

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3298



May 19, 2014

**Advice Letters 4299-E, 4300-E, and 4301-E**

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

**Subject: Renewables Portfolio Standard Purchase and Sale Agreements with Sterling Planet, LLC, Iberdrola Renewables, LLC, and NextEra Energy Power, LLC.**

Dear Mr. Cherry:

Pacific Gas and Electric's Advice Letters (ALs) 4299-E, 4300-E, 4301-E are rejected effective May 1, 2014. California Public Utilities Commission Resolution E-4649 addressing ALs 4299-E, 4300-E, and 4301-E was rejected by a vote of the Commissioners. The three purchase and sale agreements with Sterling Planet, LLC, Iberdrola Renewables, LLC, and NextEra Energy Power, LLC will not receive cost recovery.

Sincerely,

A handwritten signature in dark ink, appearing to read "ER", with a long horizontal stroke extending to the right.

Edward F. Randolph, Director  
Energy Division

cc: Donald Lafrenz  
Kayode Kajopaie  
Judith Iklé  
Paul Douglas

October 10, 2013

**Advice 4300-E**

(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

**Subject: Purchase and Sale Agreement for the Procurement of Eligible Renewable Energy Credits between Iberdrola Renewables, 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 a new Purchase and Sale Agreement ("PSA") between PG&E and Iberdrola Renewables, LLC ("Iberdrola").

The PSA is for Renewables Portfolio Standard ("RPS")-eligible unbundled Renewable Energy Credits ("RECs" or "Product") from Eligible Renewable Energy Resources (as such term is defined in the Public Utilities Code Section 399.12 or Section 399.16) ("ERR"). The PSA has duration (i.e., contractual term) of ten years.

PG&E requests that the Commission issue a resolution no later than April 2014, approving the PSA and containing the findings as set forth in Section V below.

**B. Subject of the advice letter****1. Project name**

This PSA is for the purchase of RECs created by any ERR certified electric generation facility that has obtained California Energy Commission ("CEC") Certification and Verification for compliance with the California RPS. A non-exclusive list of projects ("Project") that may supply the Product is provided in Appendix III of the PSA. The PSA is included as confidential Appendix F to this advice letter. These RECs will be transferred to PG&E via delivery to PG&E's WREGIS account.

**2. Technology (including level of maturity)**

Under the PSA, Iberdrola may provide the Product from any CEC-certified ERR whose output qualifies under California's RPS, as set forth in D.00-08-028 and as may be modified by subsequent decision of the Commission or by subsequent legislation.

**3. General Location and Interconnection Point**

The Product may be produced from any CEC-certified ERR.

**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 Product may be produced from any CEC-certified ERR. The PSA is with Iberdrola Renewables, LLC.

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

The Product may be produced from any CEC-certified ERR.

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

The PSA is a result of bilateral negotiations. PG&E has included Confidential Appendices A through H and Public Appendix C-2, which demonstrate the reasonableness of the PSA. As discussed below, PG&E requests confidential treatment for the information contained in Appendices A through H. PG&E requests that the Commission issue a resolution no later than April 2014, approving the PSA in its entirety, all payments to be made by PG&E under the PSA, and containing the findings required by the definition of CPUC Approval adopted by Decision (“D.”)07-11-025 and D.08-04-009.<sup>1</sup>

**C. General Project(s) Description**

Project Names	N/A – any CEC-certified ERR whose output qualifies under California’s RPS
Technology	N/A – No specific technology required
Capacity (MW)	N/A
Capacity Factor	N/A
Expected Generation (GWh/Year)	Year 1: 136,000 RECs Years 2-10: 1,500 RECs per year
Initial Commercial Operational Date	N/A – any CEC-certified ERR whose output qualifies under California’s RPS
Date contract Delivery Term begins	Upon initial delivery of

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

	Product to Buyer
Delivery Term (Years)	10
Vintage (New / Existing / Repower)	N/A – any CEC-certified ERR whose output qualifies under California’s RPS
Location (city and state)	N/A – any CEC-certified ERR whose output qualifies under California’s RPS
Control Area (e.g., CAISO, BPA)	N/A – REC transaction; no delivery of energy
Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI) <sup>2</sup>	N/A
Type of cooling, if applicable	N/A

#### **D. Project location**

##### **1. Provide a general map of the generation facility’s location**

Not applicable. The Product can be provided from any CEC-certified ERR whose output qualifies under California’s RPS.

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

Not applicable. The Product can be provided from any CEC-certified ERR whose output qualifies under California’s RPS.

#### **E. General Deal Structure**

##### **Describe general characteristics of contract, for example:**

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

The PSA is for RPS-eligible unbundled RECs and satisfies the criteria for the portfolio content category specified in Section 399.16(b)(3) (hereinafter “Portfolio Content Category Three”).

##### **2. Partial/full generation output of facility**

The Product may be produced from any CEC-certified ERR and may reflect only part of a given ERR’s output.

##### **3. Any additional products, e.g. capacity**

There are no additional products contracted for under the PSA.

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<sup>2</sup> Information about RETI is available at: <http://www.energy.ca.gov/reti/>

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

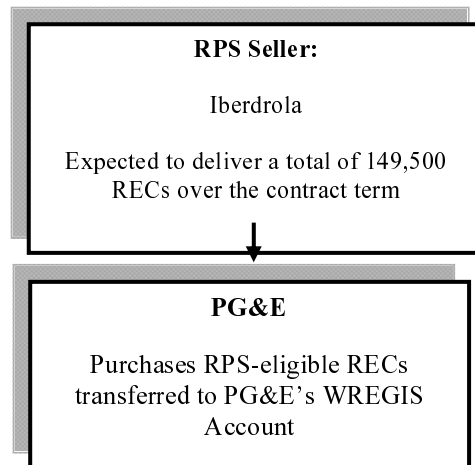
Not applicable. The PSA is a REC-only transaction with no delivery of energy.

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

There is no firming or shaping associated with this PSA.

#### 6. Diagram and explanation of delivery structure

**Figure 1: Delivery Structure of the PSA**



### 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. Through the purchase of RECs, the PSA provides a revenue stream to ERRs that may help to keep these resources operating safely and reliably.

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

Senate Bill ("SB") 1078 established the California RPS Program, requiring an electrical corporation to increase its use of eligible renewable energy resources to 20 percent of total retail sales no later than December 31, 2017. The legislature subsequently accelerated the RPS goal to reach 20 percent by the end of 2010. In April 2011, Governor Brown signed into law SB 2 1X. As implemented by D.11-12-020, SB 2 1X requires retail sellers of electricity to meet the following RPS procurement quantity requirements beginning on January 1, 2011:

- An average of twenty percent of the combined bundled retail sales during the first compliance period (2011-2013).
- Sufficient procurement during the second compliance period (2014-2016) that is consistent with the following formula:  $(.217 * 2014 \text{ retail sales}) + (.233 * 2015 \text{ retail sales}) + (.25 * 2016 \text{ retail sales})$ .
- Sufficient procurement during the third compliance period (2017-2020) that is consistent with the following formula:  $(.27 * 2017 \text{ retail sales}) + (.29 * 2018 \text{ retail sales}) + (.31 * 2019 \text{ retail sales}) + (.33 * 2020 \text{ retail sales})$ .
- 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")<sup>3</sup>, 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 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.

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 calculations show a slight surplus in the third compliance period, 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.

As indicated in its 2012 Renewable Procurement Plan and Draft 2013 Renewable Procurement Plan, PG&E intends to moderately procure long-term resources over the next several years to ensure that it can reach, and sustain, the 33% RPS targets. Although surplus banked RPS procurement ("Bank") is included in PG&E's RNS, PG&E does not plan to significantly

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

diminish the Bank by relying on it to meet its long-term, sustained net short position. Rather, PG&E views the Bank as a voluntary margin of procurement necessary to manage a post-2020 operating portfolio of 33%.

The Bank (1) mitigates risks associated with variability in load; (2) protects against PG&E failing to meet its RPS compliance targets due to project failure or delay exceeding forecasts; and (3) eliminates the need at this time to intentionally procure long-term contracts above the 33% target by utilizing the Bank to manage the year-to-year variability from performing RPS resources. Methods to build and maintain this Bank include, but are not limited to, (1) purchasing long-term RECs such as the PSA described herein, (2) purchasing long-term bundled renewable volumes through its RPS solicitations, (3) entering into new contracts with existing renewable facilities for which PG&E has expiring renewable contracts, as appropriate, and (4) selling excess RPS product that can be counted as surplus procurement and banked for future use, as appropriate and practical.

This PSA will contribute to PG&E's Bank with the purpose of ensuring PG&E's 33-percent-by-2020 RPS goal and also will contribute to California's renewable energy goals in the years beyond 2020. Based on a procurement strategy to maintain a Bank to manage a post-2020 operating portfolio of 33%, PG&E presents an analysis in Appendix H to this Advice Letter that evaluates both PG&E's need for a Bank and the type of RPS compliance product to procure.

In Appendix H, PG&E first evaluates its need for a Bank by introducing variability into its deterministic RPS delivery forecast using Monte Carlo analysis. In the past, only explicit renewable net short ("RNS") results have been provided. Year-to-year variation in retail sales, RPS generation or project viability may cause PG&E to be unexpectedly short or have a thin margin in meeting its statutory RPS procurement requirements. Having a Bank to protect against such shortfalls provides procurement flexibility that puts PG&E in a much better position to avoid inefficient and potentially expensive procurement. Examples include needing to procure short-term products<sup>4</sup> or long-term products with near-term start dates, which could be very expensive relative to other RPS products.

Secondly in Appendix H, PG&E describes important factors in PG&E's decision making process that are difficult to quantify but augment the quantitative results from the need analysis in Appendix H and Least-Cost Best-Fit analysis in Appendix A and D. This augmentation includes examining the Portfolio Content Category Three offering—as described in the PSA—as a fleeting and economically beneficial opportunity to contribute to PG&E's Bank in anticipation of future need as described in the first section of Appendix H.

The results of the analysis demonstrate why maintaining a substantial Bank is needed in order to reduce the probability of non-compliance or of having too small of a Bank. Irrespective of need, the PSA has a high probability of producing an expected net benefit for PG&E's customers.

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<sup>4</sup> Short-term products would involve a separate risk of not being bankable if the portfolio ends up with any surplus RPS volumes.

Table 1: Renewable Net Short Calculation as of September 2013

Net Short Calculation Using PG&E Bundled Retail Sales Forecast In Near Term (2013 - 2017) and LTPP Methodology (2018 - 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 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)	14,580	14,511	17,461	22,206	23,770	24,112	25,346	24,270	23,795	23,164	22,724	20,399	20,071	19,797	19,680	19,070	18,735	18,626	18,026	17,960
4	Annual RPS Position (%)	19.5%	19.0%					32.3%	31.7%	31.0%	30.1%	29.5%	26.4%	25.9%	25.5%	25.3%	24.5%	24.0%	23.8%	23.0%	22.9%
5	Gross Surplus/(Deficit) compared to Annual Targets* (GWh)	(393)	(730)					4,133	2,055	21	(2,232)	(2,723)	(5,099)	(5,478)	(5,803)	(5,971)	(6,633)	(7,019)	(7,180)	(7,831)	(7,949)
6	Non-Bankable Volumes (GWh)	0	15					99	11	9	0	0	0	0	0	0	0	0	0	0	0
7	Volumes (Banked) or Withdrawn from Bank (GWh)	0	0					(4,034)	(2,044)	(13)	2,232	2,723	5,099	5,478	5,803	1,869	0	0	0	0	0
8	Net Surplus/(Deficit) (GWh)	(393)	(730)					99	11	9	0	0	0	0	0	(4,102)	(6,633)	(7,019)	(7,180)	(7,831)	(7,949)
9	Net Annual RPS Positions (%) with Use of Bank	19.5%	19.0%					27.1%	29.0%	31.0%	33.0%	33.0%	33.0%	33.0%	33.0%	27.7%	24.5%	24.0%	23.8%	23.0%	22.9%
10	Cumulative Banked Volumes (GWh)	0	0				17,114	21,148	23,192	23,205	20,973	18,249	13,150	7,672	1,869	0	0	0	0	0	0
11	Forecast Failure Rate (%) for New Projects not yet online	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
12	Forecast Failure Rate (%) for Existing Generation	1.7%	0.0%	0.8%	0.7%	0.5%	0.5%	0.4%	0.4%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Current Expected Need Scenario (Compliance Period)

		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
13	Compliance Period Requirement	20.0%			23.3%			30.0%				33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
14	Voluntary Margin of Procurement (GWh)	0			0			0				0	0	0	0	0	0	0	0	0	0
15	Aggregate Volumes (GWh)	46,552			70,087			96,576				22,724	20,399	20,071	19,797	19,680	19,070	18,735	18,626	18,026	17,960
16	RPS Position (%)							31.3%				29.5%	26.4%	25.9%	25.5%	25.3%	24.5%	24.0%	23.8%	23.0%	22.9%
17	Gross Surplus/(Deficit) (GWh)							3,977				(2,723)	(5,099)	(5,478)	(5,803)	(5,971)	(6,633)	(7,019)	(7,180)	(7,831)	(7,949)
18	Non-Bankable Volumes (GWh)							118				0	0	0	0	0	0	0	0	0	0
19	Volumes (Banked) or Withdrawn from Bank (GWh)							(3,859)				2,723	5,099	5,478	5,803	1,869	0	0	0	0	0
20	Net Surplus/(Deficit) (GWh)							118				0	0	0	0	(4,102)	(6,633)	(7,019)	(7,180)	(7,831)	(7,949)
21	Net RPS Positions (%)							30.0%				33.0%	33.0%	33.0%	33.0%	27.7%	24.5%	24.0%	23.8%	23.0%	22.9%
22	Cumulative Banked Volumes (GWh)									17,114		20,973				18,249	13,150	7,672	1,869	0	0
23	Forecast Failure Rate (%) for New Projects not yet online	0%			0%			0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
24	Forecast Failure Rate (%) for Existing Generation	0.8%			0.6%			0.3%				0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

25	Total RPS Risk Adjusted Net Short (2011-2030) (GWh)	(40,712)
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\* 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 2018 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.

\*\*\* While PG&E considers an adequate bank of surplus RPS procurement to be a voluntary margin of procurement, PG&E assesses the need for incremental procurement for the bank qualitatively based upon factors described more fully in the RPS Plan. Accordingly, PG&E has not quantified incremental volumes of RPS procurement associated with building and maintaining the bank in this Table.



Table 2: Alternate Renewable Net Short Calculation as of September 2013  
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 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)	14,580	14,511	17,461	22,206	23,770	24,112	25,346	24,270	23,795	23,164	22,724	20,399	20,071	19,797	19,680	19,070	18,735	18,626	18,026	17,960
4	Annual RPS Position (%)	19.5%	19.0%					32.3%	30.7%	29.9%	28.9%	28.1%	25.0%	24.4%	23.9%	23.5%	22.5%	21.9%	21.6%	20.7%	20.4%
5	Gross Surplus/(Deficit) compared to Annual Targets* (GWh)	(393)	(730)					4,133	1,327	(879)	(3,290)	(3,936)	(6,506)	(7,061)	(7,589)	(7,935)	(8,844)	(9,441)	(9,831)	(10,721)	(11,086)
6	Non-Bankable Volumes (GWh)	0	15					99	11	9	0	0	0	0	0	0	0	0	0	0	0
7	Volumes (Banked) or Withdrawn from Bank (GWh)	0	0					(4,034)	(1,317)	887	3,290	3,936	6,506	7,061	784	0	0	0	0	0	0
8	Net Surplus/(Deficit) (GWh)	(393)	(730)					99	11	9	0	0	0	0	(6,806)	(7,935)	(8,844)	(9,441)	(9,831)	(10,721)	(11,086)
9	Net Annual RPS Positions (%) with Use of Bank	19.5%	19.0%					27.1%	29.0%	31.0%	33.0%	33.0%	33.0%	33.0%	24.8%	23.5%	22.5%	21.9%	21.6%	20.7%	20.4%
10	Cumulative Banked Volumes (GWh)	0	0				17,114	21,148	22,465	21,577	18,287	14,351	7,844	784	0	0	0	0	0	0	0
11	Forecast Failure Rate (%) for New Projects not yet online	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
12	Forecast Failure Rate (%) for Existing Generation	1.7%	0.0%	0.8%	0.7%	0.5%	0.5%	0.4%	0.4%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Current Expected Need Scenario (Compliance Period)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
13 Compliance Period Requirement	20.0%			23.3%			30.0%			33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
14 Voluntary Margin of Procurement (GWh)	0			0			0			0	0	0	0	0	0	0	0	0	0	0
15 Aggregate Volumes (GWh)	46,552			70,087			96,576			22,724	20,399	20,071	19,797	19,680	19,070	18,735	18,626	18,026	17,960	
16 RPS Position (%)							30.4%			28.1%	25.0%	24.4%	23.9%	23.5%	22.5%	21.9%	21.6%	20.7%	20.4%	
17 Gross Surplus/(Deficit) (GWh)							1,291			(3,936)	(6,506)	(7,061)	(7,589)	(7,935)	(8,844)	(9,441)	(9,831)	(10,721)	(11,086)	
18 Non-Bankable Volumes (GWh)							118			0	0	0	0	0	0	0	0	0	0	
19 Volumes (Banked) or Withdrawn from Bank (GWh)							(1,173)			3,936	6,506	7,061	784	0	0	0	0	0	0	
20 Net Surplus/(Deficit) (GWh)							118			0	0	0	(6,806)	(7,935)	(8,844)	(9,441)	(9,831)	(10,721)	(11,086)	
21 Net RPS Positions (%)							30.1%			33.0%	33.0%	33.0%	24.8%	23.5%	22.5%	21.9%	21.6%	20.7%	20.4%	
22 Cumulative Banked Volumes (GWh)							17,114			18,287			14,351	7,844	784	0	0	0	0	0
23 Forecast Failure Rate (%) for New Projects not yet online	0%			0%			0%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
24 Forecast Failure Rate (%) for Existing Generation	0.8%			0.6%			0.3%			0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

25	Total RPS Risk Adjusted Net Short (2011-2030) (GWh)	(64,664)
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\* 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.

\*\* While PG&E considers an adequate bank of surplus RPS procurement to be a voluntary margin of procurement, PG&E assesses the need for incremental procurement for the bank qualitatively based upon factors described more fully in the RPS Plan. Accordingly, PG&E has not quantified incremental volumes of RPS procurement associated with building and maintaining the bank in this Table.

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

**Confidential Attachments:**

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

**Appendix B – 2012 RPS Solicitation Overview**

**Appendix C1 – Independent Evaluator Report (Confidential)**

**Appendix D – Contract Summary: Iberdrola Renewables, LLC**

**Appendix E – Comparison of the PSA to PG&E's 2012 Pro Forma REC Purchase and Sale Agreement**

**Appendix F – Iberdrola Renewables, LLC PSA**

**Appendix G – PSA's Contributions toward RPS Goals**

**Appendix H – PSA's Contribution to the Portfolio Content Category Three Usage Cap**

**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 2012 Renewable Procurement Plan ("2012 RPS Plan") was conditionally approved in D.12-11-016 on November 14, 2012. Consistent with the decision, PG&E submitted a final version of the 2012 RPS Plan on November 29, 2012.

**2. Describe the Procurement Plan’s assessment of portfolio needs.**

The goal of PG&E’s 2012 RPS Plan is to procure approximately 1,000 GWh per year of RPS-eligible deliveries offering high portfolio value through new long-term contracts. In addition, PG&E’s 2012 RPS Plan also assumes that it will use banked excess procurement primarily to provide a cushion 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 beyond. The Product serves that purpose and is 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 and beyond.

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

The Product does not impact PG&E’s goal to procure approximately 1,000 GWh per year of long-term bundled renewable energy products or RECs from ERRs in the 2012 RPS Solicitation. It supports the strategy to maintain a Bank and represents PG&E’s current approach to voluntarily maintain a margin of procurement to ensure ongoing compliance with the 33% RPS mandate. While the Product meets the qualifications of Portfolio Content Category Three, the PSA is long-term, meaning REC deliveries pursuant to the PSA will not reduce PG&E’s excess procurement that is eligible for banking and available for use to satisfy future compliance period 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 PSA conforms to PG&E’s Commission-approved 2012 RPS Plan, by helping to meet the long-term portfolio needs outlined in the 2012 RPS Plan. PG&E’s 2012 RPS Plan does state a preference that bundled RPS products delivering energy and capacity be at a delivery point assigned by the CAISO inside PG&E’s service territory. As a Portfolio Content Category Three product, the need to deliver energy and capacity are avoided and deliverability and locational issues become irrelevant. Finally, the PSA is competitive when compared to the other bids submitted in the 2012 RPS 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 PSA resulted from bilateral negotiations between PG&E and Iberdrola. 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.<sup>5</sup> The Commission noted that it would be developing evaluation criteria for bilateral contracts, but that the above four requirements would apply in the interim.<sup>6</sup>

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 PSA satisfies the requirements listed above and the requirements of D.09-06-050. The PSA is being submitted for approval via this Advice Letter. The PSA is not eligible for AMFs because it resulted from bilateral negotiations. The PSA term is longer than one month in duration. Finally, the PSA is reasonable when considered against the standards used for evaluating contracts resulting from PG&E’s 2012 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.**

PG&E discusses the results of the 2012 RPS Solicitation in the confidential Appendices. To confirm the prices received through offers and to solicit more volume, PG&E reached out to brokers and directly to suppliers for bilateral offers. PG&E received a direct offer from Iberdrola as a result of this outreach.

**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.**

Based on the offers in the 2012 RPS Solicitation, parties appeared to focus more on offering bundled product offers.

To allow PG&E to use this Product for the first compliance period, transactions needed to be executed by the end of 2013 and approved in early 2014.<sup>7</sup> The timing for a subsequent solicitation will not meet these requirements.

**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**

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<sup>5</sup> Resolution E-4216 at 5.

<sup>6</sup> *Id.*

<sup>7</sup> See the Renewables Portfolio Standard Eligibility Guidebook, Seventh Edition at 92 (explaining that RECs cannot be claimed for RPS compliance before the contract execution and or ownership agreement date).

PG&E filed its 2012 RPS Shortlist Report on June 7, 2013 in Advice Letter 4238-E and a Supplement to the 2012 RPS Shortlist Report on July 10, 2013 in Advice Letter 4238-E-A. The 2012 Shortlist Report has, at the date of this filing, not formally been approved by the Commission.

The RPS statute requires PG&E to procure the “least-cost best-fit” (“LCBF”) eligible renewable resources.<sup>8</sup> The LCBF decision directs the utilities to use certain criteria in their bid ranking<sup>9</sup> and offers guidance regarding the process by which the utility ranks bids in order to select or “shortlist” the bids with which it will commence negotiations. PG&E’s approved process for identifying the LCBF renewable resources focuses on 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 PSA using the LCBF evaluation criteria from the 2012 RPS Solicitation. The general finding is that the PSA ranked favorably compared to the other projects received in PG&E’s 2012 RPS Solicitation. A more detailed discussion of PG&E’s evaluation of the PSA is provided in Confidential Appendix A.

### **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 PSA. PG&E’s analysis of the market value is confidential and addressed in Confidential Appendix A.

### **2. Portfolio Fit**

Portfolio fit considers how well an offer’s features match PG&E’s portfolio needs. PG&E evaluated the offer’s consistency with portfolio fit as described in the 2012 RPS Plan and Protocol and filed its initial 2012 RPS Shortlist Report on June 7, 2013.

The Portfolio Adjusted Value (“PAV”) intends to more accurately reflect the value of renewable resources to PG&E customers. Specifically, the PAV methodology starts with net market value results, which reflect the value of a transaction relative to market forward curves, as an initial quantitative valuation. Additional quantitative adjustments are then made for aspects of market valuation, transmission adder, and portfolio fit described herein and for other factors that impact the value of a transaction with respect to PG&E’s portfolio. Using PG&E’s PAV methodology for the 2012 RPS Solicitation, the offer compared favorably to the Portfolio Content Category Three offers received through the 2012 RPS Solicitation. Additional information about the PAV methodology is provided in Confidential Appendix A. However, PG&E notes that the PAV methodology was designed primarily to compare the relative value of bundled RPS products against each other. PAV analysis uses long-term forecasts of energy and capacity,

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<sup>8</sup> Pub. Util. Code § 399.14(a)(2)(B).

<sup>9</sup> D.04-07-029.

which can have forecast error. This is not as critical when comparing similar products (those providing energy, capacity and RECs) because the same forecast error will tend to be included across the products. That is not the case when comparing REC-only products to other product types, such as bundled RPS products.

PG&E's analysis of the PAV is confidential and addressed in Confidential Appendix 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.

The Product may be produced from any CEC-certified ERR, so the project viability calculator is not applicable for this PSA as further detailed in Confidential Appendix A.

### **4. RPS Goals**

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

### **5. Transmission Adder**

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

Given that there is no delivery of energy, there is no transmission adder included.

## **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 (“TREC”) were finalized in D.10-03-021, as modified by D.11-01-025. The non-modifiable standard terms and conditions in the PSA 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 PSAs:

<b>Non-Modifiable Term</b>	<b>PSA Section No.</b>	<b>PSA Page No.</b>
STC 17: Applicable Law	Article Seven	26
STC REC-1: Transfer of renewable energy credits	2.7(c)	15
STC REC-2: Tracking of RECs in WREGIS	2.9(iv)	17
STC REC-3: CPUC Approval	1.20	3

**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 PSA with PG&E’s 2012 Pro Forma REC PSA is provided in Confidential Appendix E.

Comparisons of the modifiable terms in the PSA against the modifiable terms in PG&E’s 2012 REC PSA form in the Solicitation Protocol dated November 29, 2012, is provided in Confidential Appendix E.

**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 PSA satisfies the upfront showing required for Portfolio Content Category Three.

**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.

Decision (“D”) 11-12-052 requires that IOUs make an upfront showing related to the categorization of each proposed RPS procurement transaction. Specifically contracts meeting the criteria of Portfolio Content Category Three are eligible renewable energy resource

electricity products, including unbundled renewable energy credits, that do not qualify under Portfolio Content Category One or Two.<sup>10</sup>

The Product purchased pursuant to the PSA meets the upfront showing required for Portfolio Content Category Three because it is an unbundled renewable energy credit. Therefore, the RPS-eligible procurement from the PSA satisfies the criteria for Portfolio Content Category Three 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 PSA would not be classified as Portfolio Content Category Three.

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

- a. Contract is classified as claimed**
- b. Contract is not classified as claimed**

The value of the PSA, as described and assessed in this Advice Letter, is based on the assumption that the procurement meets the criteria of Portfolio Content Category Three.

**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 PSA is a long-term 10-year contract that does 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.

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<sup>10</sup> See D.11-12-052 at 56 (explaining that an IOU's upfront showing for approval of procurement contracts that would fit within Portfolio Content Category Three must be sufficient for the Commission to determine that the electricity was generated by an RPS-eligible facility).



**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 PSA under the “Fast Track” process.

**H. Temporary Price Cap for REC Contracts**

The REC price is below the temporary price cap of \$50 per REC.

**I. Interim Emissions Performance Standard**

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

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

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

To implement SB 1368, in D.07-01-039, the Commission adopted an EPS that applies to contracts for a term of five or more years for baseload generation with an annualized plant capacity factor of at least 60 percent. In other words, the statute and D.07-01-039 appear to apply only to contracts for procurement of energy, not REC-only transactions. Though D.07-01-039 does not explicitly address the interaction between EPS compliance and REC-only transactions, the Commission distinguished the transfer of RECs from the GHG emissions rate associated with the renewable facility and found that “RECs would not have any value for EPS compliance under our rules.”<sup>11</sup>

Therefore, the PSA is not covered procurement subject to the EPS because it does not involve procurement of electric energy.

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.

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<sup>11</sup> D.07-01-039 at 124.

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.

#### **J. 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 PSA was presented to the PRG on August 13, 2013. Additional information is provided in Confidential Appendix A.

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.

#### **K. Independent Evaluator (IE)**

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

1. **Name of IE**
2. **Describe the oversight provided by the IE.**

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

**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 participated in the presentation on August 13, 2013.

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

The detailed findings of the IE regarding the PSA are contained in Confidential Appendix C1 and Public Appendix C2.

### **III. Project Development Status**

The RPS Solicitation Advice Letter Template ("Template") requires various Project information (*e.g.*, company/development team, technology, development milestones, permitting/certification status, transmission, financing plan, etc.). This PSA does not require RECs to be generated from any specific generating facility or facility type. Accordingly, no further information is provided in this section.

### **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 PSA includes certain performance criteria and milestones. These and other contingencies and milestones are addressed in Confidential Appendices A and D.

### **V. REQUEST FOR COMMISSION APPROVAL**

PG&E requests that the Commission issue a resolution no later than April 2014 that:

1. Approves the PSA in its entirety, including payments to be made by PG&E pursuant to the PSA, subject to the Commission's review of PG&E's administration of the PSA.
2. Finds that any procurement pursuant to the PSA 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 PSA shall be recovered in rates.

4. Adopts the following finding of fact and conclusion of law in support of CPUC Approval:
  - a. The PSA is consistent with PG&E's 2012 RPS Procurement Plan.
  - b. The terms of the PSA are reasonable.
5. Adopts the following finding of fact and conclusion of law in support of cost recovery for the PSA:
  - a. The utility's costs under the PSA shall be recovered through PG&E's Energy Resource Recovery Account.
  - b. Any stranded cost that may arise from the PSA 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 PSA is not a form of covered procurement subject to the EPS, because it does not involve procurement of electric energy.
7. Adopts a finding of fact and conclusion of law that deliveries from the PSA shall be categorized as procurement under the portfolio content category specified in Section 399.16(b)(3), subject to the Commission's after-the-fact verification that all applicable criteria have been met.
8. Adopts a finding of fact and conclusion of law that the PSA is not a short term contract subject to Conclusion of Law 27 of D.12-06-038.

**Protests:**

Anyone wishing to protest this filing may do so by sending a letter by **October 30, 2013**, which is **20** days from the date of this filing. The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. Protests should be mailed to:

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

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

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

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

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

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

**Effective Date:**

PG&E requests that the Commission issue a resolution approving this Tier 3 advice filing by April 2014.

**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](mailto: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](mailto:Process_Office@cpuc.ca.gov). Advice letter filings can also be accessed electronically at <http://www.pge.com/tariffs>.

Handwritten signature of Brian Cherry in cursive, followed by the letters "/IG".

Vice President – Regulatory Relations

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

**Limited Access to Confidential Material:**

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

Declaration Seeking Confidential Treatment regarding the confidential information is filed concurrently herewith.

**Confidential Attachments:**

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**Public Attachment**

**Appendix C2 – Independent Evaluator Report (Public)**

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## ADVICE LETTER FILING SUMMARY ENERGY UTILITY

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

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

Utility type:

☒ ELC

☐ GAS

☐ PLC

☐ HEAT

☐ WATER

Contact Person: Igor Grinberg

Phone #: (415) 973-8580

E-mail: ixg8@pge.com and PGETariffs@pge.com

### EXPLANATION OF UTILITY TYPE

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: **4300-E**

Tier: **3**

Subject of AL: **Purchase and Sale Agreement for the Procurement of Eligible Renewable Energy Credits between Iberdrola Renewables, 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 #: N/A

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: Charles Post (415) 973-9286

Resolution Required? ☒ Yes ☐ No

Requested effective date: **April 2014**

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., 4<sup>th</sup> Flr.**

**San Francisco, CA 94102**

**E-mail: EDTariffUnit@cpuc.ca.gov**

**Pacific Gas and Electric Company**

**Attn: Brian Cherry**

**Vice President, Regulatory Relations**

**77 Beale Street, Mail Code B10C**

**P.O. Box 770000**

**San Francisco, CA 94177**

**E-mail: PGETariffs@pge.com**

**DECLARATION OF CHARLES POST  
SEEKING CONFIDENTIAL TREATMENT  
FOR CERTAIN DATA AND INFORMATION  
CONTAINED IN ADVICE LETTER 4300-E  
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)**

I, Charles Post, declare:

1. I am presently employed by Pacific Gas and Electric Company ("PG&E"), and have been an employee at PG&E since 2000. My current title is Principal within PG&E's Energy Procurement organization. In this position, my responsibilities include negotiating PG&E's Renewables Portfolio Standard Program ("RPS") Power Purchase Agreements. In carrying out these responsibilities, I have acquired knowledge of PG&E's contracts with numerous counterparties and have also gained knowledge of the operations of electricity sellers in general. Through this experience, I have become familiar with the type of information that would affect the negotiating positions of electricity sellers with respect to price and other terms, as well as with the type of information that such sellers consider confidential and proprietary.

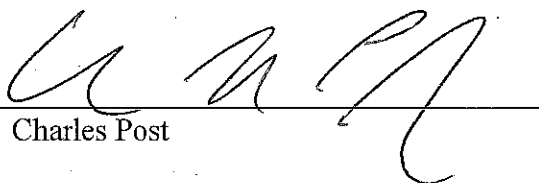
2. Based on my knowledge and experience, and in accordance with Decision ("D.") 08-04-023 and the August 22, 2006 "Administrative Law Judge's Ruling Clarifying Interim Procedures for Complying with Decision 06-06-066," I make this declaration seeking confidential treatment of the gray-shaded portion of Advice Letter 4300-E, as well as Appendices A, B, C1, D, E, F, G, and H in their entirety to PG&E's Advice Letter 4300-E submitted on October 10, 2013. By this Advice Letter, PG&E is seeking this Commission's approval of a Purchase and Sale Agreement that PG&E has executed with Iberdrola Renewables, LLC.

3. Attached to this declaration is a matrix identifying the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is seeking to protect constitutes the particular type of data and information listed in Appendix 1 of



D.06-06-066 and Appendix C of D.08-04-023 (the "IOU Matrix"), and/or constitutes information that should be protected under General Order 66-C. The matrix also specifies the category or categories in the IOU Matrix to which the data and information corresponds, if applicable, and why confidential protection is justified. Finally, the matrix specifies that: (1) PG&E is complying with the limitations specified in the IOU Matrix for that type of data or information, if applicable; (2) the information is not already public; and (3) the data cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. By this reference, I am incorporating into this declaration all of the explanatory text in the attached matrix that is pertinent to this filing.

I declare under penalty of perjury, under the laws of the State of California, that to the best of my knowledge the foregoing is true and correct. Executed on October 10, 2013 at San Francisco, California.



Charles Post

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)**  
**Advice Letter 4300-E**  
**October 10, 2013**

**IDENTIFICATION OF CONFIDENTIAL INFORMATION**

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix. 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 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
<b>Document: Advice Letter 4300-E</b>							
Appendix A	Y	<p>Item VII G) Renewable Resource Contracts under RPS program – Contracts without SEPs.</p> <p>Item VII (un-numbered category following VII G)) Score sheets, analyses, evaluations of proposed RPS projects.</p> <p>Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.</p> <p>General Order 66-C.</p>	Y	Y	Y	<p>These Appendices contain bid information and evaluations from the 2012 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.</p> <p>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&amp;E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparties.</p>	<p>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).</p> <p>For information covered under Item VII (un-numbered category following VII G), remain confidential for three years.</p> <p>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.</p> <p>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.</p> <p>For information covered under General Order 66-C, remain confidential.</p>

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)**  
**Advice Letter 4300-E**  
**October 10, 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 2012 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 4300-E**  
**October 10, 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	<p>This Appendix contains bid information and evaluations from the 2012 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.</p> <p>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&amp;E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparty.</p>	<p>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).</p> <p>For information covered under Item VII (un-numbered category following VII G), remain confidential for three years.</p> <p>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.</p> <p>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.</p> <p>For information covered under General Order 66-C, remain confidential.</p>

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)**  
**Advice Letter 4300-E**  
**October 10, 2013**

**IDENTIFICATION OF CONFIDENTIAL INFORMATION**

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, as appended 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 D	Y	Item VII G) Renewable Resource Contracts under RPS program - Contracts without SEPs.  Item VII (un-numbered category following VII G) Score sheets, analyses, evaluations of proposed RPS projects.  Item VIII A) Bid information and B) Specific quantitative analysis involved in scoring and evaluation of participating bids.  General Order 66-C.	Y	Y	Y	<p>These Appendices contain bid information and evaluations from the 2012 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.</p> <p>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&amp;E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparty.</p>	<p>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).</p> <p>For information covered under Item VII (un-numbered category following VII G), remain confidential for three years.</p> <p>For information covered under Item VIII A), remain confidential until after final contracts submitted to CPUC for approval.</p> <p>For information covered under Item VIII B), remain confidential for three years after winning bidders selected.</p> <p>For information covered under General Order 66-C, remain confidential.</p>

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)**  
**Advice Letter 4300-E**  
**October 10, 2013**

**IDENTIFICATION OF CONFIDENTIAL INFORMATION**

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Appendix E	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 F	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.

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)**  
**Advice Letter 4300-E**  
**October 10, 2013**

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Appendix II	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

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REPORT OF THE INDEPENDENT  
EVALUATOR ON A BILATERAL CONTRACT  
WITH IBERDROLA RENEWABLES, LLC

OCTOBER 4, 2013

# TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
1. ROLE OF THE INDEPENDENT EVALUATOR.....	5
2. ADEQUACY OF OUTREACH TO PARTICIPANTS AND ROBUSTNESS OF SOLICITATION.....	9
3. FAIRNESS OF OFFER EVALUATION AND SELECTION METHODOLOGY.....	18
4. FAIRNESS OF HOW PG&E ADMINISTERED THE OFFER EVALUATION AND SELECTION PROCESS.....	32
5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS.....	60
6. MERIT FOR CPUC APPROVAL.....	68

# EXECUTIVE SUMMARY

This report provides an independent evaluation of the process by which the Pacific Gas and Electric Company (“PG&E”) negotiated and executed a Renewable Energy Credit (REC) Purchase and Sales Agreement (PSA) with Iberdrola Renewables, LLC (“Iberdrola”) for delivery of unbundled RECs. Iberdrola Renewables, LLC is a subsidiary of Iberdrola Renovables, S.A. of Spain, itself a subsidiary of Iberdrola, S.A., a diversified global utility holding company.

The PSA originated in an approach by PG&E to potential sellers of RECs in or about May 2013. In February 2013 PG&E received Offers [REDACTED] to sell Category 3 RECs as part of the utility’s 2012 Renewables Portfolio Standard (RPS) Request for Offers (RFO). While PG&E chose to select [REDACTED] for its RFO short list, the utility had indications from market sources that similar REC contracts might be available at more competitive pricing. An independent evaluator (IE), Arroyo Seco Consulting (Arroyo), conducted activities to review and assess PG&E’s processes as the parties bilaterally negotiated a REC PSA.

The structure of this report follows the 2012 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 2012 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;<sup>1</sup>
- Fairness of project-specific negotiations; and
- Merit of the PSA for CPUC approval.

Arroyo’s opinion is that the negotiations between PG&E and Iberdrola were conducted in a manner fair to competitors. Specific concessions that PG&E provided to Iberdrola compared to the utility’s Form Agreement affected the IE’s opinion on project viability, an issue for ratepayer benefits.

Arroyo’s qualified opinion is that the contract likely ranks high in net valuation and low in contract price; a key qualification is that it is challenging to establish a reasonable set of

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<sup>1</sup> The first four chapters are taken directly from the IE report prepared in June 2013 that accompanied PG&E’s short list for its 2012 RPS solicitation. Subsequently PG&E submitted a supplemental filing in July 2013 that corrected certain errors in Arroyo’s original report.

comparable transactions or proposals as a basis for ranking. Arroyo's assessment is that the portfolio fit of the Iberdrola PSA with PG&E's compliance needs ranks as low, and that its project viability is indeterminate and cannot be ranked at this point in time. Arroyo's opinion is that the bilateral transaction likely merits CPUC approval based on the apparently low pricing and high net value, but the IE has some reservations about other attributes of the contract including its portfolio fit and project viability.

# 1. ROLE OF THE INDEPENDENT EVALUATOR

Pacific Gas and Electric Company issued a Request for Offers (RFO) on December 10, 2012, a competitive solicitation for power generation qualifying as eligible renewable energy resources (ERRs) under the California Renewables Portfolio Standard Program. 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. In its solicitation protocol for the 2012 RPS RFO, PG&E announced its intent to procure approximately 1.25% of its retail sales volume through the 2012 process, or about 1,000 GWh annually.<sup>2</sup>

The CPUC had conditionally approved PG&E's 2012 RPS procurement plan in its Decision 12-11-016 issued on November 14, 2012. This chapter elaborates on the prior CPUC decisions that form the basis for an Independent Evaluator's participation in the 2012 RPS RFO, describes key roles of the IE, details activities undertaken by the IE in this solicitation to fulfill those roles, and identifies the treatment of confidential information.

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## A. CPUC DECISIONS REQUIRING INDEPENDENT EVALUATOR PARTICIPATION

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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. This document represents that shortlisting report for PG&E's 2012 renewable solicitation.

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<sup>2</sup> Pacific Gas & Electric Company, "Renewables Portfolio Standard: 2012 Solicitation Protocol", November 29, 2012, page 5.

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

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To comply with the requirements ordered by the CPUC, PG&E retained Arroyo Seco Consulting to serve as IE for the 2012 RPS solicitation, 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."<sup>3</sup> More specifically, the Energy Division of the CPUC has provided a template to guide how IEs should report on the 2012 RPS competitive procurement process, outlining five specific issues that should be addressed:

- Describe the IE's role;
- Did the IOU do adequate outreach to participants, and was the solicitation robust?
- Was the IOU's LCBF methodology designed such that offers were fairly evaluated?
- Was the LCBF offer evaluation process fairly administered?
- Does the proposed RPS short list merit Commission approval?

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

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## **C. IE ACTIVITIES**

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To fulfill the role of evaluating PG&E's 2012 solicitation, several tasks were undertaken, both prior to Offer Opening and subsequently. Prior to the Offer Opening window of January 29 through February 6, 2013<sup>4</sup>, Arroyo performed several tasks to assess PG&E's methodology for evaluating Offers:

- Reviewed the solicitation and its attachments including PG&E's 2012 Form Agreements and description of the LCBF methodology and criteria.
- Examined the utility's non-public protocols detailing how PG&E would evaluate Offers against various criteria.

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<sup>3</sup> CPUC Decision 06-05-039, May 25, 2006, "Opinion Conditionally Approving Procurement Plans for 2006 RPS Solicitations, Addressing TOD Benchmarking Methodology", page 46.

<sup>4</sup> The solicitation protocol originally fixed January 29, 2013 at noon PST as the deadline for submitting Offers; subsequently PG&E extended this deadline to a window to submit Offers from January 29 to February 6, 2013 at 5:00 PST. The motivation for the change was the awkward timing in which Phase I interconnection reports for projects in the CAISO's Cluster 5 were expected to be issued on or around January 31. PG&E chose to accommodate sellers with such projects by allowing all Participants (not just those with Cluster 5 projects) to submit Offers within the window. Arroyo agreed that allowing all Participants to meet the later deadline seemed fair to both groups.

- Attended PG&E's Bidders' Webinar on December 20, 2012 to evaluate information provided to potential Participants, and how that information was distributed.
- Reviewed the list of registered attendees of the Bidders' Webinar against PG&E's master list of RFO contacts (used for outreach to potential Participants).
- Checked the posting of questions and answers from the Bidders' Webinar on PG&E's public website to see whether information that was made available in-person to conference attendees was also provided to other potential Participants.
- Examined PG&E's 2012 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 2012 version of the utility's LCBF methodology and its inputs, with a focus on the use of PG&E's Portfolio-Adjusted Valuation ("PAV") method, which the CPUC for the first time authorized PG&E to employ in selecting Offers in the 2012 solicitation.

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 nearly all Offers.<sup>5</sup> The IE took an electronic copy of each Offer package, and independently built a database for tracking Offers.
- Observing discussions of the PG&E evaluation team about additional information that should be requested from individual Participants to address material deficiencies, such as missing interconnection studies, to ensure that each Offer included sufficient information to complete an evaluation and to minimize the number of Offers disqualified as non-conforming to the requirements of the solicitation protocol.
- Reviewing the outbound correspondence ("deficiency letters") to Participants identifying issues with the completeness of the Offers and requesting clarification or additional information. Arroyo monitored other e-mail communications between PG&E and Participants to check for fairness in how information was provided.
- Reading portions of each Offer. Arroyo focused on offer forms stating project descriptions and price and on text descriptions relevant to project viability.
- Observing PG&E evaluation team discussions about which Offers to disqualify for nonconformance with the requirements of the Solicitation Protocol, and why.

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<sup>5</sup> Because Offers trickled in to PG&E's General Office over the course of several business days during the window for Offer opening, the IE did not observe all Offer packages being opened but instead was present on the first and last days of the window, when nearly all the Offers arrived.

- Spot-checking Offer-specific data inputs to PG&E's valuation model, including assignments to Locational Marginal Price (LMP) zones.
- Building an independent valuation model (and its inputs) 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, an independent valuation was useful for testing the robustness of 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.

Arroyo's focus going forward will be on assessing the fairness of project-specific negotiations for shortlisted Offers and the merit of individual agreements.

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#### **D. TREATMENT OF CONFIDENTIAL INFORMATION**

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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",<sup>6</sup> vs. public treatment (after submittal of final contracts) of the total number of projects and megawatts bid by resource type. Where the IE's reporting on the fairness of PG&E's selection of Offers requires explicit discussion of such analyses, scores, and evaluations, these are redacted in the public version of this document.

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<sup>6</sup>California Public Utilities Commission, Decision 06-06-066, "Interim Opinion Implementing Senate Bill No. 1488, Relating to Confidentiality of Electric Procurement Data Submitted to the Commission", June 29, 2006, Appendix 1, page 17.



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

In its 2012 RPS solicitation, PG&E sought to meet a goal of procuring approximately 1.25% of retail load (or 1,000 GWh/year) by selecting Offers that will lead to some negotiated, executed contracts and to some new 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 fully competitive.

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### A. CLARITY AND CONCISION OF SOLICITATION MATERIALS

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PG&E's 2012 RPS solicitation protocol is modestly sized for a document of its type (it totals 33 pages excluding attachments, vs. SDG&E's 30 pages), and is more concise than protocols PG&E used in prior years. This is part because some of the bulky text specifying detailed requirements for Offers' contents has been shifted into Attachment J from the main body of the protocol. Arroyo regards this as an improvement over prior years.

Arroyo believes that the contents of PG&E's 2012 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. Here are a few observations about the clarity of the guidance provided in the protocol:

- Nearly all Offers were submitted as complete and conforming packages. The most common deficiency that needed to be remedied was a failure to include interconnection studies. This requirement was stated in two points within the solicitation protocol, so the fact that about a dozen Offers were submitted that failed to include the studies suggests that some Participants were inattentive. Perhaps greater emphasis needs to be placed on this specific requirement in future pre-offer conference presentations. Arroyo does not see how PG&E could have edited the solicitation protocol to make it plainer to see that this was a requirement.

The proportion of Offers that needed to be corrected for deficiencies in the offer packages was fairly modest and lower than in some prior years' renewable RFOs. This suggests that PG&E's solicitation materials were clear enough for the majority of Participants to understand and follow.

- The 2012 solicitation protocol stated some preferences of the utility:
  1. Offers that begin delivery in 2019 or 2020 (when the utility currently forecasts an RPS compliance need, in contrast to earlier years);

2. Projects considered bundled, in-state resources or out-of-state resources scheduled into a California balancing authority without substituting electricity from another source, or using a dynamic transfer agreement (“Category 1”), over projects whose output will be considered renewable energy credits (RECs) for RPS compliance purposes (“Category 3”) and over out-of-state resources whose output is shaped and firmed using substitute electricity and scheduled into a CAISO interface point (“Category 2”);
3. Among Category 2 Offers, a delivery pattern that is flat in all hours except with no off-peak delivery in the second quarter of each year;
4. Projects within the PG&E service territory, as opposed to sites within the territories of other utilities (CAISO participating members or otherwise);
5. Offers with a delivery term of ten to fifteen years, as opposed to longer or shorter delivery periods;
6. Projects that offer flexibility in scheduling generation, such as Offers that provide for buyer curtailment beyond the minimum requirements of PG&E’s Form Agreement.

Based on comments provided in feedback sessions after the RFO, it appeared that most Participants were aware of these stated preferences, with a small minority of developers having missed, for example, the preference for projects in PG&E’s service territory, or PG&E’s disinclination to select Offers with 25-year delivery terms. One exception was that it appeared that many Participants did not appreciate the fact, stated clearly in the public description of the evaluation methodology, that offering more than the minimum number of hours of buyer curtailment would increase their Offer’s valuation. This may be due to the novelty of the Portfolio-Adjusted Valuation methodology; repeated emphasis on this component of valuation may attract future Participants’ notice.

When the utility solicited feedback from non-shortlisted Participants after closing the solicitation, the sense of the commentary about the clarity of RFO materials was neutral to quite positive. Some developers indicated that PG&E’s written requirements were “fairly easy to follow” and that PG&E “did a great job in communications with Participants before, during, and after” the due date. The solicitation materials were characterized as “complete – we were not shooting in the dark”. There were far fewer complaints about the burdensome nature of preparing Offer packages than in PG&E’s prior RFOs, perhaps because some of the requirements have been pared down in the 2012 solicitation. Also, while some Participants struggled with entering their project data into the MS Excel offer form and had to seek guidance before the due date, this affected fewer developers than in prior years.

Overall, Arroyo believes that PG&E’s solicitation materials were clear and concise.

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## B. ADEQUACY OF OUTREACH

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

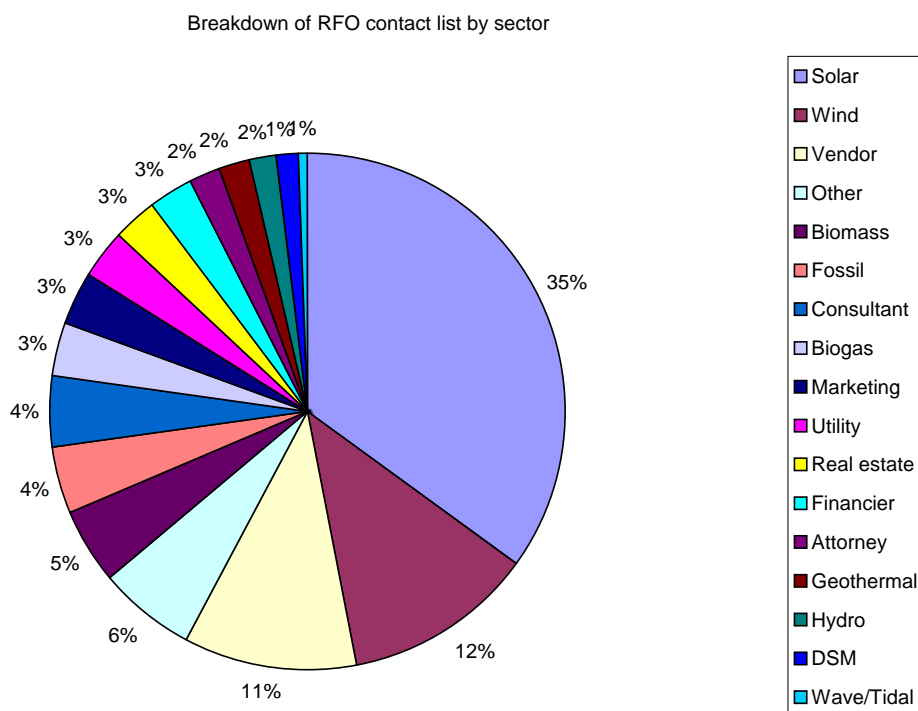
- How many individuals were contacted?
- To what extent were these contacts in companies that develop and/or own renewable power projects or market unbundled RECs?
- Was a diverse set of renewable technologies covered in the contacts, or was the outreach excessively focused on one or two technologies?
- 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 December 2012, PG&E had compiled a general contact list for use in publicizing its RFOs, totaling more than 1,900 individuals; this is an increase from the version of the list used in the 2011 RPS solicitation, with closer to 1,600 contacts. PG&E appears to have been actively compiling contacts for outreach, including sublists for the biogas industry, operators of combined heat and power facilities, and developers of smaller photovoltaic projects appropriate for the utility's solar photovoltaic and RAM RFOs.

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. The third largest segment of RFO contacts was composed of vendors, including equipment vendors and engineering and construction firms. The fourth largest segment was made up of individuals that Arroyo classified as "Other", including regulators, municipal government staff, non-profit associations, transmission developers, and individuals and firms with no obvious direct connection to any specific sector of the renewable power generation industry, such as potato chip manufacturers. Figure 1 displays the estimated shares by industry sector of these contacts.

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 contacts represented organizations that could develop renewable generation or sell from existing facilities, or market RECs. Other contacts were with entities that provide services to renewable energy developers, such as attorneys, financing providers, consultants, and equipment vendors; it is unclear whether these providers sought inclusion on PG&E's RFO contact list in order to keep abreast of the solicitation or to develop business with renewable energy developers.

Figure 1. Composition of RFO contact list



PG&E did not issue a press release to announce the issuance of the 2012 RPS RFO. News of the solicitation was picked up and reported in the electric power trade press, including Megawatt Daily; journalistic reportage of the release of the RFO was less widespread than in prior years. Also, the detailed solicitation protocol and its attachments, the schedule, and other informational items were posted on PG&E's public website.

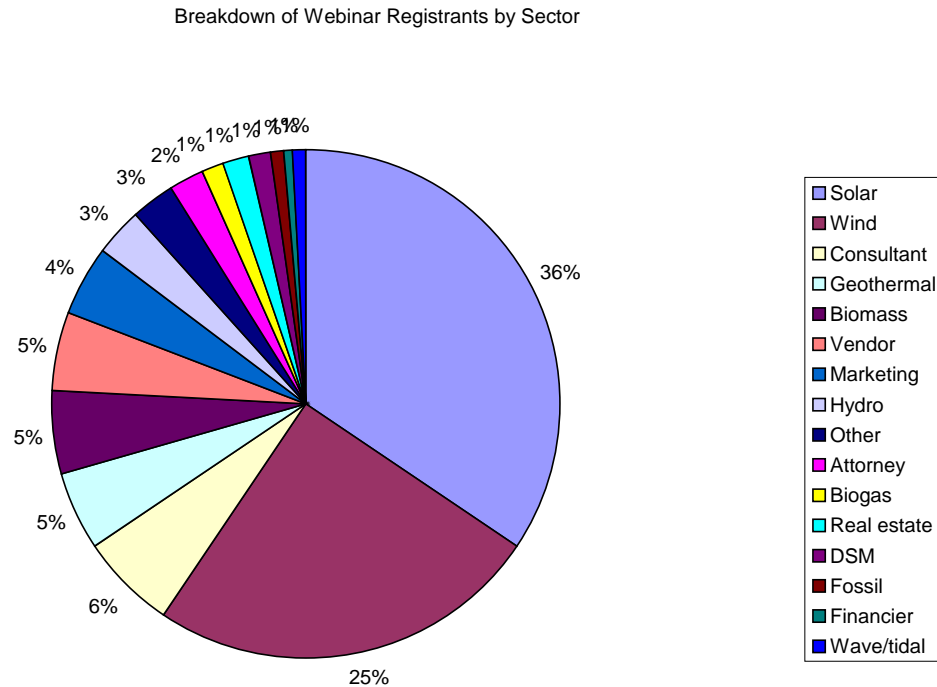
Arroyo notes that news of PG&E's RPS RFO was publicized not only in the trade press but also on the public websites of law firms whose practices include a focus on renewable energy contract law, such as Allen Matkins and Davis Wright Tremaine. The news of the RFO was also disseminated by the Geothermal 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 displays a count of organizations, by sector, with individuals who registered for the conference (some companies had several registrants). A turnout of 170 individual registrants and 167 actual attendees represents a strong response and expression of industry interest, though it is about one-third the number of registrations for the 2011 RPS RFO bidders' conference. The largest share of attendees represented the solar and wind sectors.

Arroyo estimates that out of the firms represented at the 2012 bidders' conference, about three-quarters were companies directly involved with developing or owning and operating renewable energy generation. About 37% of these were firms that later submitted

Offers. It appears to Arroyo that most of the companies that chose to participate in the 2012 RPS RFO took the solicitation seriously and endeavored to understand how the RFO would be conducted by attending the conference.

Figure 2. Composition of registration for bidders' conference



PG&E posted condensed version of questions posed by Participants at the conference and the utility's answers on its public website. This enhanced the fairness of the solicitation overall by ensuring that attendees did not unfairly benefit from information not made available to their competitors.

Arroyo's conclusion is that PG&E conducted substantial outreach to renewable power developers active in North America. The number of individuals contacted, the distribution of the news of the solicitation in the electric power trade press, the 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.

### 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 1,000 GWh/year, 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 response to the solicitation was robust; contracting with all Offers would provide almost half of all the energy required to serve PG&E's customers. The response exceeded the stated goal for the solicitation (1,000 GWh/year of renewable energy) by a factor of [REDACTED]. The volume of bundled energy Offers proposed, [REDACTED] represented a decrease by about 60% from the 2011 RPS solicitation's response, which had massive participation. The total capacity of proposed projects for in-state, bundled generation was [REDACTED], which is about 30% of the response in PG&E's 2011 RPS RFO.

One would expect PG&E to be easily able to meet its volume goal for the solicitation from such a robust response. [REDACTED]

[REDACTED] This should be adequate for PG&E to achieve the targeted volume even with attrition from Participants who fail to complete negotiations to execute a contract, or projects that succumb to risks that could prevent a facility from achieving successful operation.

Arroyo speculates that the lower volume of Offers in PG&E's 2012 RPS RFO compared to the 2011 solicitation stems in part from the newly imposed minimum requirement for new projects to have an active interconnection application that has obtained a Phase I interconnection study. In the more robust 2011 RPS RFO, roughly half of all Offers were for the output of proposed projects that had not yet applied for an interconnection or had not yet obtained a completed Phase I study report. Such projects would have been ineligible to participate if the 2012 requirement had been in place. Also, some developers might have chosen not to offer projects that they would rather bring on line before PG&E's preferred 2019 and 2020 dates.

The technology that represented the largest share of offered bundled energy production was solar photovoltaic power, [REDACTED]. This was followed by geothermal generation [REDACTED] wind [REDACTED] solar thermal [REDACTED] and biomass and biogas [REDACTED]. In contrast to PG&E's 2011 RPS RFO, proposals to sell the utility unbundled renewable energy credits made up only a modest portion of total Offers; [REDACTED]

The share of geothermal Offers increased from PG&E's 2011 RPS RFO. Arroyo speculates that this is due in part to Edison's choice not to hold an RPS RFO this year. [REDACTED]

[REDACTED] In contrast, the portion of proposals from wind developers declined from 2011. It is hard to tell whether this may have been caused by the uncertainty in the wind industry in 2012 about whether federal production tax credits for wind energy would be extended or by the California legislation that places shaped-and-firmed deliveries of out-of-state wind generation into a less favored category.

PG&E's protocol explicitly stated a preference for Category 1 deliveries from in-state generators.

Offers for biomass-fueled projects declined [REDACTED] in this year's RPS solicitation from the 2011 RPS RFO total [REDACTED]

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#### D. IMPERIAL VALLEY OFFERS

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The CPUC has stated a public interest in obtaining a robust response to the IOUs' RPS solicitations from developers in the Imperial Valley, and in the 2009 RPS solicitations required that the utilities hold special Imperial Valley bidders' conferences. This focus is "in order to provide all reasonable opportunities for optimal use of the Sunrise transmission project."<sup>7</sup> For the 2012 RPS solicitations, the CPUC did not specifically require special Imperial Valley bidders' conferences (and treated such conferences as optional) but required continued monitoring of the investor-owned utilities' renewable procurement activities in the Imperial Valley area. PG&E chose not to conduct a special Imperial Valley conference.

PG&E received [REDACTED] Offers for output of Imperial Valley facilities, [REDACTED] of all proposals for bundled energy delivery. This was the same number of Imperial Valley project proposals received in PG&E's 2011 RFO, and more as a percent of the total [REDACTED]

[REDACTED] In this year's solicitation the total capacity of Offers for Imperial Valley projects, [REDACTED], totaled about [REDACTED] of all capacity offered. The total annual volume of Imperial Valley projects, [REDACTED] This representation of Imperial Valley projects seems to be quite robust [REDACTED]

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#### E. ADEQUACY OF FEEDBACK FROM PARTICIPANTS

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In its communications notifying Participants that their Offers had not been shortlisted, PG&E offered an opportunity to discuss the outcome. Several of the non-shortlisted Participants expressed an interest in follow-up discussions.<sup>8</sup> Arroyo observed [REDACTED] of these sessions [REDACTED] this is a higher representation of [REDACTED]

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<sup>7</sup> California Public Utilities Commission, Decision 11-04-030, "Decision Conditionally Accepting 2011 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan Supplements", April 20, 2011, page 24.

<sup>8</sup> In the 2011 RFO PG&E did not formally solicit feedback from Participants in its communications to non-shortlisted parties, but many took the opportunity to request a debriefing session anyway.

Participants than in PG&E's 2011 RPS RFO). Arroyo's opinion is that PG&E sought adequate feedback from Participants about the bidding and evaluation process.

These feedback sessions were welcomed by the Participants who requested them. They created an opportunity for Participants to ask more questions about the merits and demerits of their proposals for future improvements. Many Participants, when prompted to offer feedback on PG&E's solicitation materials and process, had generally positive commentary. For example, several developers compared PG&E's handling of its solicitation quite favorably against San Diego Gas & Electric's simultaneous RFO, commenting on greater transparency, more straightforward handling of responses, and timelier and clearer feedback on rejections by PG&E than SDG&E.

This year for the first time PG&E provided guidance on the value ranking of rejected Offers by quartile, which some developers found useful as a means of improved transparency. Several developers noted that PG&E has had sufficient experience holding renewable solicitations that the basic process runs smoothly and Participants know what to expect, and that the RFO process compares favorably to that in other states. Another theme was that PG&E does a "great job" in communicating to Participants before, during, and after the shortlisting process. For example, PG&E was quite clear about its 1,000 GWh/year volume goal for the 2012 solicitation, while SDG&E did not state what amount of renewable energy it sought in the public documents for its 2012 RFO, which led at least one developer to compliment PG&E on "being very transparent". Participants also appreciated the switch in the 2012 RFO to electronic submittal of most Offer documents from the requirement for duplicate hardcopies in the past.

Various critiques of PG&E's RFO were also offered. Some themes included:

- Even more transparency in feedback about rejected Offers would be appreciated, such as identifying the size of the gap between individual rejected Offers and the pricing of shortlisted Offers;
- Some Participants would prefer even more transparency on how PG&E estimates the value of capacity and of intermittent vs. firm energy;
- PG&E's collateral requirements, especially the standard project development security for new projects, seem high compared to other utilities;
- The selection process is perceived as skewed towards selection on best price, so that developers with highly viable projects and a solid track record of success expressed a concern that they are disadvantaged compared to riskier "low-bid" proposals with a greater likelihood of failure. These developers hoped that the regulator would take the viability or firmness of the cost estimates underlying the lowest bids into account when assessing the merits of PPAs.
- Owners of existing generators expressed a concern that the process favors new projects that will displace operating generation that has proven itself viable.



- A desire was expressed for the regulator to force the three investor-owned utilities to converge to using a common offer form, thus reducing the effort required of developers to participate in multiple solicitations. Also, a desire was stated for the regulator to match the timing of the RPS RFO cycle to the CAISO's interconnection study cycle better, making it possible to have studies in hand before Offers are due and to have short list selection known before deposits are due in the interconnection process.
- Some elements of PG&E's requirements are perceived as excessively inflexible, such as the limit of no more than four variants per Offer.

Arroyo's opinion is that PG&E's efforts to give and receive feedback after the close of the solicitation were adequate and helpful both to the utility and to those Participants who were willing to take part in a debriefing session. There remain opportunities to obtain more detailed feedback from the shortlisted parties in coming weeks as the utility and these Participants begin negotiations.

### 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 2012 RPS RFO was designed fairly, overall. Arroyo has some specific but narrow disagreements with the utility's approach.

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

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#### A. PRINCIPLES FOR EVALUATING THE METHODOLOGY

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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:

- There should be no consideration of any information that might indicate whether the participant 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 offers. These criteria should be applied consistently to all offers.
- The LCBF methodology should evaluate offers in a technology-neutral manner.
- The LCBF methodology should allow for consistent evaluation and comparison of offers 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 Portfolio-Adjusted Value ("PAV"), after which, "Final shortlisting decisions are made with judgment using the scores and assessments from the other evaluation criteria"<sup>9</sup> The application of judgment in bringing the non-valuation criteria to bear on decision-making, rather than a predetermined, mechanical, quantitative means of doing so, implies an opportunity to test the fairness and consistency of the method using additional principles:

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<sup>9</sup>Pacific Gas and Electric Company, "Renewables Portfolio Standard, 2012 Solicitation Protocol: Attachment K, PG&E's Description of its RPS Bid Evaluation, Selection Process and Criteria", November 29, 2012, page 13.

- 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.

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

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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 in terms of fairness and reasonableness. This section discusses the methodology in greater depth, and addresses a set of specific issues that are called out in the Energy Division's 2012 template for IE reports.

### 1. CONSISTENCY WITH 2012 RPS PROCUREMENT PLAN

This section discusses whether PG&E's evaluation and selection methodology is consistent with its final 2012 renewable energy procurement plan. The finding is that, overall, the methodology as documented in the 2012 RPS solicitation protocol is consistent with the approved plan.

- The procurement goal for the 2012 solicitation is consistent with that stated in the plan of adding 1,000 GWh/year through new long-term contracts;
- The solicitation accepts Offers both from new projects and from existing, operating facilities, and does not apply an explicit preference to either. (An existing, operating facility that does not propose major modifications will score higher than a proposed new resource using the Project Viability Calculator, but that is a natural attribute of the project as opposed to an intentional selection bias.) As stated in the approved plan, PG&E is not seeking short-term transactions that will fail to contribute to RPS needs beyond 2020. The RFO protocol states a minimum contract term of ten years and used an adjustment to valuation that advantaged proposals with delivery terms of ten to fifteen years. Also, as stated in the plan, PG&E envisaged long-term Offers from existing contracted RPS facilities whose PPAs do not expire in the near term; a portion of the outreach for the solicitation targeted such existing projects.
- The plan indicates that the 2012 RFO would seek products that enable PG&E to comply with its Resource Adequacy requirements. The public protocol states PG&E's preference for projects that are fully deliverable (as opposed to energy-only or partially deliverable). The valuation methodology rewards fully deliverable projects with higher values, as long as the delivery network upgrade cost to achieve full capacity deliverability status does not exceed the estimated value of RA capacity.
- The plan expresses a preference for long-term contracts that begin deliveries in 2019-2020, which is when PG&E currently anticipates a need to augment its existing

RPS portfolio. The valuation methodology has an adjustment which discounts the benefit of projects that commence deliveries earlier than the beginning of 2019.

- The plan also states that PG&E will be procuring long-term volumes with initial delivery dates “no later than the latter part of the third compliance period.” This element of the plan is intended to help ensure RPS compliance both within the third compliance period and after 2020. However, there is no specific element of PG&E’s methodology that deters selection of or discounts the value of Offers whose delivery starts after the end of the third compliance period. To the contrary, Arroyo believes that the tendency of the valuation methodology, with the inputs that PG&E has chosen, is to assign higher values to long-term Offers with even later on-line dates, all else being equal. In the actual event, as described in a later chapter, [REDACTED] and PG&E chose not to shortlist such Offers.
- The plan also states a preferences for projects sited within PG&E’s service territory. The valuation methodology has adjustments which discount the value of Offers from projects sited outside the service territory.
- New in 2012, the plan calls for an adjustment to the value of contracts whose projects provide intermittent generation that varies over time. The valuation methodology now applies a discount for intermittent resources such as wind and solar photovoltaic generation. The effect is to assign a premium to firm resources that more reliably match their stated daily delivery profile. In prior RFOs this was addressed within a standalone metric for portfolio fit. That metric has been eliminated and replaced with adjustments to calculate Portfolio-Adjusted Value. Arroyo believes that the new approach adequately takes into account a project’s characteristics related to portfolio fit preferences regarding RPS compliance needs, energy firmness, and geographical location.
- The plan states a preference for Offers from projects with characteristics meriting a higher viability score. The solicitation protocol indicates that Project Viability Calculator score will serve as one of the criteria for evaluation and selection and that the utility will evaluate the viability of each Offer using the Calculator.
- The final procurement plan identifies the integration cost assumption as zero as directed by the CPUC; the methodology assumes a zero integration cost adder.
- The plan states a preference for Category 1 product over Category 2 product and that over Category 3 product. This preference is stated in the solicitation protocol; the valuation methodology itself does not specifically distinguish Offers by category so the PG&E team must consciously make separate decisions about selections within each category.
- The plan states PG&E’s preference for projects that have less uncertainty about their cost impact, such as new generators that have a completed Phase II interconnection study. The evaluation methodology assigns projects with an executed SGIA or completed Phase II study a higher project viability score than those with only a

completed Phase I study or equivalent, and this year PG&E required all Offers for new projects to have at least a Phase I study. The solicitation protocol states that project viability has the greatest qualitative impact on Offer ranking (among non-quantitative criteria).

- Both the plan and the solicitation protocol convey PG&E's expectation that the team will use project-specific cost estimates drawn from interconnection studies to estimate transmission adders in the valuation process, but that PG&E reserves the possibility of using Transmission Cost Ranking Report estimates if appropriate.

In summary, PG&E's methodology aligns very closely with its 2012 RPS procurement plan, and is overall consistent with the plan's stated needs and preferences, requested products, and specification of portfolio fit. The one exception noted above is the plan's suggestion that initial delivery dates for long-term contracts would not be allowed beyond 2020, which is not explicitly stated in the solicitation protocol or addressed specifically in the methodology. In implementing its methodology, PG&E dealt with this by omitting from its final short list any proposals with initial delivery after 2020.

## 2. 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 forward prices 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.
- Net Market Value is a valuation concept that is generally accepted in the electric power industry.
- It provides an intuitive valuation based on the degree to which generating units are "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 20 or 25 years must rely on extrapolation of market forward curves rather than on direct observation of traded prices for power two decades hence. Such extrapolated prices are unlikely to be accurate forecasts, but the ranking of Offers using extrapolated inputs might still be directionally correct.

- A certain degree of interpolation or projection is required to achieve hourly granularity in price assumptions. The diurnal shape of California power market pricing is changing in response to the addition of new renewable resources, and it is rather difficult to forecast with accuracy how hourly price profiles might evolve over three decades.
- 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. These forecasts peg the value of RA at rather high and monotonically increasing levels in future years, whereas the record so far in deregulated wholesale power markets is one of boom and bust cycles where the value of capacity flies up in years of scarcity then collapses for extended periods after a burst of overbuilding new plants.
- There are challenges in estimating what Net Qualifying Capacity will be assigned by the CAISO to a project that does not yet exist, and at a point in time when changes to the currently approved methodology are anticipated but not fully confirmed. PG&E's approach to estimating NQC in the 2012 RPS RFO relies on its own assumptions about what the CAISO and CPUC will adopt.
- 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 25- or 30-year delivery terms over those with 10- or 15-year terms, 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. Also, in the 2012 RPS RFO PG&E has chosen to use adjustments to value that may compensate for the specific effect of valuing long-duration PPAs more than short ones.

Price vs. Value. PG&E's LCBF methodology takes into account both proposed price and estimated net value of each Offer, in the narrow sense that price is a key input to the utility's valuation model. However, PG&E ranks Offers by Portfolio-Adjusted 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 value, including transmission network upgrade cost impacts, rather than on contract price. As a result, the methodology will not systematically select the lowest-priced Offers, particularly when those projects would incur large upgrade costs. Arroyo views this use of value rather than price as the primary metric for ranking as appropriate given the potentially vast cost to ratepayers of network upgrades.

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, so that their omission seems reasonable. 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 potential deficiencies in the Humboldt, Stockton, and Sierra local areas within PG&E's territory using the more stringent of two tests for adequacy.<sup>10</sup> 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 sub-areas with such deficiencies. Some of the deficiencies seem likely to be resolved by debottlenecking investments in the medium term, but future generator retirements could create issues in the future.
- 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-following and regulation may increase.<sup>11</sup> This potential effect is not included in PG&E's valuation; there is no CEC-approved methodology for such an estimate. Arroyo's concern is that continuing to assume zero integration costs in RPS solicitations may skew renewable procurement and new construction towards investments that some day will in hindsight seem imprudent from a system operability and reliability viewpoint.

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. In the protocol for market valuation for this RFO, PG&E proposed to use the estimates of network upgrade costs from interconnection studies including CAISO Cluster 4 Phase II studies and Cluster 5 Phase I

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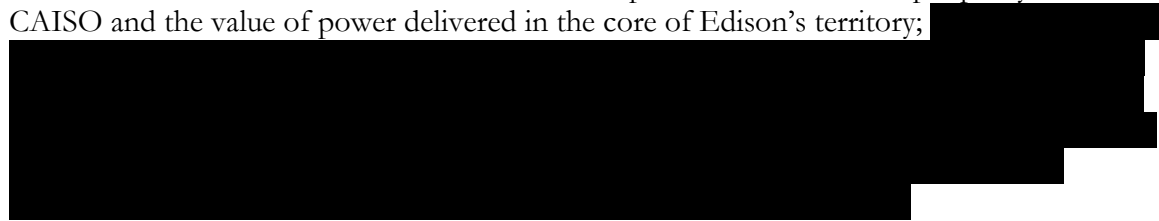
<sup>10</sup> California Independent System Operator, "2013 Local Capacity Technical Analysis: Draft Report and Study Results", April 9, 2012, page 2.

<sup>11</sup> Resources well-suited for providing these capabilities include hydroelectric plants and aging gas-fired steam units; the latter are increasingly uneconomic to continue operating as energy providers.

studies (the latter freshly issued just before the offer opening deadline). However, PG&E also reserved the alternative of using proxy cost estimates from the IOUs' Transmission Ranking Cost Reports, "if more appropriate." The public and non-public protocols leave unstated under what circumstances the utility would consider it appropriate to use proxy costs from TRCRs rather than estimates from interconnection studies as the basis for valuing the network upgrade costs associated with new projects. The next chapter discusses how PG&E implemented its protocol in the selection process.

PG&E's methodology omits consideration of these network upgrade 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. In Arroyo's opinion, these costs should have been included in PG&E's LCBF calculation but were not. This issue is discussed further in the next section.

Congestion charges. Arroyo believes that the current implementation of the LCBF methodology does not appropriately count the congestion charges between certain distant CAISO delivery points such as the Palo Verde hub or Mead substation 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. Arroyo's concern is that the LCBF methodology overvalues Offers for delivery at Palo Verde because it does not adequately take into consideration the difference between the value of power delivered at the periphery of the CAISO and the value of power delivered in the core of Edison's territory;



REC-only Offers. The energy value, capacity value, and ancillary services value of unbundled REC-only Offers is assumed to be zero. As a result, the Net Market Value of such Offers is the levelized price multiplied by -1. The utility's 2012 protocols are clear on how to calculate NMV for REC-only Offers but do not provide much guidance on how or whether to compare the valuations to competing alternatives comprised of bundled deliveries or how to select such Offers for the short list.

### 3. EVALUATION OF 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 both the price paid for the PPA and the cost of upgrades required to achieve reliable deliverability for new generation. Many features of the transmission cost methodology are specified by regulatory decisions.

The methodology has clear virtues:

- It provides a view of full costs of a project rather than only the energy procurement cost. This is a truer representation of the full cost to society of a new project.



- 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.
- Relying on estimates from interconnection studies provides a clearer view of the project-specific impacts on grid costs. Even when new facilities are sited in the same transmission cluster, the project-specific network upgrade scope can be dramatically different from project to project.
- Using interconnection studies provides a view of whether a new project will be fully deliverable upon commercial operation or whether it will likely start deliveries with an energy-only interconnection, reducing its value to ratepayers. This estimate is not available when using TRCRs.
- PG&E is able to weigh the total cost of transmission upgrades for a project against the relative value of Resource Adequacy that the upgrades will provide. The methodology calls for Offers that propose full-capacity PPAs to be valued counting both the value of capacity and the cost of upgrades, while Offers proposing energy-only deliveries are valued counting only the cost of reliability network upgrades. In the 2012 RPS RFO, PG&E followed each Participant's specification of whether a proposal is full-delivery vs. energy-only, rather than testing both and picking the higher-valued alternative.

The transmission cost methodology also has some drawbacks:

- The process of estimating transmission adders can be analytically burdensome. It requires checking of Participant's information by transmission experts
- TRCR adders are a generalized, regional proxy for the actual cost of a particular project at a specific interconnection point. There can be rather large deviations between the final cost of network upgrades written into an interconnection agreement and a TRCR estimate. While the April 5, 2012 Assigned Commissioner's Ruling on 2012 RPS procurement proposed using CAISO interconnection studies for evaluation when available, rather than TRCRs, the Decision approving 2012 RPS procurement plans made no changes regarding the use of TRCRs. PG&E's 2012 RPS procurement plan kept open the utility's option to use TRCR data in evaluations rather than CAISO interconnection studies if appropriate.
- 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. If this scenario plays out, 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, but is likely to be unavoidable when relying on project-specific information.

- Arroyo expressed a concern in its IE report on PG&E's 2011 RPS solicitation that PG&E applied transmission adders to projects that interconnect to the CAISO but did not include any estimate of network upgrade costs for projects that interconnect to the Imperial Irrigation District. Arroyo believes that excluding network upgrade costs when valuing Offers located in California in non-CAISO balancing authority areas could unfairly bias selection towards Imperial Valley projects that will interconnect to the grid of the Imperial Irrigation District. In those cases California ratepayers would end up bearing the upgrade costs in their rate base, but they happen to be businesses and households whose transmission rate base is outside the CAISO grid, so these costs are not taken into account when PG&E estimates the value of the contract offer.

In its Decision approving PG&E's 2012 RPS procurement plan, the CPUC stated that "the Commission agrees with PG&E that no preferences should be given to CAISO-interconnected projects or to projects otherwise interconnected."<sup>12</sup> By loading the valuation of CAISO-interconnected projects with required network upgrade costs but not considering such costs when valuing IID-interconnected projects, the methodology creates the potential for a systematic preference for the latter. In Arroyo's opinion, PG&E's calculation of net value is not a neutral metric for comparing CAISO- and non-CAISO-interconnected projects. This methodological quirk results in a selection bias which is the opposite of the concern previously expressed by stakeholders including IID, fearing discrimination against IID-interconnected projects.

Not only does PG&E's method for calculating transmission adders omit network upgrades on the IID grid that are caused by new projects, it also omits the cost of network upgrades that could or would be required in the CAISO grid for new generation built in IID's territory. Specifically, San Diego Gas & Electric Co. has estimated the impact of new "external" generation built to interconnect onto IID's grid upon SDG&E's network reliability. At some level of new build within IID's territory, SDG&E estimates that it would have to construct new 69-kV transmission lines in its territory in order to accommodate flows from those projects into its Imperial Valley substation and westward into the core of its territory without overloads.<sup>13</sup> Because projects that interconnect to IID's grid do not obtain an analysis of such reliability network upgrades to SDG&E's grid in their interconnection studies, PG&E is unable to obtain project-specific information about how to estimate CAISO upgrade costs driven by such effects. The only

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<sup>12</sup> CPUC Decision 12-11-016, "Decision Conditionally Accepting 2012 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan Off-Year Supplement", November 14, 2012, page 17.

<sup>13</sup> San Diego Gas & Electric Company, "Draft Transmission Ranking Cost Report of San Diego Gas & Electric Company (U 902 E)", June 27, 2012, page 24.

publicly visible source of such analysis would be SDG&E's Transmission Ranking Cost Reports.

The PG&E team conducted conformance checks of transmission study results. Arroyo notes that some offer forms 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 for CAISO-interconnecting projects. Part of the challenge was that many Participants omitted the required copy of the latest interconnection study, requiring the utility team to seek this information for deficient Offer packages.

#### 4. 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 prior methods that use single-digit scores.
- The methodology allows PG&E the flexibility to use both the more standardized tool as well as its subjective 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. For example, when an offer for a full-capacity project requires delivery network upgrades estimated to take several years beyond the proposed on-line date to complete, one scorer might assign zero points to "Reasonableness of COD" by observing that the PPA cannot deliver the proposed product on time, and another might assign 10 points, observing that the project can likely start energy-only deliveries on time.

When the scores rated by Arroyo and the PG&E team for the 2012 RPS RFO were compared, the variance between scores had a standard deviation of 9 points. This suggests that the Calculator is a somewhat 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. PG&E took this characteristic of the Calculator into account when using the tool.

- Some Participants appear to have a poor understanding of how the utility interprets the scoring guidelines. Also, some Participants choose to self-score their proposals in grossly inflated ways that overstate the Offer's viability beyond any reasonable measure. Arroyo believes this renders the self-scored Calculators submitted with offer packages too unreliable to use without review and correction, despite the fact that many or most Participants appear to fill out the form accurately.

PG&E's public solicitation protocol states that the utility "will evaluate the project viability of each offer" using the currently adopted version of the CPUC's Project Viability Calculator, and that "PG&E will review all submissions and adjust self-scores as appropriate." Similarly, PG&E's presentation in its Participants' Webinar indicated that "All offers will be scored" using the Calculator.

## 5. OTHER STRENGTHS AND WEAKNESSES

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

- PG&E took the extra step this year of providing Participants information about how their Offers ranked in value by quartile; developers found this to be an improvement, as it gave some insight about what was needed to achieve competitiveness. There was however a common desire for even more specific feedback on pricing and on the composition of the short list.
- Some Participants expressed an appreciation for the PG&E's use of the project viability criterion as an evaluation criterion, stating a concern that other solicitations base selection strictly on low pricing regardless of viability, which in their view disadvantages more experienced developers who might have a firmer view of what the costs of developing a new project will be.

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## **C. FUTURE LCBF METHODOLOGY IMPROVEMENTS**

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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 possible improvements.

## ENSURING FAIRNESS OF TREATMENT

As described previously in this chapter, PG&E applies a transmission adder for new projects interconnecting to the CAISO grid, and does not apply such an adder for new projects interconnecting to the grids of other balancing authority areas. In Arroyo's opinion this results in disparate treatment of the two classes of seller that is not neutral. While it seems legitimate that PG&E could be less focused on grid costs when they do not directly affect PG&E's customers, in the case of projects interconnecting to the Imperial Irrigation District the costs are ultimately borne by California ratepayers who reside outside the CAISO's boundaries. PG&E's approach does not optimize energy investment from the

vantage of what is the least-cost solution for society overall, but rather from the more parochial perspective of what is best for PG&E's ratepayers.

There seems to be an opportunity for the CPUC (which does not have jurisdiction over IID's rates) to provide guidance on whether such non-CAISO network upgrade costs should be counted when comparing and ranking proposals. Selection of Offers from projects that will be built in and connecting to IID's system has the odd effect of having IID customers subsidize deliveries to Northern Californians from projects that superficially appear highly competitive only when consideration of required transmission expansion costs is omitted.

This issue also exists in the situation of new projects proposed to be interconnected to other "foreign" balancing authority areas outside California. It is less clear to Arroyo how great a concern it should be that part of the cost of delivering RPS-eligible energy from a new project is ignored because it is being subsidized by Arizona or Nevada customers, as opposed to by California residents within IID's service territory or California municipal utilities' territories.<sup>14</sup>

### IMPROVING VALUATION INPUTS

Arroyo has some suggestions for improving the valuation methodology:

- 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.
- Undertake analysis to form a more solid basis for valuing the benefits of the buyer curtailment option embedded in proposed PPAs. While PG&E has made a good first step in this direction, it would be helpful to refine its view on how valuable the option to curtail RPS-eligible generation might be over the delivery term of these projects. While there are many uncertainties about what the impact of increasing the share of California electric supply from solar resources might be, it seems likely that having the ability to mitigate the incidence of overgeneration episodes will be increasingly valuable.
- Develop LMP multipliers for CAISO interconnection points such as Four Corners, Palo Verde, Moenkopi, Mead, Mohave, Parker Dam, and the Hassayampa-North Gila line, so that energy from projects that propose such nodes as delivery points can be valued taking congestion costs and losses fully into account. These are CAISO

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<sup>14</sup> Another consideration is that PG&E's ratepayers could later bear some of the costs of IID network upgrades. As IID increases its transmission rates to collect the upgrade costs required for this RFO's selected projects, new projects on IID's grid that sell to PG&E under future contracts would need to recover the increased transmission tariffs through higher contract prices borne by PG&E ratepayers. The effect of future increased IID tariffs would likely not affect pricing of shortlisted proposals from this RFO.

delivery points that are at the fringe of the IOUs' service territories and tend to record higher congestion differentials than points within the territories. The current Attachment K provides LMP multipliers only for zones internal to the CAISO grid, not for these far-flung CAISO delivery points. [REDACTED]

- Review Offers to check whether they might add to Net Qualifying Capacity in local zones identified by the CAISO as deficient. It would be difficult to quantify the benefits to grid reliability of adding generation to subareas that are deficient in local capacity. However, it could be helpful if projects that propose to add RA capacity to deficient local subareas were highlighted in the course of evaluating Offers.

### IMPROVING VIABILITY SCORING

The regulator could improve how the Project Viability Calculator is used. The 2011 Calculator scores the project's progress on achieving its transmission requirements in part based on whether required upgrades have obtained CPUC approval. However, the public version of the CPUC's Transmission Project Tracking Spreadsheet (posted on the CPUC's web site) is dated December 2009. Without access to otherwise non-public information about the regulatory status of individual transmission projects (e.g. whether an application for a Permit to Construct has been filed yet, or whether a final decision has been issued) it is difficult to score transmission requirements accurately.

### REFINING THE RFO GOALS CRITERION

PG&E's 2012 RPS solicitation protocol narrowed the elements of the RFO Goals evaluation criterion from its definition in prior years. Arroyo suggests that the utility review the changes to assess whether its preferences are fully reflected in the current year's design. As it stands, PG&E should not justify its selection of proposals based on contributing to resource diversity of the utility's supply portfolio; resource diversity was dropped as a component of the RFO Goals criterion. Arroyo believes that resource diversity is a legitimate element of a utility's prudent management of its supply portfolio, and the CPUC included resource diversity as a qualitative attribute that IOUs can use in evaluating proposals in competitive RPS solicitations in its Decision 04-07-029. Omitting resource diversity as a stated evaluation factor in the public solicitation protocol makes it appear less fair if the utility were to invoke that benefit in justifying selection of lower-valued Offers that offer diversity of technology or fuel type or system role (e.g. baseload vs. peaking).

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## **D. ADDITIONAL OBSERVATIONS**

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One subtle change to prior versions of the methodology was that in the 2012 RPS RFO PG&E agreed to explicitly calculate congestion cost for each Offer. The 2012 solicitation protocol displays the congestion cost multipliers for each load zone, where in prior RFOs an overall LMP multiplier was shown that incorporated the effect of both congestion and losses. Congestion charges estimated for each Offer variant were also displayed in the

confidential summaries of valuations provided to PG&E's Procurement Review Group. Decision 12-11-016 ordered the three IOUs to treat congestion cost as a separate variable.

As noted above, the 2012 solicitation protocol now omits resource diversity as a specific component of the RFO Goals criterion. It also omits environmental stewardship and local reliability, which were previously included explicitly as components (though environmental benefits to low-income, high-unemployment, or air pollution-suffering communities is included in the 2012 protocol's statement of the RFO Goals criterion). This appears to reduce the justification the utility might invoke in selecting lower-valued Offers that enhance the technology or fuel diversity of the short list, or that would benefit grid stability in local areas with shortfalls of Local Resource Adequacy. It also appears to reduce the justification PG&E might use as the basis to reject higher-valued Offers that pose significantly higher environmental risks, such as unavoidable impacts to threatened or endangered species.

## 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 2012 RPS solicitation was conducted fairly. Arroyo's conclusion is that the process was, overall, conducted in a fair and generally consistent manner. Arroyo disagreed with some of PG&E's choices. This chapter discusses how PG&E selected its short list to submit to the CPUC.

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

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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 offers treated the same regardless of the identity of the bidder?
- Were participant questions answered fairly and consistently and the answers made available to all participants?
- Did the utility ask for "clarifications" that provided one participant an advantage over others?
- Was the economic evaluation of the offers 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 offers?

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? Were decisions to select lower-valued Offers in preference to higher-valued ones because of their superior attributes in non-valuation criteria made consistently, or were the higher-valued proposals skipped over unfairly?
- 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 disseminated in the solicitation protocol to Participants prior to Offer submittal?

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

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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 arrive at 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 approved 2011 Project Viability Calculator;
- Developing a separate and independent point of view about which Offers most merited selection;
- Comparing PG&E's valuation ranking to the independent 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;
- Checking intermediate analysis and inputs to the valuation model, e.g. assignment of Offers to LMP zones, energy-only vs. full-capacity status, for accuracy and consistency;

- Comparing the question-and-answer information posted on PG&E’s public website to ensure that answers provided to any Participant in the course of the bidders’ conference and workshop were made available to all Participants;
- Auditing 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 identifying whether those rejections were fair and reasonable;
- Assessing PG&E’s decisions to select Offers that were less highly valued based on other attributes; and
- Testing these rejection and acceptance decisions for consistency; reviewing whether the logic for rejection and acceptance was consistently applied to all Offers.

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**C. FAIRNESS OF REJECTION OF OFFERS FOR NONCONFORMANCE TO  
REQUIREMENTS OF THE SOLICITATION**

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After Offers were received, PG&E performed a detailed review of the packages in order to identify deficiencies that needed to be addressed 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 common deficiency was the failure to submit a copy of all completed interconnection studies as part of the offer package; other deficiencies included failures to fill in required fields in the offer spreadsheet form, to provide evidence of site control, [REDACTED]

Shortly after offer opening, PG&E identified an error within its offer form spreadsheet, in which facilities that self-identified as repowered projects and that proposed full-capacity PPAs had incorrect time-of-delivery factors applied to pricing. The TOD factors appropriate for energy-only PPAs were inadvertently applied to these full-capacity offers. PG&E notified the affected Participants and provided them an opportunity to update their proposal using a corrected version of the offer spreadsheet.

**FULL CAPACITY OFFERS FROM ENERGY-ONLY PROJECTS**

Some Participants submitted Offers for full-capacity PPAs, but the record of their projects’ interconnection applications and studies included in the offer packages showed that their projects had applied for energy-only interconnections. PG&E communicated to these Participants that in the absence of an application for full capacity deliverability status and of studies of the upgrade costs to achieve full deliverability, PG&E would evaluate these Offers as proposals for energy-only PPAs. The Participants were given an opportunity and a

deadline to reprice the proposals as such (many energy-only Offers tend to be lower-ranked in PG&E's valuation and less competitive because they do not provide ratepayer benefits of capacity qualifying to deliver Resource Adequacy attributes). In Arroyo's opinion it was appropriate for the utility to consider these as energy-only Offers rather than rejecting them as non-conforming, and it was fair both to these individual Participants and to their competitors for PG&E to allow a one-time repricing opportunity.

#### REJECTED OFFERS

[REDACTED] that were submitted according to instructions for the RFO were rejected by PG&E for nonconformance with the requirements of the Solicitation Protocol; this is a relatively small number compared to rejections in PG&E's prior RPS solicitations.

- Most of these did not meet the requirement, new for PG&E's 2012 RPS RFO, that new projects must have at least a CAISO Phase I interconnection study or its equivalent (such as a Facilities Study from another balancing authority area operator).<sup>15</sup>
- [REDACTED] projects that propose to interconnect to non-CAISO balancing authority areas outside California did not have means of delivering their energy to a CAISO intertie point as Category 2 resources nor a proposal to arrange to be managed using a pseudo-tie or dynamic transfer agreement. [REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

In each case Arroyo agreed with PG&E's judgment that these proposals did not meet the requirements of the solicitation. In Arroyo's opinion PG&E's rejection of [REDACTED] proposals was fair to the developers who submitted them and fair to competing developers and owners who submitted conforming Offers.

### TARDY OFFERS

PG&E could have deemed Offers to fail to conform to the RFO's requirements because they were delivered after the offer deadline. [REDACTED] had been shipped by Participants on February 5 for overnight delivery via the U.S. Postal Service, but arrived a day late when the USPS failed to deliver on time. [REDACTED]

[REDACTED] PG&E judged that these packages, though delivered after the deadline, should be accepted for evaluation.

While some might consider it unfair to competing Participants for the utility to accept late-delivered Offers, Arroyo agrees that the failure for the USPS packages to arrive on time was not the fault of the Participants, was not caused by negligence on the part of the Participants, could not reasonably be foreseen, and did not affect PG&E's timely evaluation of all conforming Offers. In Arroyo's view [REDACTED] Participants relying on the postal service were unaware that their Offers were tardy [REDACTED]

[REDACTED] Arroyo considers PG&E's choice to accept them as if they were delivered by the deadline to be reasonable, [REDACTED]

### SHORT-TERM OFFERS

PG&E accepted [REDACTED] Offers that proposed delivery terms of five years, despite the statement in the public solicitation protocol that "PG&E is seeking offers with a term of at least 10 years. Short-term offers will not be considered." These [REDACTED] were Offers to extend existing contracts for delivery of power [REDACTED]

PG&E's motivation for imposing the minimum 10-year delivery term was to ensure that the RPS-eligible energy would qualify as Category 1 deliveries and be "bankable" for purposes of counting towards PG&E's future compliance needs. However, if [REDACTED] proposals were to qualify as extensions of existing contracts rather than as new contracts, PG&E [REDACTED] believed that the energy sold during the contract extension would receive grandfathered treatment and be available to use to meet later RPS compliance

needs. On that basis PG&E chose to accept [REDACTED] Offers for evaluation under the theory that if they do qualify for grandfathered treatment as contract extensions then the motive for imposing the 10-year minimum term would not be relevant.

In Arroyo's opinion the logic for this choice to deem [REDACTED] Offers conforming to the requirements of the solicitation rather than rejecting them seems somewhat reasonable, if uncomfortable. If PG&E had, with perfect foresight, stated in its public protocol that Offers to extend existing RPS agreements would not be subject to the 10-year limit, it is possible that other sellers who have such existing agreements due to expire later in this decade would have submitted short-term proposals. Or sellers who have existing agreements who did submit Offers for 10-year delivery terms might have proposed shorter term contract extensions. However, there is no evidence that any other sellers were disadvantaged by PG&E's acceptance of [REDACTED] Offers for evaluation, and neither PG&E nor Arroyo envisaged the possibility that 5-year proposals would be submitted when reviewing the protocol's text. In future RFOs it may be appropriate for PG&E to publicly state an exception for existing, contracted projects to its 10-year minimum term requirement.

[REDACTED]

#### SUMMARY OF REJECTION DECISIONS

In the days immediately following Offer Opening, some Participants sent PG&E corrections and changes to their previously submitted Offers. 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".

Overall, Arroyo's opinion is that PG&E's decisions about which Offers to reject based on failure to conform to the stated requirements of the solicitation protocol were fair both to Participants submitting non-conforming proposals and those submitting conforming Offers. A few of the Participants whose Offers were rejected could make an argument that they have been accepted for evaluation, and Participants who delivered their proposals on time could make a case that those Offers delivered after the deadline should be rejected. On balance Arroyo considers PG&E's logic for rejecting and accepting proposals to be fair and reasonable, though the solicitation materials for future RFOs might benefit from editing to accommodate special cases such as short-term extensions of existing contracts.

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#### **D. REASONABLENESS AND FAIRNESS OF PARAMETERS AND INPUTS**

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Nearly all parameters and inputs that PG&E used in its evaluation of the 2012 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 constructed the inputs to its calculation of the value of the buyer curtailment option using its business judgment about the size of the CAISO imbalance charges, ancillary services costs, and similar costs that would be avoided by exercising the option. While Arroyo agrees that these categories are benefits of the curtailment option and that PG&E's inputs seem to be within the ballpark of the magnitude of such benefits, the inputs are based on assumptions requiring subjective judgment about the value of curtailments. These specific inputs would likely benefit from more analytic work by PG&E to assess how the CAISO market might behave over a contract delivery term and how large the avoided costs of imbalance charges and ancillary services costs might be.

Also, it would be helpful for PG&E to review its approach to explain why these benefits are company-specific to PG&E's supply portfolio as opposed to benefits that would accrue to any load-serving entity with such a PPA. Or, PG&E could refine the distinction so that curtailment benefits of value to any LSE are counted in the net market valuation instead of the adjustment to PAV. Arroyo is not convinced that these specific benefits of a curtailment option belong as a portfolio-specific adjustment to value as opposed to belonging with the option valuation of CAISO energy market benefits that are included in PG&E's Net Market Value calculation. If it were clearly the case that the benefits calculated for the buyer curtailment option were PG&E-specific, then one might think the value assigned to the option would be lower for projects sited in SP-15 and higher for projects in NP-15, which was not the case. PG&E later assumed (described in a later section) that the curtailment option would be more valuable for projects in NP-15 than elsewhere, which seems to imply that the adjustment to NMV for these benefits should be higher for NP-15 projects.

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

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#### **E. THIRD-PARTY ANALYSIS**

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In its 2012 RPS RFO PG&E did not outsource any portion of the evaluation of Offers.

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## F. TRANSMISSION COST ADDERS AND INTEGRATION COSTS

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PG&E closely followed its public and nonpublic protocols in administering its procedures for transmission adders. The team relied on data from Phase I or Phase II interconnection studies or interconnection agreements to estimate the cost of network upgrades for new projects. PG&E did not make use of transmission adders from the IOUs' Transmission Ranking Cost Reports, though its solicitation protocol provided the utility the latitude to use TRCR adders "if more appropriate". The need did not arise, in part because PG&E extended its offer due-date to accommodate developers awaiting Cluster 5 Phase I interconnection studies at the end of January 2013, and these Participants were thus able to provide copies of those analyses as the basis for estimating project-specific adders.

As stated in the discussion of PG&E's LCBF methodology, there is a narrow subset of cases in which Arroyo disagrees with how PG&E applies transmission cost adders.

- In Arroyo's opinion, transmission cost adders should be calculated and applied when valuing projects that interconnect within California outside the CAISO's balancing authority area, using the estimates of network upgrade costs provided in those other Transmission Owners' interconnection studies. Arroyo considers the valuations of these PPAs to understate the full cost of power from the projects, and the evaluation methodology to be less than fully fair to competing projects that interconnect to the CAISO grid. PG&E chooses to ignore network upgrade costs that are borne by the ratepayers of other balancing authority areas and that do not affect the rates of PG&E customers.

PG&E's public and non-public protocols do not specifically address how to calculate transmission adders for new projects with non-CAISO delivery points, and do not explicitly call for excluding these transmission costs. However, the non-public protocol for market valuation specifies that transmission network upgrade costs will be subtracted in calculating Net Market Value. In future solicitations it would be better for the procurement plan and solicitation protocol to state explicitly that transmission adders will be set to zero for non-CAISO-interconnecting projects so that this element of the methodology is transparent to regulators and developers.

- In Arroyo's opinion, the lack of estimated LMP multipliers or congestion and loss factors for CAISO intertie points that fall outside the main body of the BAA presents a gap in data inputs. Arroyo's concern is that projects that propose to interconnect to these points may be unfairly advantaged vs. projects assigned to recognized LMP zones. Arroyo's opinion is that projects interconnecting to some far-flung outposts of the CAISO grid in other states should be evaluated with a recognition that average nodal prices there are on average materially lower than those within the core of the CAISO due to congestion and losses. This is not an issue with transmission adders but rather with estimates of congestion costs.

In contrast to PG&E's practice, Arroyo would have applied transmission adders to projects that will interconnect to the Imperial Irrigation District's grid, using IID facility studies as the basis for network upgrade cost adders. [REDACTED]

[REDACTED]

With the narrow exception of the projects interconnecting outside the CAISO, Arroyo's opinion is that PG&E properly assessed and applied transmission adders to Offers. PG&E applied no integration cost adder to Offers, consistent with the CPUC's Decision approving the 2012 RPS procurement plans.

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#### **G. AFFILIATE PROPOSALS AND BUYOUT OR TURNKEY OFFERS**

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PG&E chose to drop eligibility of Offers for utility buy-out of projects or turnkey construction of projects for utility-owned generation from its 2012 RPS RFO, focusing instead on seeking Offers for Power Purchase Agreements or for unbundled RECs. No affiliates of PG&E submitted Offers so the issue of conflicts of interest in selecting proposals from affiliates did not arise.

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

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PG&E's overall approach to creating a short list was to rank PPA Offers for delivery of bundled energy by Portfolio-Adjusted Value and to select highest-valued Offers. However, the choice of specific Offers for the short list was also strongly influenced by PG&E applying its seller concentration criterion, and placing an extra emphasis on the buyer curtailment option value component of PAV. Other criteria did not play much of a role affecting selection of the 2012 RPS RFO short list given the circumstances.

##### **1. SELLER CONCENTRATION**

Taking into account the criterion for seller concentration, in an initial pass the highest-ranked Offers were selected for the short list (regardless of technology) [REDACTED]

[REDACTED] The seller concentration criterion was applied to screen out Offers that would lead to shortlisting a total [REDACTED] from any individual developer or development consortium.<sup>16</sup>

The implementation of the seller concentration criterion had some uneven effects:

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<sup>16</sup> [REDACTED] PG&E's protocols do not state a fixed MW cutoff defining excess concentration, and the utility's team has discretion to apply its best judgment in screening for excess concentration.



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 2. BASELOAD GENERATORS AND MAXIMUM BUYER CURTAILMENT

After the initial selection of the highest-PAV Offers (as constrained by avoiding excess seller concentration), PG&E selected lower-valued Offers outside of strict economic ranking, in two categories:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

By selecting these three Offers out of strict value rank order based on other evaluation criteria, PG&E increased the size of its initial short list [REDACTED]

### 3. WITHDRAWALS BY PARTICIPANTS

After notifying Participants of rejection and selection decisions, [REDACTED] that PG&E had selected were withdrawn by their developers: [REDACTED]

[REDACTED]

This left PG&E with a total short list of [REDACTED] Offers for bundled energy delivery. This is a relatively shorter short list by comparison to PG&E's 2009 and 2011 RPS solicitations', [REDACTED]

[REDACTED] While Arroyo's criticism of PG&E's 2011 RPS short list was that it appeared to be too large, the IE's opinion is that the length of the 2012 short list is reasonable.

In administering its methodology, PG&E evaluated some or all Offers on the other evaluation criteria listed in its protocol, but these generally did not affect the actual selection:

### 4. PROJECT VIABILITY

Overall, PG&E followed the methodology stated in its solicitation protocol:

"PG&E will evaluate the project viability of each offer using the June 2, 2011 CPUC adopted version of the PVC. Participants are requested to self-score each of their offers using the PVC...PG&E will review all submissions and adjust self-scores as appropriate."

The PG&E team used the Project Viability Calculator to score the projects considered for selection as well as some others; [REDACTED] PG&E did not score every single Offer variant for project viability, and left the self-scores intact for lower-valued Offers that were rejected based on lower value. PG&E's decision that its team would not score the project viability of each and every Offer did not affect selection of a short list. All the shortlisted Offers were scored by the team, [REDACTED]

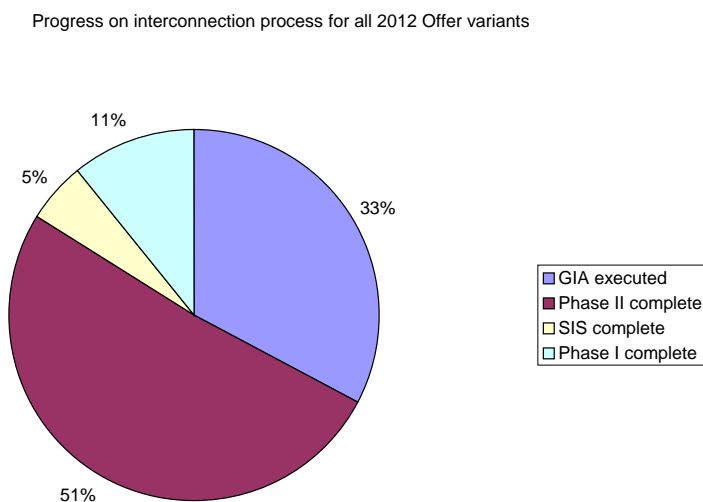
17

Arroyo agrees that the task of scoring every Offer variant is tedious and burdensome, and that scoring the lowest-valued proposals for viability does not contribute much to the selection process.<sup>18</sup> PG&E did perform data conformance checks on the Offer variants it scored, including using outside data sources to confirm the accuracy of the scores.

Very few Offers were explicitly rejected by the utility because of the low viability of a proposed project; PG&E judged that nearly all proposals selected for the short list had a profile that offered sufficient likelihood of success to merit selection. The high viability of existing, operating projects currently delivering energy to PG&E was cited as support for the utility's decision to select proposals

A new requirement for Offers to PG&E's 2012 RPS solicitation was for proposed projects to have completed at least a Phase I interconnection study or its equivalent. Figure 3 shows the status of interconnection progress for Offer variants submitted. This distribution is strikingly different than that for PG&E's 2011 RPS RFO, in which about half the Offers were from projects that had not yet obtained a Phase I study or its equivalent. The new requirement seems to have led to 2012 Offers that on average are more advanced.

Figure 3.



17

<sup>18</sup> Arroyo independently scored at least one variant (the highest-valued variant) of each conforming Offer, in order to rank projects on their project viability when later reporting on the merit of PPAs for CPUC approval, as prescribed by the Energy Division's template for IE reports.

## 5. RFO GOALS AND ENVIRONMENTAL RISKS

Appendix K to PG&E's 2012 solicitation protocol stated three specific subcomponents of the RPS Goals evaluation criterion. These included adherence to legislative direction, consistency with the CPUC's Water Action Plan, and support for Executive Order S-06-06 regarding biomass-fueled generation.

In the 2012 RFO, PG&E's evaluation team reviewed and scored [REDACTED] for consistency with RFO goals and for environmental risks, focusing on projects considered for shortlisting. All of these Offers, including those on the final short list, were deemed to be consistent with RFO goals. Most of the shortlisted projects were scored as having low-to-moderate or moderate environmental risks. [REDACTED]

19

Two of the shortlisted Offers were categorized by PG&E's environmental subteam as "lacking information", i.e. sufficiently incomplete that it was difficult to assess environmental risks:

[REDACTED]

PG&E did not judge the risks associated with the incompleteness of the profile of these projects as sufficient to warrant their Offers' rejection.

Arroyo agrees that conducting a preliminary assessment of environmental risk for projects considered for selection is prudent both to identify proposed facilities that would likely encounter permitting challenges to viability and those whose impact would fail to align with the utility's environmental values. This screening seems more useful for checking whether new projects are likely or not to succeed in obtaining required permits, as an indicator of project viability, rather than whether they meet the RFO Goals criterion.

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19 [REDACTED]

## 6. DELIVERY POINT

PG&E stated in its 2012 solicitation protocol a preference for projects that deliver in PG&E's service territory. The calculation of Portfolio-Adjusted Value for each Offer included adjustments that reduce the value of projects located in SP-15 or outside the CAISO. Based on an inspection of the Offers ranked highest based on Net Market Value vs. those ranked highest based on Portfolio-Adjusted Value, Arroyo believes that the short list contains significantly more projects that deliver in NP-15 and fewer projects that deliver in SP-15 than would have been the case had PG&E continued to use Net Market Value as its key metric for valuing proposals. In that sense the adjustments to calculate PAV accomplished the intent of its design of incorporating PG&E's preference regarding siting in its service territory into a quantitative measure. Also, PG&E was able to justify its selection of [REDACTED] out of value ranking in part because of their siting in NP-15.

The short list is geographically diverse in the location of projects. The proportion of shortlisted projects located in PG&E's territory [REDACTED] is higher than those of PG&E's 2011 RPS RFO [REDACTED] and 2009 RPS RFO (10 of 29). Figure 4 displays a histogram of the distribution of Offers received and shortlisted Offers by location of delivery point.<sup>20</sup> The representation of NP-15 projects is proportionately higher than that of SP-15 projects, despite generally higher net market values for SP-15 projects and the higher expected capacity factor of solar photovoltaic projects proposed for SP-15 [REDACTED] vs. NP-15 [REDACTED].

Figure 4.



## 7. COMMERCIAL OPERATION DATE

The solicitation protocol clearly stated PG&E's preference to select Offers that begin delivery term in 2019-2020. This preference aligns with the utility's current view of when its RPS portfolio will need increased deliveries to meet compliance goals.

In contrast to PGE's 2011 RPS RFO, it appears that most of the community of developers paid attention to PG&E's publicly stated preferences about timing. Most of the Offer variants received in the 2012 RPS RFO proposed 2019 or 2020 on-line dates. Many of the variants with earlier on-line dates had alternatives with 2019 and/or 2020 on-line dates. Several developers suggested an intent to bring projects into commercial operation earlier than 2019 and to sell to other off-takers until a PPA with PG&E would begin deliveries. Figure 5 displays a distribution of Offer variants by the year of initial deliveries.

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<sup>20</sup> [REDACTED]



Many of the proposals for a 2016 start date were for solar projects that presumably sought to take advantage of the federal investment tax credit, currently scheduled to expire that year.

Figure 5.



With [REDACTED] exceptions, the Offers that PG&E [REDACTED] or its short list proposed initial deliveries in 2019 or 2020. The exceptions are projects that are currently contracted to deliver RPS-eligible energy to PG&E that proposed to commence their deliveries upon the termination date of the current PPAs: [REDACTED]  
[REDACTED]

## 8. 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.”<sup>21</sup>

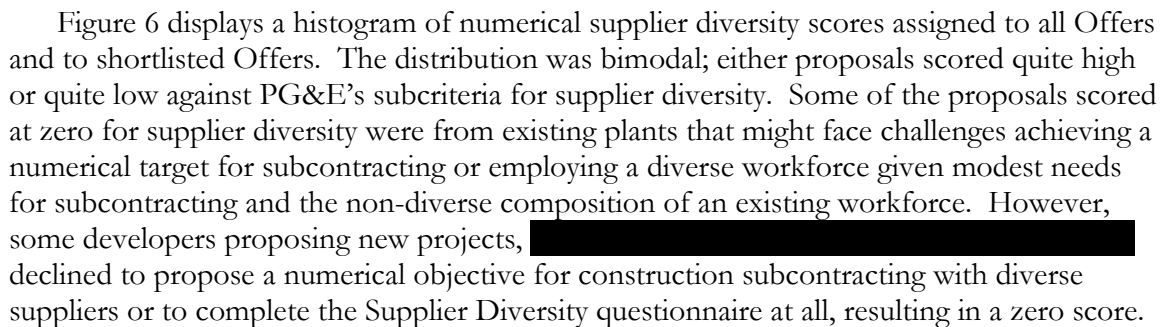
PG&E's evaluation committee scored Offers based on the submittal of Attachment L, a Supplier Diversity Questionnaire that the utility routinely uses in solicitations.

Among developers submitting to the 2012 RPS RFO, none were WMDVBEs that have been certified by the CPUC Clearinghouse. Some developers proposed to set up project entities that would qualify as diverse enterprises and later be certified by the CPUC as diverse, but no Offers were received from entities that are currently CPUC-certified WMDVBEs. This compares unfavorably to prior years in which PG&E received proposals from development companies that are already CPUC-certified diverse business enterprises.  
[REDACTED]

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<sup>21</sup> Pacific Gas and Electric Company, “Renewables Portfolio Standard: 2011 Solicitation Protocol, May 11, 2011 (Updated June 7, 2011), page 42.

### Histogram of Scores for Supplier Diversity



PG&E received conforming REC-only Offers from

PG&E chose to select

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## I. ANALYSIS OF PG&E'S SHORT LIST RESULTS

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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 one aspect of how PG&E applied its methodology and with a few of the choices made in the selection process. Specific areas of disagreement included:

- Imperial Irrigation District Transmission Adders. In Arroyo's opinion it would have been fairer to apply transmission adders for network upgrade costs in the Imperial Irrigation District's grid, even though those costs are not directly borne by PG&E ratepayers. In Arroyo's opinion, PG&E's methodology advantages projects within IID's territory whose net valuations are uncompetitive when full costs, including required grid upgrades, are taken into account. This disparate treatment seems less than fully fair. [REDACTED]

Arroyo acknowledges that PG&E's logic for its selection is sound when based on the utility's sole focus on direct costs to PG&E ratepayers, because the deliveries from these projects to PG&E customers would be subsidized by IID ratepayers. Arroyo's concern here is that it seems less than fair for an evaluation methodology to so strongly favor one class of projects (new IID-interconnecting generators) over another (new CAISO-interconnecting generators) and it seems undesirable from a public policy standpoint to select projects that are far from the least-cost alternatives when all costs to society, including costs to IID customers residing in California, are considered.

- Offers Ranked Low for Project Viability. Arroyo ranked [REDACTED] in the bottom quartile among all Offers for project viability, using the Project Viability Calculator. On that basis Arroyo would not have selected such a project for the short list [REDACTED]

[REDACTED]

Also, Arroyo ranked [REDACTED] in the bottom quartile in project viability among all Offers. On that basis Arroyo would not have selected such a project for a short list, [REDACTED]

[REDACTED]

[REDACTED]

Figure 7 displays a histogram of the independent scores Arroyo assigned to the projects offered in the RFO and to the shortlisted Offers. Most of the shortlisted proposals were scored above median, [REDACTED]

[REDACTED]

Figure 7.

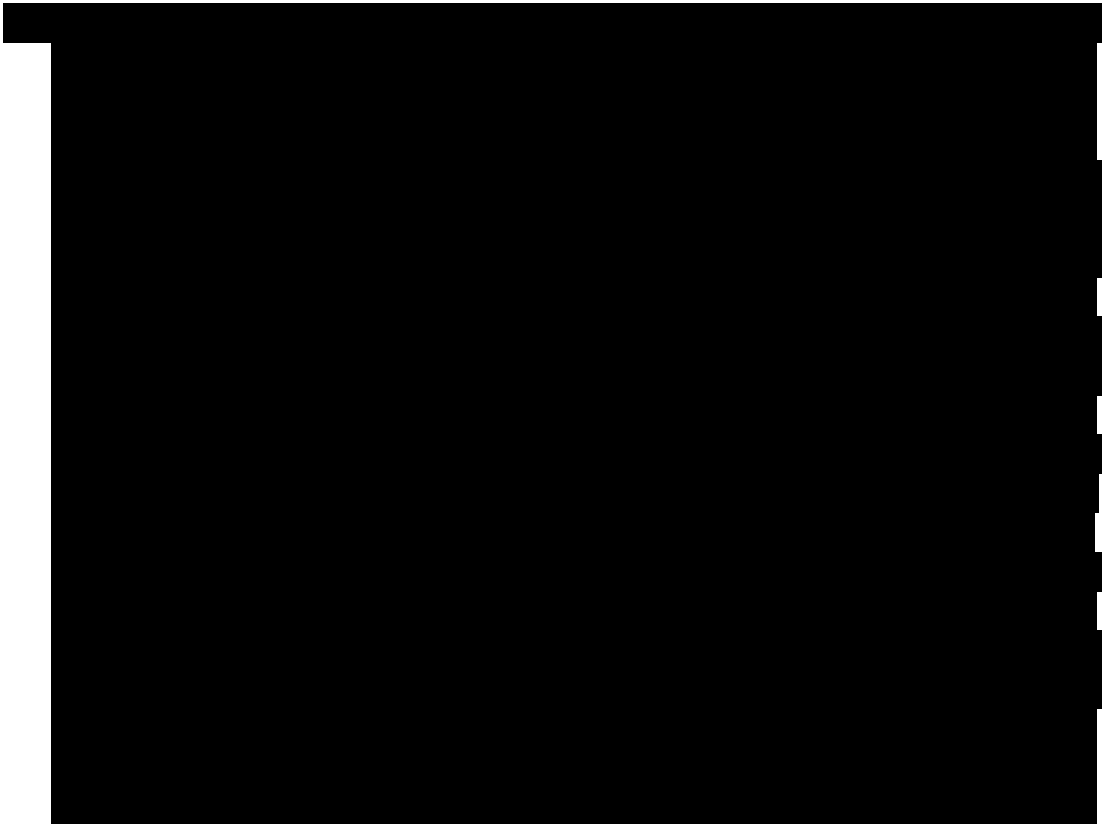
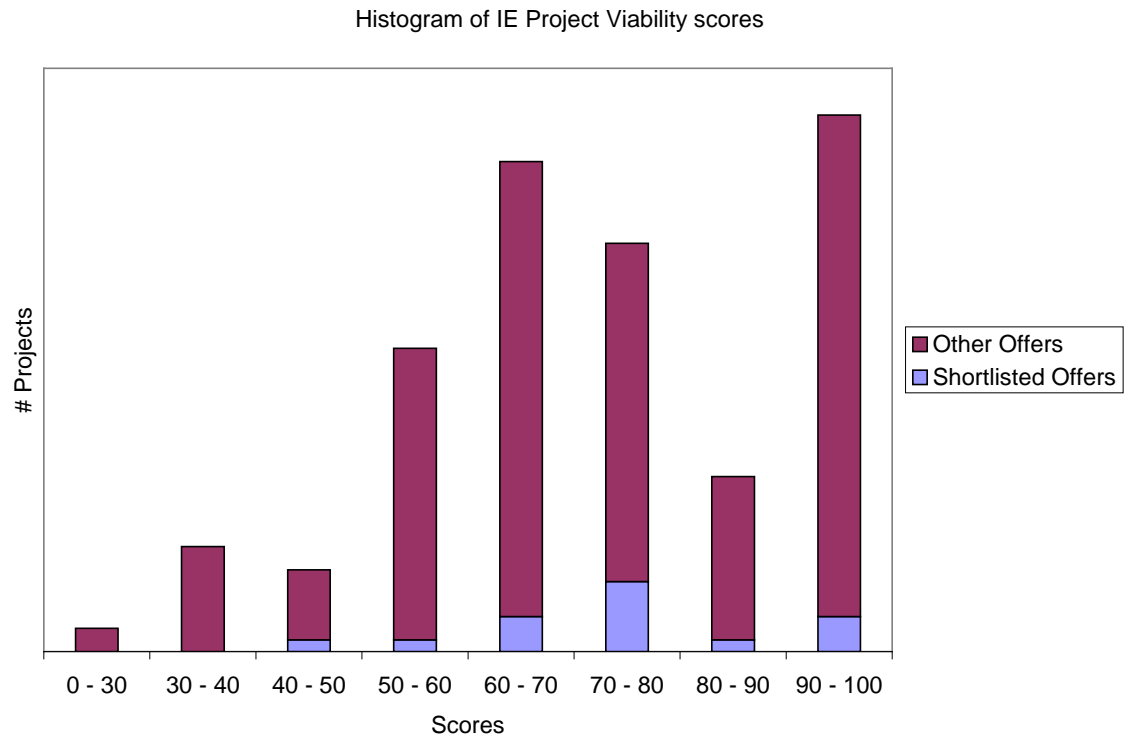




Figure 8 displays a histogram of PG&E’s estimated PAV for all Offer variants and for the short list. PG&E picked proposals that mostly ranked in the top-valued quartile, [REDACTED]



Figure 8.



The RPS solicitations were intended to be competitive mechanisms to achieve least-cost solutions for ratepayers, without favor for any individual technology or fuel type. [REDACTED] creates an appearance that PG&E has violated the principle of technology-neutral evaluation and selection that the regulator has suggested in its IE template.<sup>22</sup> [REDACTED]

[REDACTED]

- Screening for Seller Concentration. In Arroyo’s opinion, it would have been preferable if PG&E had set the cutoff for total MW capacity awarded to any individual developer or consortium to [REDACTED]

[REDACTED]

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<sup>22</sup> Similarly, the CPUC has previously stated that “IOUs are directed to evaluate bids for renewable energy using a transparent, technology neutral least cost/best fit methodology”. California Public Utilities Commission, “Progress of The California Renewable Portfolio Standard as Required by the Supplemental Report of the 2006 Budget Act”, Report to the Legislature, April 2007, page 6.

[REDACTED]

[REDACTED]

[REDACTED]

Arroyo views the choice of [REDACTED] as within the latitude for PG&E to exercise its business judgment.

[REDACTED]

- Maximum Buyer Curtailment. PG&E chose to select [REDACTED] in NP-15 that offered the maximum hours of buyer curtailment. Arroyo is uncertain whether PG&E's belief that NP-15 project curtailments offer the most benefit to its ratepayers is accurate, or whether ZP-26 projects might provide comparable benefits. It might be the case that in future scenarios with high solar energy build in SP-15, overgeneration issues could occur most frequently in Edison's territory and that curtailing projects in ZP-26 could have comparable benefits in helping PG&E ratepayers avoid losses.

[REDACTED]

Arroyo admits that without more analysis of the scenarios in which buyer curtailment becomes valuable it is hard to tell how best to screen based on the curtailment option.

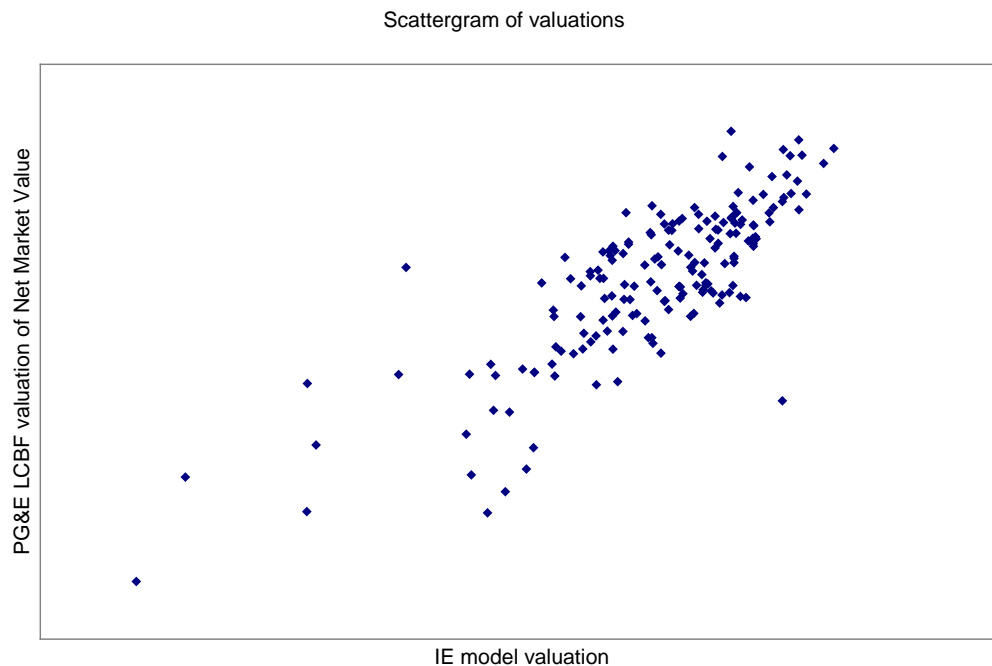
Although Arroyo disagreed with these particular choices that PG&E made, the basis for most of these disagreements centers on differences in business judgments about relative priorities, not on choices made contrary to the solicitation protocol. Arroyo believes that nearly all choices the PG&E team made were reasonable, justifiable, and internally consistent. For example, it is a matter of priorities how low in viability a project might rank before it is rejected for the risk of failure it poses. If PG&E ultimately executes a contract [REDACTED] it will likely be because the utility prefers to trade off some greater risk of project failure with a less experienced developer in exchange for a contract that ranks low in price and high in value compared to competing alternatives. If PG&E ultimately executes a contract [REDACTED], it would likely be because PG&E is willing to accept higher ratepayer costs in exchange for higher project viability [REDACTED]

While Arroyo's relative preferences differ, Arroyo believes that PG&E's relative priorities reflected in its selections of lower-valued Offers, based on its subjective business judgment, are reasonable.

## 2. INDEPENDENT OFFER ANALYSES

Arroyo conducted its own rather simplified valuation analysis. Arroyo's valuations generally correlated well with PG&E's Net Market Value analysis for many Offers, but with a fair amount of noise in the comparison, as shown in Figure 9 that compares the two sets of valuations. The mediocre quality of the correlation is less interesting than the outliers and the underlying reasons for some of the divergences:

Figure 9.





- PG&E assigned a higher value to new projects interconnecting in non-CAISO balancing authority areas because no transmission adders are applied; Arroyo estimates an adder for network upgrades for these projects. This is most clearly seen in the two shortlisted projects interconnecting into IID's grid.
- PG&E assigned network upgrade costs to projects for an interconnection even if the developer reports that the costs will be borne by another project using a share of the interconnection capacity, on the logic that the costs should still be allocated to the project making an Offer.
- Some scatter is due to the difference in discount rates applied to future years' cash flows; PG&E uses its own authorized weighted cost of capital as a regulated utility, Arroyo uses a higher estimate of merchant generators' cost of capital.

The adjustments have a considerable impact on the value rankings of Offers. Figure 10 shows a plot of Offers' NMV vs. PAV, showing visually how for some Offers the adjustments can reduce the PAV by as much as [REDACTED] substantially altering their ranking.

Figure 10.



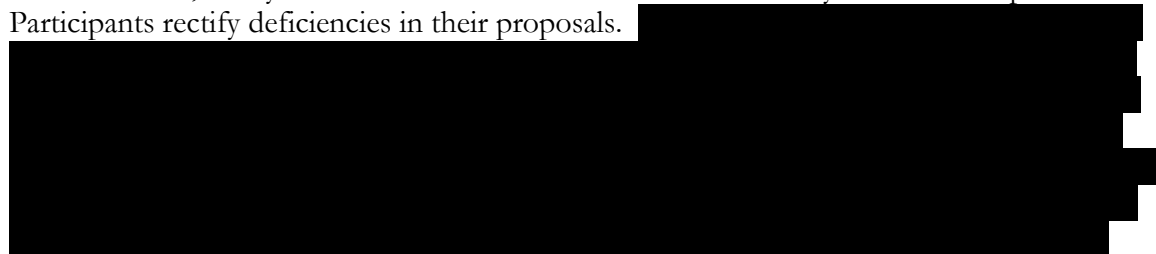
Overall, if Arroyo had used its valuation and [REDACTED] scores to identify high-value candidates for selection, more Offers in SP-15 would have been chosen, including more existing geothermal and wind projects. Fewer Offers in NP-15 would have been chosen [REDACTED] and projects that Arroyo scored below median for project viability would have been rejected, [REDACTED]. This simply reflects the strength of PG&E's preference for projects in its own service territory, its disinterest in counting IID network upgrade costs that do not directly affect PG&E's rates, and its greater willingness to select lower-viability proposals.

Arroyo also scored each Offer for viability independently of PG&E's analysis, using the final version of the 2011 Project Viability Calculator, anticipating a later need to rank projects that obtain executed PPAs against a peer group made up of all RFO proposals.

### 3. RECTIFYING DEFICIENCIES OF REJECTED OFFERS

PG&E communicated early to several Participants about basic deficiencies in their Offer packages and provided them with an opportunity to correct these deficiencies by completing or correcting their original submissions. None of these original deficiencies caused rejection from consideration for the short list once corrected. Most of the deficiencies concerned omissions of required documents from the offer packages, such as interconnection study reports. In a very few cases the deficiencies were clearly beyond remedy, [REDACTED]

In the case of Offers that PG&E rejected for non-compliance with the requirements of the solicitation, Arroyo believes that little could have been done by PG&E to help Participants rectify deficiencies in their proposals.



#### 4. OVERALL FAIRNESS OF ADMINISTRATION

Despite a handful of disagreements, Arroyo Seco Consulting's overall judgment is that PG&E's decisions to select or reject Offers to arrive at a short list for the 2012 RPS RFO were reasonable and justifiable, overall.

Most disagreements between Arroyo and the PG&E team fall into the category of choices that Arroyo would have not made if it were designing and 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. The choices with which Arroyo disagrees reflect (1) PG&E's view of which utilities' network upgrade costs should be counted in valuing Offers, (2) the relative priority PG&E assigns to some of the non-quantitative evaluation criteria (such as RFO Goals) vs. valuation, and (3) PG&E's judgment about how much risk of project failure from viability issues to accept in making short list selections.

Arroyo believes that in each case, 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. Arroyo's subjective judgment would differ from PG&E's in making these choices, as might the judgment of some policymakers and other observers. Participants whose high-value Offers were rejected while lower-valued proposals were shortlisted might perceive PG&E's choices as unfair, but the utility's choices were in most cases rooted in evaluation criteria stated in the public solicitation protocol. Arroyo doubts however that an IOU should reject a high-valued Offer simply because the size of the proposed project is small, while selecting lower-valued Offers.

While Arroyo believes that PG&E may be justified in its choice to omit transmission adders when valuing Offers for IID-interconnecting projects because those costs do not directly affect PG&E ratepayers, in Arroyo's opinion the practice is not particularly fair. Also, nothing in PG&E's public or non-public protocols suggests that the transmission network upgrade cost will not be applied for such projects, so this choice lacks transparency. On that basis, Arroyo's opinion is that PG&E's administration of its methodology was overall reasonable and justifiable but that the treatment of IID-interconnecting projects was less than fully fair.

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## J. IMPERIAL VALLEY OFFERS

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PG&E received [REDACTED] for renewable generation either already operating in or proposed to be sited in the Imperial Valley, or 14% of the total number of conforming Offers for bundled RPS-eligible energy. The PG&E team generally applied the same steps and processes to evaluate these Offers as it did with others. As previously described, PG&E's methodology appears biased in favor of Offers for new projects that interconnect within the Imperial Irrigation District (or other non-CAISO balancing authority areas) over projects interconnecting within the CAISO; the PG&E team did not apply transmission adders to the former proposals. Projects sited in the Imperial Valley comprise [REDACTED]

Overall, the response of the developer community to propose Imperial Valley projects was robust and PG&E's selection of Imperial Valley Offers was representative of that strong response. Arroyo perceives no evidence that PG&E failed in any way to perform outreach to generation developers and owners active in the Imperial Valley or that there was any structural impediment in the RFO process that materially hindered the selection of competitively priced Offers for projects in the Imperial Valley.

## 5. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

This chapter gives an independent review of the extent to which PG&E's bilateral negotiations with Iberdrola Renewables, LLC for a REC-only purchase and sale agreement were conducted fairly.

PG&E appears to have approached Iberdrola in May or June of 2013 after selecting [REDACTED] for its short list in the 2012 RPS RFO. Based on broker quotes, PG&E believed that better prices for a ten-year REC-only transaction might be available in the market than [REDACTED] and proceeded to explore possible bilateral contracts.<sup>23</sup> Arroyo telephonically observed four negotiation sessions between PG&E and the Iberdrola team over the course of two months. Arroyo was also able to review multiple draft versions of the contract in order to identify specific proposals and counterproposals the parties made in the course of discussions. The original starting point for the negotiations was a version of PG&E's RPS REC-only Form Agreement that PG&E provided to Iberdrola in mid-July 2013, that had been modified from a prior December 2012 version published as part of PG&E's 2012 RPS RFO.

Arroyo's opinion is that PG&E's negotiations with Iberdrola were conducted in a manner fair to competitors. Concessions that Iberdrola requested and PG&E granted affected the project viability ranking of the agreement (a criterion for ratepayer benefit) when using the evaluation criterion for viability specified in PG&E's 2012 RPS solicitation protocol.

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### A. BACKGROUND INFORMATION

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Iberdrola Renewables, LLC is a Portland-based developer and owner of wind, solar, and gas-fired generation in the U.S. It owns and operates more than 4,000 MW of wind generation, of which nearly half is in the Western Electricity Coordination Council (WECC) region. The scale of its operations makes Iberdrola the second largest wind generation operator in the U.S. PG&E purchases renewable energy from Iberdrola's Klondike III wind project in Oregon and from its Shiloh wind project in Solano County under long-term PPAs.

PG&E solicited proposals for Category 3 RECs within its 2012 RPS RFO [REDACTED]

[REDACTED] the utility chose to seek competing

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<sup>23</sup> PG&E reports that it also approached other market participants active in REC marketing during this period, [REDACTED]

alternative proposals for REC sales from other parties, in part to ascertain [REDACTED] [REDACTED] were competitively priced. The utility approached Iberdrola on a bilateral basis in the spring of 2013 to solicit a proposal [REDACTED] [REDACTED]

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#### **B. PRINCIPLES FOR EVALUATING THE FAIRNESS OF NEGOTIATIONS**

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

- 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?

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#### **C. NEGOTIATIONS BETWEEN PG&E AND IBERDROLA**

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The negotiations between PG&E and Iberdrola extended from June through September 2013. Some of the issues addressed in the negotiation included:

- Delivery term. [REDACTED]

[REDACTED]

- Volume flexibility [REDACTED]

- Calculation of termination payment, and seller failure to deliver. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- Specificity of projects that produce RECs. In the version of the Form Agreement originally presented to Iberdrola, the specific generating project or projects that will provide the RECs that are delivered under the contract are

specified in Appendix III. The specific project (or projects) is required to be certified and qualified as an eligible renewable resource, and the seller is prohibited from procuring the RECs from any other facility or facilities.

[REDACTED]

The final version of the agreement includes a list of [REDACTED] generation facilities in Appendix III [REDACTED] but allows the seller to deliver product from these or any other eligible renewable resources, as long as deliveries meet the contract's requirements for product. [REDACTED]

- Verification of REC certification. PG&E's Form Agreement has text requiring the seller to obtain CEC certification of the specific project(s) as an eligible renewable resource and to verify the certification. [REDACTED]

[REDACTED] The parties agreed to new language that places the obligation on the seller to provide documentation upon PG&E's request that the projects generating the RECs are in fact eligible renewable resources. [REDACTED]

[REDACTED] This language seems to Arroyo to be somewhat stronger than that in the Form Agreement and more appropriate to this situation in which the seller doesn't necessarily own the projects that produce the RECs and the contract does not specify in advance what projects will deliver the RECs.

- Refunds in event of seller default. [REDACTED]

[REDACTED]

While the parties did not reconcile their difference in views about [REDACTED]  
[REDACTED] Iberdrola agreed to accept PG&E's terms.

- Supplier diversity and safety

[REDACTED]

[REDACTED]

- Access to financial information

[REDACTED]



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**D. DEGREE OF FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS**

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Arroyo observed four negotiation sessions between the PG&E and Iberdrola teams during the summer of 2013. The parties agreed to a few changes from the version of the Form Agreement for REC-only sales that PG&E had developed in the first several months of 2013. In a few cases, Iberdrola acquiesced to PG&E's preferences [REDACTED] [REDACTED] other changes were proposed by Iberdrola and accepted by PG&E.

Arroyo views most of the changes initiated by Iberdrola as reasonable accommodations to the business model that Iberdrola pursues as both a renewable generation owner and wholesale marketer and trader. For example, Arroyo agrees that an active trading desk would perceive a different risk profile for a ten-year contract that locks the seller into delivering RECs only from specific facilities, as opposed to delivering from any verified, certified, eligible renewable resource. On that basis it could have been a reasonable business choice for Iberdrola to increase the pricing of a contract that constrained deliveries to originate from [REDACTED] compared to the less-constrained contract that was executed. Ratepayers may benefit from the lower pricing available when the seller is free to select from a broader array of generating plants. It appears to Arroyo that PG&E granted Iberdrola a valuable option by allowing the seller to choose projects later to deliver the RECs, and thereby avoided a higher-priced PSA.

[REDACTED]

[REDACTED]

Overall, Arroyo regards the concessions that PG&E provided to Iberdrola in the contract terms and conditions as changes that do not unduly disadvantage ratepayers (with the possible exception of the option for the seller to decide later what project will deliver RECs, discussed in the next chapter). In any case, Iberdrola also provided concessions to PG&E on [REDACTED] that the utility views as advantageous compared to

Iberdrola's opening position. Arroyo agrees, for example, that [REDACTED]

[REDACTED] thus benefitting ratepayers.

One indicator of the fairness of negotiations is whether PG&E provided Iberdrola with unique and valuable concessions that were not provided to competing sellers of unbundled RECs. PG&E was negotiating two other ten-year REC-only transactions with competing sellers, Sterling Planet, Inc. and NextEra Energy Power Marketing LLC, at the same time as discussions with Iberdrola. Arroyo does not in general have access to detailed contract terms for other REC-only transactions the utility has executed, though Arroyo did serve as IE for two of PG&E's short-term purchases of RECs bundled with firm deliveries at the California-Oregon Border from Barclays Bank PLC. These purchases from Barclays, originally executed in early 2010, were amended by the parties in 2013.

In the case of NextEra Energy Power Marketing and Sterling Planet, [REDACTED]

[REDACTED] Based on these comparisons it appears that Iberdrola was not materially advantaged against current competitors in the non-price contract terms of its PSA, though disparities that likely have little cost impact remain.

The confirmation agreements with Barclays Bank executed in 2010 did specify particular generation projects to deliver the product; this was consistent with the nature of the deliverables as firmed bundled RPS-eligible energy. [REDACTED]

[REDACTED] It appears that the Iberdrola contract has stronger ratepayer protections in these specific areas than the older Barclays agreements that were recently amended.

Arroyo did not observe PG&E providing Iberdrola with non-public information that advantaged it against competing sellers. Because PG&E approached several possible intermediaries seeking to purchase unbundled RECs on a bilateral basis, Arroyo does not believe that Iberdrola was singled out for favored treatment or that other market participants were disadvantaged by the choice to conduct bilateral negotiations with Iberdrola. Furthermore, any market participant could have chosen to offer Category 3 RECs into PG&E's 2012 RPS RFO [REDACTED]

On that basis it is Arroyo's opinion that PG&E's negotiations with Iberdrola were, overall, conducted fairly in regards to the treatment of competitors. The ratepayer impact of

PG&E granting Iberdrola the latitude to select the specific project to deliver RECs later, without specifying the project in the contract, is discussed in the next chapter.

## 6. MERIT FOR CPUC APPROVAL

This chapter provides an independent review of the merits of the contract between PG&E and Iberdrola Renewables, LLC against criteria identified in the Energy Division's 2012 RPS IE template.

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### A. CONTRACT SUMMARY

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On September 25, 2013, PG&E and Iberdrola Renewables, LLC executed a purchase and sale agreement for delivery of Category 3 RECS from a yet-to-be-determined set of eligible renewable resources. An appendix of the PSA names [REDACTED] but the terms of the contract do not in any way constrain the seller to deliver RECs that originate from [REDACTED]

Under the terms of the PSA, Iberdrola will deliver 136,000 RECs of vintage 2012 and/or 2013 in the first contract year commencing upon satisfaction of conditions precedent, e.g. final CPUC approval. In contract years 2 through 10 Iberdrola will deliver 1,500 RECs per year beginning with 2014-vintage RECs, for total deliveries of 149,500 RECs. As a ten-year contract, PG&E expects that the RECs will be bankable for future use in RPS compliance.

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### B. NARRATIVE OF EVALUATION CRITERIA AND RANKING

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The 2012 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 economic benefit of the Iberdrola transaction to other comparable transactions for unbundled RECs. The comparison is hampered by the paucity of market comparables; PG&E has executed relatively few transactions for unbundled RECs and even fewer that qualify as long-term transactions for which the RECs are bankable for future RPS compliance needs. Arroyo does not have access to pricing information of proposals or executed transactions of comparable products for other utilities.

Contract Price. Iberdrola's deliveries to PG&E would be priced on a schedule [REDACTED]

[REDACTED]

PG&E executed two other ten-year PSAs for Category 3 RECs in September 2013: one with Sterling Planet, Inc. that resulted from Offers into PG&E's 2012 RPS RFO, and one with NextEra Energy Power Marketing, LLC, that resulted from bilateral negotiations in parallel with the discussions with Iberdrola. Both have roughly analogous schedules for delivery of annual vintages over a ten-year term, described separately in other IE reports. The weighted average nominal price [REDACTED]

In the spring and summer of 2013, PG&E amended two contracts for purchase of bundled shaped-and-firmed energy and RECs that it originally executed with Barclays Bank PLC in early 2010. The RECs originated in two separate wind generation facilities in the Pacific Northwest, both non-California eligible renewable resources. The contracts as amended provide for one year of deliveries to PG&E at the California-Oregon Border; [REDACTED]

[REDACTED] Despite the fact that these contracts are now effectively for one year of delivery term for RECs, the Barclays contracts resemble the Iberdrola transaction in that PG&E expects them to receive grandfathered treatment for compliance purposes so that the RECs will "count in full" for use against future RPS compliance needs, e.g. like the Iberdrola contract the RECs would be bankable for future use.

There are relatively few analogous proposals or market transactions for unbundled RECs whose pricing is publicly available to serve as comparable benchmarks to the Iberdrola PSA. In PG&E's 2012 RPS RFO, [REDACTED]

Among municipal utilities, the Turlock Irrigation District has been shopping for RECs and in March 2012 cited broker quotes as the basis for its expectation that their purchase price will be less than \$4/REC.<sup>24</sup> At a similar point in time, the city of Palo Alto estimated the price of Category 3 RECs to be \$5/REC.<sup>25</sup> The city of Azusa's RPS Procurement Plan, adopted November 26, 2012, was accompanied by a staff estimate of Category 3 RECs to be priced in the \$1 to \$3/REC range; Azusa anticipates procuring Category 3 RECs if there is no unmet need for incremental energy procurement. These anecdotal reports do not provide hard evidence of actual transactions of Category 3 RECs in the \$1 – 5/REC range as opposed to indicative expressions of interest.

Other municipal utilities have been purchasing Category 3 RECs from out-of-state resources in order to bridge a gap before new long-term contracted resources come on line; for example, the city of Pasadena took deliveries from six REC transactions in 2011-2012, totaling about 132,000 RECs, mostly from hydroelectric generators in Oregon and a wind facility in Washington, but has not publicly reported the pricing of those contracts. The city of Riverside reports having purchased 162,500 Category 3 RECs but similarly has not

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<sup>24</sup> Letter from Dan Severson, Turlock Irrigation District, to California Energy Commission regarding Docket #11-RPS-01, March 30, 2012.

<sup>25</sup> "Modification of Renewable Portfolio Standard", City of Palo Alto, Finance Committee Staff Report, March 20, 2012.

reported the cost.<sup>26</sup> The city of Anaheim's draft 2011 Renewable Procurement Plan projected purchases of 117,000 Category 3 RECs in 2012 at an assumed price of \$11/REC.<sup>27</sup> In March 2013, Anaheim subsequently revised its volume estimate to 136,000 Category 3 RECs to purchase for compliance period 1, but stopped making the cost estimate public.

Given the scanty hard pricing data for actual recent transactions of Category 3 RECs, Arroyo finds it difficult to render a solid opinion on the ranking of the Iberdrola PSA's pricing with any confidence.

Arroyo speculates that passage of SB X1-2 has dramatically shifted the supply-demand balance for unbundled RECs produced by non-California eligible renewable resources in the WECC. Where prior to the change in law there was lively demand by California IOUs for PPAs for shaped-and-firmed deliveries from these projects into the state, the passage of the law appears to have reduced IOUs' demand for both Category 2 and 3 deliveries by imposing constraints and creating a strong preference for Category 1 deliveries. Also, the RECs produced by out-of-state generators in 2012 and 2013 have a narrow time window before they must be retired or lose their benefit. Without conducting a rigorous analysis of the supply curve for non-California WECC renewable production and the demand for Category 3 deliveries from California IOUs and municipal utilities, it appears that a temporary bubble of oversupply from these vintages (and from 2011) may exist.

Also, prior PPAs for shaped-and-firmed out-of-state renewable energy that were executed in the 2008 – 2010 period had pricing [REDACTED] in part because of the IOUs' urgent need to meet the 2010 RPS compliance target; now the utilities appear to have little motivation to buy incremental RECs for the first or second compliance periods. If the demand for Category 3 RECs on the part of the few municipal utilities that appear to be buying them is merely in the hundreds of thousands of RECs, then the IOUs would seem to be in a buyers' market regarding pricing power for the 2012 and 2013 vintages of Category 3 RECs.

This situation may not persist; [REDACTED]

On that basis, Arroyo's qualified opinion is that the Iberdrola PSA's weighted average price [REDACTED] ranks as low. It is low compared to PG&E's recent transactions for Category 3 RECs through contract amendments. It is low compared to the Offers for Category 3 RECs received in PG&E's 2012 RPS RFO. It is low when viewed against recent anecdotal reports of municipal utilities as they consider their strategies for RPS compliance. This opinion is qualified because of the very limited set of market data available to the IE that form the basis for comparison.

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<sup>26</sup> "Riverside Public Utilities (RPU) Renewable Portfolio Standard (RPS) Procurement Plan for the California Renewable Energy Resource Act (SB X1-2)", City of Riverside, May 14, 2013.

<sup>27</sup> "Anaheim RPS Policy (SBX1 2) Procurement Plan and Enforcement Program 2011", City of Anaheim, Public Utilities Department, December 16, 2011, page 8.

Market Valuation. In presenting the proposed Iberdrola bilateral PSA to its Procurement Review Group in August 2013, the utility estimated the “portfolio-adjusted value” (PAV) of the contract [REDACTED] This is equal to the net market value of the PSA, [REDACTED] plus an adjustment [REDACTED]

[REDACTED] The other adjustments in PG&E’s methodology for PAV such as for energy firmness and location do not apply because the PSA conveys neither energy nor capacity.

Arroyo does not find it particularly helpful to compare the PAV of this REC-only contract to recent proposals for Category 1 deliveries such as proposals to PG&E’s most recent RAM RFO or the 2012 RPS RFO. The products are quite different, particularly in the degree of freedom for which they can be used for RPS compliance. Arroyo agrees that the \$/REC price of the Category 3 deliveries from the Iberdrola contract are much lower than the \$/MWh cost of the renewable attributes implicit in recent ten-year Category 1 proposals with delivery start dates in 2014 and 2015. (However, PG&E assigned several ten-year bundled delivery Offers with start dates in 2019 and 2020 with even higher Portfolio-Adjusted Values in the range of [REDACTED] PG&E rejected these higher-valued Offers from its RPS RFO short list.)<sup>28</sup> Arroyo speculates above that this is a temporary feature of a supply-demand dislocation in the WECC market caused by SB X1-2 and by the impending expiry of 2012 and 2013-vintage RECs, and also symptomatic of the issues with projects that propose only a ten-year delivery term.

In PG&E’s 2012 RPS RFO the utility gave explicit notice that it preferred Offers with a 2019 or 2020 commercial operation date. As a consequence, Participants who offered ten-year PPAs with a 2014 or 2015 on-line date appear to have done so because they have existing operational generators whose existing contracts are expiring in those years. These are mostly [REDACTED] whose economics for bundled energy delivery are uncompetitive [REDACTED] Arroyo does not view this peer group as a useful comparison to a ten-year Category 3 PSA, but agrees with PG&E that the net value to ratepayers of the Iberdrola PSA is likely much more attractive than the PAV [REDACTED] for the ten-year RPS RFO Offers with 2014 or 2015 on-line dates.

Similarly, Arroyo does not view a comparison of the Iberdrola ten-year REC-only transaction to fifteen- or twenty-year Offers for bundled Category 1 deliveries from the RPS RFO as helpful. The shortlisted Offers from the RFO almost all have positive PAV estimates well above that of the Iberdrola PSA. However, that is largely because for the purpose of valuation PG&E has assumed that market prices in the decade of the 2030s will have escalated [REDACTED] and because

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<sup>28</sup> This comparison illustrates a flaw in comparing Category 1 to Category 3 transactions using PG&E’s Portfolio-Adjusted Valuation methodology. If this PSA were priced to deliver unbundled RECs to PG&E at a price of zero, its PAV would be about [REDACTED] however, the rejected PPA Offers were valued at PAVs of up to [REDACTED] Arroyo would agree with PG&E that a contract that delivered unbundled RECs for free would be more valuable to ratepayers than a reasonably priced but not highly competitively priced PPA.

PG&E's PAV method adds [REDACTED] Arroyo does not believe the direct comparison of PAV for a twenty-year PPA starting in 2020 to a REC-only transaction is very helpful. [REDACTED]

other ten-year Offers into the RFO had PAVs well above that of the Iberdrola PSA, but were not shortlisted by the utility based on its screening approach, described earlier in this report in footnote 20.

Arroyo does not have access to the Offer pricing of PG&E's recent RAM RFO, but speculates that Participants who offered only a ten-year proposal into that solicitation would likely be presenting an older existing facility with a limited remaining economic life rather than a new project whose construction needs to be financed by a fifteen- or twenty-year contract.

Instead of comparing the bilaterally negotiated Iberdrola PSA to Category 1 Offers in valuation, Arroyo's opinion is that the ranking of the contract should be based on the inverse of its rank in pricing against PG&E's recently amended REC-only transactions and to other recent REC-only proposals from the 2012 RPS RFO and bilateral discussions. Arroyo's conditional opinion is that the Iberdrola PSA ranks high in net value, with the caveat that comparable transactions are so scanty as to make judgment difficult.

#### PORTFOLIO FIT

Deliveries from the Iberdrola PSA would begin upon final CPUC approval, so PG&E expects the projects to start deliveries in 2014. The utility currently anticipates a net long RPS compliance position through 2020; thus, the contract is expected to exacerbate PG&E's overprocurement of RECs for the first several years of its term, contributing further to a build-up of banked RECs for future use. In that sense the contract fits poorly into the utility's portfolio needs.

In its 2012 RPS RFO, PG&E eliminated its prior use of a stand-alone metric for portfolio fit and developed an adjustment used in calculating Portfolio-Adjusted Value that measures RPS Portfolio Need [REDACTED]

[REDACTED] The adjustment to PAV is based on the levelized value of annual adjustments. It is in a sense an upwards adjustment to valuation for the degree to which RPS deliveries from a proposed contract provide a good fit with time periods in which the utility's portfolio has a compliance need.

PG&E reports that the RPS Portfolio Need adjustment in the case of the Iberdrola PSA is [REDACTED]

In contrast, the average RPS Portfolio Need adjustment for Offers received in the 2012 RPS RFO was [REDACTED]. The proposals for Category 1 deliveries that PG&E shortlisted for the solicitation ranged in RPS Portfolio Need adjustment from [REDACTED]



██████████ On that basis, using PG&E's own metric that reflects fit of the timing of deliveries with the utility's portfolio in compliance need, the Iberdrola PSA ranks low.

The ranking of the Iberdrola contract as low in portfolio fit is partly mitigated by some circumstances. PG&E expects that as a ten-year contract, the long-term nature of the PSA will make the RECs bankable for future use in meeting compliance needs, so that the fact that the utility will take delivery during periods when the utility expects excess RPS procurement simply means that PG&E is paying very early for products from which PG&E expects ratepayers to benefit much later.

The utility is in essence paying a carrying cost, expending ratepayer funds in 2014 for a product that will be stored until its actual use to meet RPS compliance goals after 2020. The metric of the RPS Portfolio Need adjustment does not take into account the carrying cost or the bankability of these Category 3 RECs. ██████████

██████████ If PG&E were to apply its weighted average cost of capital of 7.6% as a measure of the time value of money to contract year 1 purchases, the carrying cost would add more than 50% to the cost of those RECs if held to 2020. This contrasts to PG&E's recent strategy of contracting in 2013 for Category 1 deliveries starting in 2019 and 2020 with payments beginning upon initial energy deliveries.

██████████ if this turns out to be true, then executing the Iberdrola PSA is a lower-cost strategy than waiting to purchase Category 3 RECs closer to the year (2019 or later) of need. ██████████ Arroyo has no independent source of forward price view for Category 3 RECs on which to form an opinion ██████████

### PROJECT VIABILITY

In the negotiations for the Iberdrola PSA, the seller made clear that it has no intention of being constrained to delivering RECs solely from ██████████ facilities listed in Appendix III of the PSA. Instead, PG&E and Iberdrola agreed that that table will serve "for reference only". Thus, Iberdrola is free to deliver RECs from any project, whether its own facilities or other owner/operators', whether operational now or yet to be built, but the seller's representations and warranties require Iberdrola to deliver from project(s) certified by the California Energy Commission as eligible renewable resources. The contract requires Iberdrola to provide written documentation of certification upon request.

The Energy Division's 2012 RPS report template for Independent Evaluators calls for IEs to provide a ranking of the project for project viability, including scoring using the ED's

Project Viability Calculator. In this case, Arroyo cannot provide such a ranking when the projects from which RECs are to be sourced are unidentified and unidentifiable.<sup>29</sup>

[REDACTED] facilities listed in Appendix III of the PSA are existing, operating projects that have been delivering RPS-eligible energy [REDACTED]. If the contract required deliveries from these specific, existing projects, Arroyo's opinion would be that the project viability of the PSA ranks as high. Given the fungibility of delivery source, Arroyo ranks the project viability of the PSA as indeterminate, not having a specific project or projects to evaluate using the Energy Division's project viability calculator. It is entirely possible that future deliveries of RECs from this contract will originate from facilities that are not yet constructed. PG&E will rely on the contractual representations and warranties of the PSA rather than on the specific physical nature of particular wind farms or their owners/operators' experience as the basis for ensuring the viability and RPS-eligibility of deliveries of RECs from this transaction. Arroyo has no legal credentials or expertise, but regards the contract terms governing the delivery of RECs from CEC-certified facilities as fairly strong in ratepayer protections.

As a practical matter, Arroyo notes that Iberdrola owns and operates more than 1,500 MW of wind generation in the WECC outside California. Iberdrola's business model appears to be to continue to own wind farms that it develops, and to contract the energy and renewable attributes produced by those facilities. While most of those projects are already under long-term contracts including sale of their renewable attributes to California IOUs, California municipal utilities, and IOUs and municipal utilities in other states, Arroyo doubts that Iberdrola would have any difficulty finding just 1,500 RECs per year to deliver to PG&E out of its own WECC portfolio if it chose to do so. [REDACTED]

This observation tends to mitigate Arroyo's concern about the IE's inability to score the facilities that will deliver RECs under this PSA using the Project Viability Calculator. Arroyo acknowledges that the strength of the contractual representations, warranties, and damage payments that obligate Iberdrola to deliver RECs from eligible renewable resources make it likely that this large owner of renewable projects in the WECC will deliver the required

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<sup>29</sup> In a sense, PG&E has granted Iberdrola a strip of options to select whatever generating plant it chooses each year in the future as the source of REC deliveries. When negotiating PPAs for Category 1 deliveries, PG&E very seldom provides optionality to sellers about the source of renewable energy. [REDACTED]

[REDACTED] Iberdrola argues that a tradable REC should be a more commoditized product for which the actual physical source of the renewable attributes should matter little as long as the project's CEC certification must be verified under the contract terms. Arroyo finds merit in Iberdrola's characterization of how Category 3 products should be traded, but notes that PG&E's 2012 RPS solicitation protocol explicitly subjects REC-only Offers to the same project viability evaluation criterion as other products delivered by eligible renewable resources. On that basis, Arroyo expects that Iberdrola's bilaterally negotiated Category 3 transaction should, in fairness, be subjected to the same evaluation against the project viability criterion as other Offers.

product on schedule despite the IE's inability to score the PSA using the Project Viability Calculator. If one were to use a different definition of the project viability criterion than that specifically employed in PG&E's 2012 RPS RFO, one might conclude that the Iberdrola PSA ranks moderate to high in viability based on the contract terms that safeguard delivery of certified RECs and on Iberdrola's position as a large operator of western wind generation. In this report, however Arroyo applies the same specific viability criterion stated in PG&E's solicitation protocol from the 2012 RPS RFO.

### RPS GOALS

In PG&E's 2012 RPS RFO, the utility applied an evaluation criterion for consistency with and contribution to California's goals for the RPS program. Offers were evaluated on three dimensions:

- California-based projects providing benefits to communities afflicted with poverty, high unemployment, or high emission levels;
- Impact of the project on California's water quality and use;
- Contribution to the biomass goal of Executive Order S-06-06.

The elements of this evaluation criterion were narrowed considerably from those in PG&E's prior RPS RFOs.

It seems unlikely that the projects from which RECs delivered under this PSA will be located in California. Rather, it appears to Arroyo that one main reason why the pricing ranks low is that the projects Iberdrola later chooses to deliver the RECs will be outside California and their output cannot qualify as Category 1 deliveries. It is impossible to determine whether the RECs will be sourced from biomass-fueled projects because the contract does not bind Iberdrola to source them from specific facilities, though Arroyo speculates, with no data, that the RECs may be likelier to be provided by wind generation facilities than from biomass-fueled projects. On that basis Arroyo's opinion is that the Iberdrola PSA likely does not contribute to the RFO Goals evaluation criterion as defined narrowly in PG&E's 2012 RPS RFO.<sup>30</sup>

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### **C. DISCUSSION OF MERIT FOR APPROVAL**

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Arroyo offers a qualified opinion that the Iberdrola REC-only transaction likely merits CPUC approval, but with reservations:

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<sup>30</sup> Arroyo does not regard this contract's lack of contribution to RPS Goals as defined in PG&E's solicitation protocol as a fatal flaw. Many of the executed contracts in PG&E's prior RPS RFOs similarly failed to contribute benefits to impoverished or polluted communities, provide clear consistency with the CPUC's Water Action Plan, or contribute to the biomass goal, but were judged by Arroyo to merit approval based on their rankings in price, value, project viability, and portfolio fit.

- In a qualified opinion, Arroyo ranks the Iberdrola PSA as low in price and high in net value when compared to analogous REC-only transactions. This opinion is qualified by the observation that there are few comparable transactions on which to base a ranking. Arroyo does not consider it useful to directly compare the net valuation of the REC-only transaction to the Portfolio-Adjusted Value of bundled Category 1 proposals with similar on-line dates because such Offers with ten-year terms tend to be uncompetitive existing projects and because longer-term Offers with much later on-line dates benefit in their PAV estimates from artifacts of PG&E's methodology that do not apply to the Iberdrola transaction.
- Using a metric for portfolio fit that PG&E employed in its 2012 RPS RFO, Arroyo ranks the fit of the Iberdrola PSA as low compared to other recent proposals to PG&E. This low ranking is somewhat mitigated by the expectation that the delivered RECs can be banked for meeting compliance needs much later, despite the mismatch between their delivery and the periods in which PG&E expects to need RECs. Arroyo does not believe that PG&E's Net Market Value and Portfolio-Adjusted Value metrics address the issue of what the carrying costs borne by ratepayers will be when buying RECs in 2014, banking them, and then using them for compliance needs in 2020 or later.<sup>31</sup>
- Arroyo's opinion is that the ranking of the Iberdrola PSA for project viability, using the criterion defined in PG&E's 2012 RPS solicitation protocol, is indeterminate, absent any clear view on what project or projects will provide the RECs that will be delivered under the contract. Arroyo's concerns about this lack of specificity are somewhat mitigated by the contractual representations and warranties that bind the seller to deliver from CEC-certified eligible renewable resources, and by Iberdrola's likely ability to meet required contract volumes from its own WECC facilities, if it were to choose to do so.
- Arroyo expects that the Iberdrola PSA will likely not contribute to the (narrow) version of the RFO Goals evaluation criterion that PG&E employed in its 2012 RPS solicitation.

Arroyo has some reservations about the merit of the Iberdrola PSA for CPUC approval. On one hand, Arroyo agrees with PG&E's view that the pricing of the transaction will likely compare favorably with future alternatives for procuring Category 3 RECs. Arroyo's concerns about the low ranking of the PSA's portfolio fit compared to competing alternatives are somewhat mitigated in part by the expected bankability of the RECs for later use. Arroyo also agrees that it is probably imprudent to compare the Iberdrola transaction to twenty-year PPAs for Category 1 deliveries when ranking the contract on Portfolio-Adjusted Value, in part because of the nature of PG&E's methodology in elevating estimates of the PAV of long-term contracts, in part because the products differ in their likely cost

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<sup>31</sup> PG&E has separately performed a net present value analysis specifically for this and other recently executed REC-only PSAs that takes into account the time value of money to compare the alternate strategies of buying RECs now vs. later. Arroyo does not have access to the detailed inputs to that analysis and has not independently verified the validity of the comparison.

impact on managing the California grid, and in part because PG&E's PAV methodology credits the PPAs with value based on superior portfolio fit that it fails to credit to the Iberdrola PSA despite the bankability of its RECs.

On the other hand, Arroyo acknowledges that PG&E rejected several Offers for ten-year delivery of Category 1 power that would have provided better Portfolio-Adjusted Values than the Iberdrola transaction. Arroyo also acknowledges that relying on the contractual representations and warranties of the PSA to ensure that the RECs are from viable, eligible, but unidentified renewable generators (existing or yet to be built) is not as comforting as both having those warranties and knowing that specific operational projects have a high likelihood of continuing to generate renewable energy for the next decade. Iberdrola's insistence that it not be constrained to produce the RECs from any specific facility defeats Arroyo's obligation to evaluate project viability in a manner consistent with the requirements of PG&E's 2012 RPS RFO, though the IE speculates that the strength of the PSA's contract obligations and the provisions for an event of default will likely motivate Iberdrola to make timely deliveries of required product.

On balance, Arroyo's own opinion is that the Iberdrola transaction likely merits CPUC approval because of its apparently low price and high value, but the IE acknowledges that policymakers could easily view the questions and issues cited above as materially weakening the merits of the transaction. Arroyo acknowledges that one could construct a case that a transaction that ranks low in portfolio fit and whose viability is indeterminate should not merit approval, given that those two evaluation criteria are among those carefully employed by PG&E in evaluating other RPS transactions.

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

1st Light Energy	Douglass & Liddell	OnGrid Solar
AT&T	Downey & Brand	Pacific Gas and Electric Company
Alcantar & Kahl LLP	Ellison Schneider & Harris LLP	Praxair
Anderson & Poole	G. A. Krause & Assoc.	Regulatory & Cogeneration Service, Inc.
BART	GenOn Energy Inc.	SCD Energy Solutions
Barkovich & Yap, Inc.	GenOn Energy, Inc.	SCE
Bartle Wells Associates	Goodin, MacBride, Squeri, Schlotz & Ritchie	SDG&E and SoCalGas
Braun Blasing McLaughlin, P.C.	Green Power Institute	SPURR
CENERGY POWER	Hanna & Morton	San Francisco Public Utilities Commission
California Cotton Ginners & Growers Assn	In House Energy	Seattle City Light
California Energy Commission	International Power Technology	Sempra Utilities
California Public Utilities Commission	Intestate Gas Services, Inc.	SoCalGas
California State Association of Counties	Kelly Group	Southern California Edison Company
Calpine	Linde	Spark Energy
Casner, Steve	Los Angeles Dept of Water & Power	Sun Light & Power
Center for Biological Diversity	MAC Lighting Consulting	Sunshine Design
City of Palo Alto	MRW & Associates	Tecogen, Inc.
City of San Jose	Manatt Phelps Phillips	Tiger Natural Gas, Inc.
Clean Power	Marin Energy Authority	TransCanada
Coast Economic Consulting	McKenna Long & Aldridge LLP	Utility Cost Management
Commercial Energy	McKenzie & Associates	Utility Power Solutions
County of Tehama - Department of Public Works	Modesto Irrigation District	Utility Specialists
Crossborder Energy	Morgan Stanley	Verizon
Davis Wright Tremaine LLP	NLine Energy, Inc.	Water and Energy Consulting
Day Carter Murphy	NRG Solar	Wellhead Electric Company
Defense Energy Support Center	Nexant, Inc.	Western Manufactured Housing Communities Association (WMA)
Dept of General Services	North America Power Partners	
Division of Ratepayer Advocates	Occidental Energy Marketing, Inc.	