles to evaluate the degree of fairness with which PG&E handled negotiations with CalBio.

- 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 CALIFORNIA BIOENERGY AND PG&E

The parties' negotiations took most of 2011 and 2012 to complete, although the key components of the contract terms were developed during discussions in the last quarter of 2011 and the first quarter of 2012. Some of the issues addressed in the negotiation included:

- <u>Pricing</u>. [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

- Delivery term. [redacted]

- Contract capacity and quantity. [redacted]

[redacted]

[redacted]

[redacted]

- Project development security and delivery term security. [redacted]

[redacted]

[redacted]

- Project location. [redacted]

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14 [redacted]

15 [redacted]

[redacted]

- Guaranteed energy production. [redacted]

[redacted]

- [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

- [redacted]
- Guaranteed commercial operation date. [redacted]

[redacted]

[redacted]

- [redacted]

[redacted]

- [redacted]

[redacted]

- [redacted]

- [redacted]

[redacted]

[redacted]

- [redacted]

- [redacted]

- [redacted] [redacted]

- [redacted]

[redacted]

- [redacted]
- [redacted]

D. DEGREE OF FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

Arroyo observed several of the telephonic negotiation sessions between the PG&E and CalBio teams over the course of 2011 and 2012. CalBio requested numerous concessions from PG&E, proposals that would have the effect of weakening ratepayer protections and providing greater flexibility and optionality to the developer in its actions. PG&E rejected many of these requests. However, PG&E did grant some fairly material concessions to CalBio in altering the two PPAs from the utility's Form Agreement.

In the last two years PG&E has been able to exercise greater negotiating leverage over sellers of RPS-eligible energy than in prior years. The utility's diminished need for near-term incremental purchases to meet RPS compliance goals and the increased supply of developers and projects seeking to enter into California RPS contracts has tilted the playing field's advantage toward the buyer in comparison to the earlier market environment. As a result, PG&E has avoided granting certain terms and conditions advantageous to sellers that were previously more frequent, and the utility has stiffened ratepayer protections. However, PG&E provided the CalBio project companies with concessions that it has denied to other sellers with whom it executed RPS contracts in the last two years.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Despite these mitigating circumstances, Arroyo's opinion is that the negotiations for the Stockdale and Old River PPAs were handled in a manner that appears less than fully fair to ratepayers and to competitors:

- The distribution of risk between PG&E and the two projects shifts certain components of risk to ratepayers when compared to other recent PPAs, [redacted]

- Ratepayer protections are weakened [redacted]

- [redacted]

  Arroyo generally considers the choice of which contracts to negotiate bilaterally and which sellers to force into open competition to be within a utility's commercial discretion. However in Arroyo's opinion PG&E's choice to continue bilateral negotiations with Stockdale and Old River does create at least the appearance that the CalBio projects received special, disparate, and possibly unfair consideration. [redacted]

  [redacted]

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16 [redacted]

[redacted]

Arroyo acknowledges that other observers might consider concessions on PPA terms granted by PG&E to the two project companies to be inconsequential because [redacted], and, on that basis, might conclude that the negotiations were fair overall. Furthermore, Arroyo cannot point out any individual competitor that has been specifically harmed by PG&E's granting favorable concessions to the CalBio projects. Arroyo's judgment is a matter of opinion that the concessions provided to Stockdale and Old River that shift risks to ratepayers and weaken ratepayer protections should cause policymakers reservations, given the utility's more stringent treatment [redacted]

6. MERIT FOR CPUC APPROVAL

This chapter provides an independent review of the merits of the contracts between PG&E and ABEC Bidart-Stockdale LLC and ABEC Bidart-Old River LLC against criteria identified in the Energy Division's 2011 RPS IE template.

A. CONTRACT SUMMARY

On December 19, 2012, ABEC Bidart-Stockdale LLC and ABEC Bidart-Old River LLC executed contracts with PG&E for delivery of RPS-eligible energy from the proposed 0.6- and 1.84-MW facilities.

The Stockdale PPA will have a contract quantity of 1.4 GWh/year over the ten-year delivery term. Its guaranteed commercial operation date is April 1, 2013. The project will be located on the premises of Bidart Dairy III (formerly Larson's Dairyland), located in a rural area about 17 miles west of downtown Bakersfield, outside the city limits. CalBio reports that the digester and generation equipment is already constructed and in place. The dairy already has a covered-lagoon digester [redacted]

The Old River PPA will have contract quantity ramping up to 13.25 GWh/year [redacted] The guaranteed commercial operation date for its first phase is February 28, 2014; for the second phase, June 15, 2014. This facility will be located on the premises of Bidart Dairy II, located about twenty miles southwest of downtown Bakersfield.

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 Stockdale and Old River contracts 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 valuations of the contracts rank as low compared to relevant peer groups of competing proposals, and the contract prices rank high.

Contract Price. [redacted]

[redacted] These ranges lead to ranking both contracts in the highest-priced decile among Offers received in the 2011 RPS solicitation; in other words, the two projects' prices are higher than more than 90% of competitors' Offers for RPS-eligible energy from in-state projects as of June 2011.

On that basis, Arroyo's opinion is that both the Stockdale and Old River contracts' prices rank high among competing alternatives.

Market Valuation. Using different versions of its least-cost, best-fit methodology PG&E estimated the value of the Stockdale and Old River projects' deliveries under the PPAs, taking as inputs for market forward price observations from December 5, 2012. Using PG&E's traditional least-cost, best-fit methodology, both contracts' estimated net market values rank in the lowest-valued decile for net market valuation [redacted]

PG&E also estimated the "portfolio-adjusted value" (PAV) of the two PPAs using a methodological variant that explicitly discounts the benefit to ratepayers of the renewable attributes of delivered energy in years when the utility does not need the power to meet compliance needs. 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 2018 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.

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17 [redacted]

18 [redacted]

Using the portfolio-adjusted value metric, the Stockdale PPA was also ranked in the lowest-valued decile compared to the peer group. The Old River PPA was ranked in the lowest-value quartile, [redacted]

[redacted] it is premature to judge whether or not a valuation of the PPAs should include or exclude the benefit of RA capacity. PG&E chose to exclude its estimate of Resource Adequacy benefits from the LCBF valuation of the two CalBio contracts.

In contrast, Arroyo estimated the value of the two PPAs assuming [redacted] that they require no network upgrades to achieve full deliverability. But the independent assessment places both PPAs in the lowest-valued decile when ranked against all in-state bundled Offers to PG&E in its 2011 renewable solicitation. [redacted] PG&E and CalBio settled on the final pricing of the PPAs after Offers for the 2011 RPS RFO were received; it is premature to gauge how the PPAs compare to market pricing as of the 2012 RPS RFO offer opening date.

[redacted]

[redacted]

On the basis of these comparisons using PG&E's net market value and portfolio-adjusted value approaches and the independent methodology, Arroyo's opinion is that both the Stockdale and Old River contracts rank low in net value compared to relevant competing alternatives.

PORTFOLIO FIT

The guaranteed commercial operation dates for Stockdale and Old River are in 2013 and 2014, so PG&E expects the projects to start deliveries in periods in which the utility currently anticipates a net long position; thus, the contracts are expected to exacerbate PG&E's overprocurement of RPS-eligible energy for the first several years of their terms. In that sense the contracts fit poorly into the utility's portfolio needs. Indeed, more than half of the Stockdale contract's deliveries are expected to occur in years when PG&E estimates that it has overprocured RPS-eligible energy. However, as in-state resources, the benefit of the projects' renewable generation could be banked by the utility for use in later years of compliance need.

[redacted]

While the Stockdale and Old River PPAs are based on PG&E's Form Agreements for as-available power, Arroyo expects the facilities to have relatively good day-ahead predictability of output levels. The degree of predictability might be considerably better than wind or solar photovoltaic generators but not quite as good as fossil-fueled or solid biomass-fueled projects.

Based on the poor match with PG&E's RPS needs, the above-average firmness of the product delivered, and the state of its need for baseload resources, Arroyo ranks the Offers as moderate for portfolio fit in the context of Offers received in PG&E's 2011 RPS RFO. This is consistent with PG&E's methodology used when initially scoring those Offers[redacted]

PROJECT VIABILITY

In Arroyo's opinion, the two biogas-fueled facilities rank as moderate in project viability when compared to competing alternatives.

Project development experience. Neither California Bioenergy nor Bidart Dairy II, LLC have ever successfully developed, constructed, and brought a generating facility into operation. The team has constructed the Stockdale facility but has not yet generated power from it.

The principals of California Bioenergy have significant experience in other industries than power generation, such as dairy and other agriculture ownership and operation, management consulting, telecommunications start-ups, and venture capital. None of them have brought a generating facility into operation, nor do they appear to have ever worked at a firm that successfully developed power plants.

Ownership/O&M experience. Neither California Bioenergy nor Bidart Dairy II, LLC have owned or operated any commissioned generating facilities. [redacted]

CalBio has, however, engaged the U.S. subsidiary of Germany-based MT-Energie GmbH as contractor to engineer and construct the Old River project. This firm has experience of constructing about 500 biogas-fueled generators, particularly in Europe.

Technical feasibility. Both anaerobic digestion of animal waste and internal combustion engines that use the biogas produced by methanogenic bacteria as fuel are both well-commercialized technologies employed throughout the U.S. and Europe. Press reports suggest that about one hundred biogas-fueled generators are operating in the U.S. at dairies.[19] Power generation from manure-based biogas (including excrement other than dairy waste) in the U.S. was estimated to total 541 GWh in 2011.[20] Such generating projects are reported to be as large as 4 MW.[21] Dairy-based biogas-fueled generation has been in use in California since at least 2002, when the Inland Empire Utility Agency's 0.37-MW facility in Chino Hills commenced operation (this project was subsequently shut down in 2009 for lack of cow-based biogas, and converted to digestion of food waste).[22] In this context the Stockdale and CalBio facilities are neither uniquely large nor innovative in their technology.

[redacted] Stockdale will use a covered-lagoon digester and a Greenguard generation unit or equivalent. CalBio is working with Environmental Fabrics, Inc. (EFI), a manufacturer and turn-key installer of digester lagoon liners and covers (EFI claims a fair amount of experience using its products for dairy digesters in California). Greenguard is a patented, trademarked engine technology of Preventive Maintenance Services, Inc. (PMSI) that is adapted to burn gas with higher carbon dioxide and hydrogen sulfide content, as with manure digester gas, while meeting nitrogen oxide emission requirements by using non-selective catalytic reduction. EFI has deployed its liner and cover products for hundreds of lagoon digesters (not all for biogas-fueled generation). PMSI has a few case studies of its use of the Greenguard technology on internal combustion engines, such as a landfill gas-fueled facility near Mesa, Arizona operated by Salt River Project and a natural gas-fired cogen facility on the roof of the Rio Casino in Las Vegas. The underlying hardware that was custom-modified to use the emissions control technology was a rebuilt 600-kW Caterpillar generator, a standardized, widely deployed product.

The Old River PPA indicates that the facility will employ one covered-lagoon digester and two above-ground stirred-tank digesters, and two 1.2-MW Caterpillar CG170 engines for power generation. These engines are manufactured by MWM GmbH, a recently acquired German subsidiary of Caterpillar; the Cat-branded version of the engines were

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19 Renewable Energy News, "Biogas Technology: "Cow Power" Catching on in USA", April 6, 2012.

20 BioCycle Energy, "Farm Digester Industry in America", February 1, 2012.

21 Green Prophet, "Israel's 4MW Biogas Plant to Clean Up after 14,000 Cows", September 16, 2012.

22 CalRecycle 13th Technical Training Conference, "Permitting a Food Waste Anaerobic Digester", presented by Environ Strategy Consultants, Inc., March 1, 2011.

introduced in mid-2012. MWM GmbH has several gigawatts of installed base for its engines worldwide, including biogas-fueled generators at sewage plants. The engines will be equipped with selective catalytic reduction for emissions control. The stirred-tank digesters will be concrete structures designed, engineered, and constructed by MT-Energie.

Resource quality. The fuel for the two projects will originate from dairy waste from the cows employed at the two Bidart Dairies on Stockdale Highway and on Old River Road. These operations already maintain a population of thousands of cows for their primary business of milk production.

[redacted]

Manufacturing supply chain. The developers report that the equipment for the Stockdale facility is already in place. Arroyo would not expect manufacturing constraints to pose an issue for a spring 2014 on-line date for the Old River facility given that both the liner vendor and the engine vendor indicated for that project are large manufacturers in their fields, and designing and building two concrete tanks should not pose an onerous schedule challenge. [redacted]

Site control. The projects will be located within the property of two dairies [redacted]

Permitting. The projects have both obtained their authority to construct from the San Joaquin Valley Air Pollution Control District.[23] However, the Old River air permit was granted based on an earlier plant design that proposed to use PMSI 600-kW Greenguard engines; because the project now is intended to employ 1-MW MWM GmbH engines, the project company has applied for a new permit from the SJVAPCD.

The Stockdale facility obtained its wastewater discharge permits from the Regional Water Quality Control Board in 2010, enabling it to operate the covered-lagoon digester. [redacted]

[23] Arroyo notes that the SJVAPCD air permit for Old River is based on an assumption that the facility will use 600-kW PMSI engines using Greenguard technology, not two 1-MW MWM engines [redacted]

In Kern County the dairies are not required to obtain a use permit to construct and operate digesters.

Project financing status. The Stockdale project obtained a Section 1603 federal cash grant in lieu of investment tax credits; the Old River project is expected to do so as well.

[redacted] CalBio anticipates that the construction of the Old River facility will be financed by a combination of debt and equity, [redacted]

Interconnection progress. The Stockdale project executed a Small Generator Interconnection Agreement with PG&E in August 2010. The Old River projects is still moving through the Independent Study Process [redacted]

[redacted]

Transmission requirements. [redacted]

[redacted]

[redacted]

[redacted]

Reasonableness of COD. Arroyo views Stockdale as facing only modest hurdles to achieving its guaranteed commercial operation date in 2013. [redacted]

Similarly, Arroyo expects only modest uncertainty about whether Old River can meet its phased on-line dates of February and June 2014. [redacted]

Summary. The Stockdale and Old River projects have made considerable progress towards completion and operation. The developers have established site control for the proposed generation facilities and have required permits for Stockdale. The technologies to be employed are well-commercialized and there should be no constraints on manufacturing the hardware; the hardware for the Stockdale facility is reportedly already in place. The Stockdale project has an executed Small Generator Interconnection Agreement [redacted]

On the other hand, neither California Bioenergy nor the Bidart Dairy nor the key members of their development teams has ever brought a generating project of any technology into commercial operation. (They have however engaged an experienced contractor to build the Old River facility.) [redacted]

Arroyo has scored the Stockdale project [redacted] using the Energy Division's Project Viability Calculator. Based on this, Stockdale would rank in the third highest-ranked quartile among proposals for bundled in-state projects submitted to PG&E in the 2011 RPS RFO in June 2011.[24] [redacted] On that basis, Arroyo's opinion is that Stockdale ranks moderate in project viability.

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[24] 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 scores the Old River project at [redacted] using the Calculator. [redacted] This also places the project into the third highest-ranked quartile when compared to 2011 RPS RFO in-state Offers; [redacted] Arroyo's opinion is that Old River ranks as moderate in project viability. Arroyo does not perceive any insuperable barriers to completion of the Old River facility. [redacted]

RPS GOALS

RPS-eligible production from the Stockdale and Old River projects will likely contribute to PG&E's RPS compliance goals in the third compliance period of 2017-2020, when the utility has a net short position, and beyond.

Entering into this transaction would advance PG&E and the state towards the 20% biomass goal set by Executive Order S-06-06. Arroyo notes that implementing the Old River dairy waste-fueled project should contribute to the state's RPS goals by destroying methane, a potent greenhouse gas, which currently is discharged into the atmosphere from the dairy's waste operations. It appears that the methane generated at the Stockdale dairy is already being captured and destroyed, with the benefit of that greenhouse gas reduction being sold up until now as Climate Action Reserve offset credits.

C. DISCUSSION OF MERIT FOR APPROVAL

Arroyo has some reservations about whether the Stockdale and Old River contracts merit CPUC approval.

Arroyo's independent but simple valuation ranks both PPAs as low in net value compared to Offers submitted to PG&E in the 2011 RPS RFO. It is premature to judge whether the PPAs also rank low in the current market by comparison to Offers to PG&E's 2012 RPS RFO. PG&E's LCBF analysis suggests that the contracts rank as low in net market value and low in portfolio-adjusted value when compared to competing alternatives including bilateral proposals and shortlisted Offers from the 2011 RPS solicitation. PG&E now employs its portfolio-adjusted value metric, which discounts the attractiveness of projects outside its service territory and those with early on-line dates, for decision-making. Using that variant methodology, the PPAs rank low in value. The two PPAs' contract prices rank high compared to competing alternatives available to PG&E.

Because these are small facilities, one could argue that the cost that ratepayers would bear to pay the higher, uncompetitive pricing of the Stockdale and Old River PPAs is not large in the context of overall rates. Arroyo's rough estimate of the excess contract payments under these PPAs, compared to what they would be if procured at the more competitive price of the highest-priced contract PG&E executed from its 2011 RPS RFO, is in the range of $[redacted] total over the delivery terms.

Arroyo scores both the Stockdale and Old River projects as moderate in viability. The primary reason why the scores using the Project Viability Calculator are depressed is the lack of prior experience in developing, financing, building, and bringing into operation other power generation projects on the part of CalBio or Bidart Dairy II. Despite this deficiency in renewable power experience, the Stockdale project ranks as moderate [redacted] The Old River project scores slightly lower in viability because [redacted]

Arroyo does not expect any major impediments to prevent the two projects entering commercial operation. Instead, Arroyo would be more concerned about the projects' ability to operate economically and delivery RPS-eligible power to PG&E over the entire delivery term of the PPAs. [redacted]

[redacted]

Arroyo regards the Stockdale and Old River contracts as ranking as moderate in portfolio fit. While the output profile of the projects should be fairly firm, the on-line dates in 2013 and 2014 imply that PG&E has contracted to buy this power for several years when the utility does not actually need it to comply with its RPS obligations (although the renewable attributes of the deliveries could be banked for use in later years). The utility currently expects that it will not actually need to purchase incremental RPS-eligible generation until 2019 or so. It would appear that other reasons are needed to justify PG&E's decision to execute these contracts than to assure RPS compliance.

Arroyo opinion is that PG&E's project-specific negotiations with CalBio for the Stockdale and Old River PPAs were conducted in a manner that appears less than fully fair to ratepayers and to competing sellers. The utility granted these projects significant concessions [redacted]

[redacted]

Furthermore, [redacted] PG&E's selection of CalBio's two high-priced, low-value projects for execution seems less than entirely fair [redacted]

One could argue that Stockdale and Old River deserve preferential treatment because ratepayers need to subsidize uneconomic dairy waste-fueled generators in order to get this technology into wider deployment in California. While Arroyo acknowledges that PG&E and the state as a whole may face challenges in meeting Executive Order S-06-06's goal that 20% of renewable power production be provided by biomass-fueled generation, the IE believes that other biomass-based technologies can and may yet in the future provide lower-cost RPS-eligible energy than Stockdale and Old River. [redacted]

Furthermore, in Arroyo's opinion there are limited opportunities for dairy waste biogas-fueled generators to improve their cost positions from the economics of the Stockdale and Old River projects. Certainly the operators of these two facilities should be able to develop lessons learned from their experience building and operating the projects, but the technologies of using a stirred-tank or covered-lagoon digester to produce biogas, and of producing power from such biogas using an internal combustion engine, and are mature. No revolutionary improvement in efficiency or cost reduction should be expected from deploying these older technologies at Stockdale and Old River, in Arroyo's opinion.

[redacted] While there might be limited opportunities for CalBio to improve the operations or efficiency of [redacted] the opportunity to reduce the capital cost of digesters and of internal combustion engines is likely to be negligible. The Caterpillar engines are a stock manufactured item that offers little or no opportunity for economies of scale. Each digester stands alone and is not mass-produced; the plastic film used for the covered-lagoon digester is already a mass-produced item. Arroyo doubts that these future dairy-based projects could be price-competitive in future RPS solicitations.

Given the IE's reservations about the high price ranking and low value ranking of the contracts and the concessions provided to the projects [redacted], in Arroyo's opinion the PPAs do not particularly merit CPUC approval. Arroyo acknowledges that policymakers who have a strong preference to see wider deployment of dairy waste-based biogas-fueled generation in the state could certainly disagree. The recently enacted Senate Bill 1122 calls for utility procurement of new bioenergy-fueled generating projects, but this applies specifically to new projects that commence operation after June 1, 2013; Stockdale would not meet this criterion but Old River would. Thus, Old River could contribute towards PG&E's progress towards this bioenergy goal. Also, the recently enacted Assembly Bill 1900 instructs the CPUC to adopt policies that promote in-state production of biomethane; but Arroyo's opinion is that dairy waste biogas would be used in a more cost-effective way if injected into gas pipelines and nominated to large combined-cycle gas turbine generators rather than combusted in small engines.

Arroyo's own opinion is that subsidizing two small, uncompetitively priced dairy-based generators by having ratepayers pay them [redacted] more than what would be paid at the marginal winning price of PG&E's last RPS solicitation is not justified by the societal benefit of demonstrating this technology. Dairy waste-fueled generation has been already demonstrated elsewhere in California and the world, at larger scale. Policymakers who place a greater premium than Arroyo does on the societal benefits of demonstrating dairy-based biogas generation yet again in California might conclude that the [redacted] ratepayer subsidy above competitive market prices is worth it.

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