Pacific Gas and Electric Company

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Advice 4441-E
(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: **Power Purchase and Sale Agreement for Bundled Energy Sales Between Tenaska Power Services Co. 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 power purchase and sale agreement ("PPSA" or "Transaction") with Tenaska Power Services Co. ("Tenaska"). Under the Transaction, PG&E is the seller of 50,000 megawatt hours ("MWh") of bundled renewable energy and green attributes. This short-term Transaction has an energy delivery period[1] commencing on April 23, 2014 and ending no later than October 31, 2014. The bundled renewable product will be provided from a number of operating geothermal and hydroelectric facilities located within the state of California. Generation from all of these facilities is in PG&E's current Renewables Portfolio Standard ("RPS") Program portfolio.

B. Identify the subject of the advice letter, including:

1. Project name

The PPSA allows PG&E to deliver the bundled renewable product from various facilities located throughout California and certified by the California Energy Commission ("CEC") that are currently under contract with PG&E for bundled RPS-eligible energy (collectively "Projects") as follows[2].

[1] The green attribute delivery period will end on the date PG&E has transferred the total volume of green attributes to Tenaska.

[2] Although PG&E has discretion to select the facility, PG&E anticipates that the following six Projects will be the primary facilities from which the Product will be delivered: Geysers Power Plant - Calpine Geothermal Units 13, 16, and 18 and Placer County Water Agency's ("PCWA") French Meadows Powerhouse 2, Oxbow Powerhouse 1, and Hell Hole Powerhouse 1.

Name of Facility/ Owner	Resource	Location	CEC RPS ID	Host Balancing Authority
Geysers Power Plant - Calpine Geothermal Unit 11/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60025B	CAISO
Geysers Power Plant - Calpine Geothermal Unit 12/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60004A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 13/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60005A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 14/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60026B	CAISO
Geysers Power Plant - Calpine Geothermal Unit 16/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60006A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 17/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60007A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 18/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60008A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 20/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60009A	CAISO
Geysers Power Plant - Calpine Geothermal Unit 7-8/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60003A	CAISO

Geysers Power Plant - Sonoma/Calpine Geyser/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60010A	CAISO
Geysers Power Plant - Calistoga Power Plant/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60117A	CAISO
Geysers Power Plant - West Ford Flat Power Plant/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60114A	CAISO
Geysers Power Plant - Aidlin Power Plant/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60115A	CAISO
Geysers Power Plant - Bear Canyon Power Plant/ Geysers Power Company, LLC	Geothermal	Middletown, CA	60112A	CAISO
PCWA (French Meadows Powerhouse 2)/ Placer County Water Agency	Small Hydro	Forestville, CA	60268A	CAISO
PCWA (Oxbow Powerhouse 1) / Placer County Water Agency	Small Hydro	Forestville, CA	60269A	CAISO
PCWA (Hell Hole Powerhouse 1) / Placer County Water Agency	Small Hydro	Forestville, CA	60234A	CAISO

2. Technology (including level of maturity)

The Projects from which the energy and Renewable Energy Credits ("RECs") are being sold consist of geothermal and small hydro renewable technologies, both mature and proven technologies.

3. General Location and Interconnection Point

The Projects are all located within California and are interconnected with the California Independent System Operator ("CAISO").

4. Owner(s) / Developer(s)

a. Name(s)

The owners of the facilities PG&E anticipates selecting are listed above.

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

The Geysers Power Company is a limited liability company and PCWA is a California local governmental entity. Tenaska, the buyer of this bundled product, is a power marketer.

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

In the past, PG&E has contracted to purchase bundled renewable energy from the owners of these Projects through power purchase agreements ("PPAs") that have previously received Commission approval.

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

All the Projects included in the proposed PPSA are existing and operating facilities.

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

The PPSA resulted from bilateral negotiations.

7. If an amendment, describe contract terms being amended and reason for amendment

N/A.

C. General Project(s) Description

The Projects are described in Section B.1. above. The Transaction terms are:

Project Name	Tenaska North America, LLC
Technology	Geothermal and Small Hydro
Capacity (MW)	N/A
Capacity Factor	N/A
Expected Generation (GWh/Year)	50,000 MWh
Initial Commercial Operational Date	April 23, 2014
Date contract Delivery Term begins	April 23, 2014

Delivery Term (Years)	From April 23, 2014 to no later than October 31, 2014[3] (approximately 6 months)
Vintage (New / Existing / Repower)	Existing
Location (city and state)	Various throughout California
Control Area (e.g., CAISO, BPA)	CAISO
Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI)[4]	N/A
Type of cooling, if applicable	N/A

D. Project location

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

Given the nature of the Transaction and the number of locations, it is not practicable to include a locational map in this filing.

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

All generation is from existing projects.

E. General Deal Structure

Describe general characteristics of contract, for example:

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

PG&E will sell bundled renewable energy and green attributes that qualify as Portfolio Content Category ("PCC") One to the buyer. PG&E presently purchases the bundled renewable energy and green attributes under contracts that qualify as PCC 0 or PPC 1.

2. Partial/full generation output of facility

N/A.

3. Any additional products, e.g. capacity

No.

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

[3] The green attribute delivery period will end on the date PG&E has transferred the total volume of green attributes to Tenaska.

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

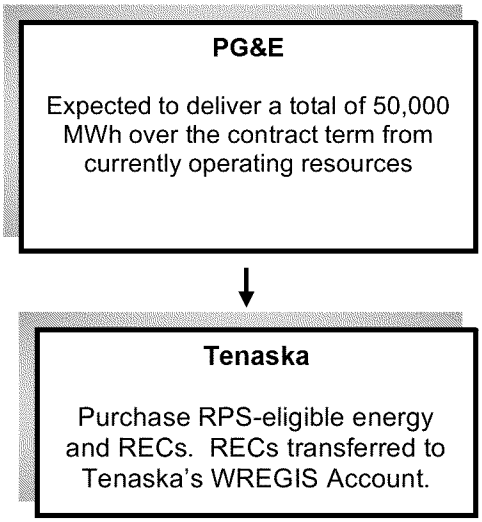
NP-15.

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

N/A.

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 the state's transmission and land use planning activities.

Public Utilities Code §399.11 states that increasing California's reliance on eligible renewable energy resources is intended to displace fossil fuel consumption within the state, promote stable electricity prices, reduce greenhouse gas ("GHG") emissions, improve environmental quality and promote the goal of a diversified and balanced energy generation portfolio. The Projects are consistent with these goals because they generate clean energy and will produce little, if any, GHG emissions directly associated with energy production.

2. Describe how procurement pursuant to the contract will meet IOU's specific RPS compliance period needs. Include Renewable Net Short calculation as part of response.

Senate Bill ("SB") 1078 established the California RPS Program, requiring an electrical corporation to increase its use of eligible renewable energy resources to twenty percent of its total retail sales no later than December 31, 2017. The legislature subsequently accelerated the RPS goal to reach twenty 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 ("CP2") (2014-2016) that is consistent with the following formula: (.217 * 2014 retail sales) + (.233 * 2015 retail sales) + (.25 * 2016 retail sales).
- Sufficient procurement during the third compliance period ("CP3") (2017-2020) that is consistent with the following formula: (.27 * 2017 retail sales) + (.29 * 2018 retail sales) + (.31 * 2019 retail sales) + (.33 * 2020 retail sales).
- Thirty-three percent of bundled retail sales in 2021 and all years thereafter.

Consistent with the Energy Division Staff methodology for calculating the renewable net short ("RNS")[5], PG&E provides a RNS calculation in Table 1[6] below. PG&E also provides an Alternative RNS calculation (the "Alternative RNS") in Table 2[7] also below. There are two main differences between the RNS and the Alternative RNS. First, the RNS utilizes PG&E's Bundled Retail Sales Forecast for years 2014-2018 and the Long Term Procurement Plan proceeding methodology for 2019-2033, while the Alternative RNS relies on PG&E's internal Bundled Retail Sales Forecast for 2014-2033. Second, the Alternative RNS presents a modified display of PG&E's RNS in order to adequately show the results from PG&E's stochastic optimization of its RPS position. Further details on PG&E's stochastic optimization approach can be found in PG&E's proposed 2014 Renewable Procurement Plan ("RPS Plan") which was filed on June 4, 2014.[8]

As illustrated in PG&E's Alternative RNS, PG&E's existing RPS portfolio is expected to provide sufficient RPS-eligible deliveries to meet PG&E's RPS compliance requirements in

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[5] See Administrative Law Judge's Ruling on Renewable Net Short issued on May 21, 2014, including subsequent changes to the RNS reporting template per direction from the Energy Division on May 29, 2014.

[6] See Confidential Appendix A, "Consistency with Commission Decisions and Rules and Project Development Status", of this AL to access the confidential version of Tables 1 and 2.

[7] Ibid.

[8] Please note PG&E did not utilize its proposed 2014 RPS Plan when determining procurement need for this transaction. PG&E's proposed 2014 RPS Plan has yet to receive Commission approval. Therefore, PG&E utilized its currently approved 2013 RPS Plan which was also PG&E's most recently approved RPS plan at the time of execution of this agreement.

CP2. PG&E's sale of 50,000 MWh of bundled renewable energy and green attributes through the Transaction reduces overall RPS compliance costs for PG&E customers with a negligible reduction in PG&E's RPS position.

Table 1: Renewable Net Short Calculation as of May 2014

Net Short Calculation Using PG&E Bundled Retail Sales Forecast In Near Term (2014 - 2018) and LTPP Methodology (2019 - 2033)

Variable	Calculation	Item	Deficit from RPS prior to Reporting Year	2011 Actuals	2012 Actuals	2013 Actuals	2011-2013	2014 Forecast	2015 Forecast	2016 Forecast	2014-2016	2017 Forecast	2018 Forecast	2019 Forecast	2020 Forecast	2017-2020	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast	2031 Forecast	2032 Forecast	2033 Forecast
		Forecast Year					CP1				CP2					CP3													
		Annual RPS Requirement																											
A		Bundled Retail Sales Forecast (LTPP) [1]		74,864	76,205	75,205	226,274	74,186	75,103				76,127	78,891	79,463		79,938	80,411	80,666	80,841	81,057	81,273	81,490	81,708	81,926	82,145	82,364	82,584	82,804
B		RPS Procurement Quantity Requirement (%)		20.0%	20.0%	20.0%	20.0%	21.7%	23.3%	25.0%	23.3%	27.0%	29.0%	31.0%	33.0%	30.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
C	A*B	**Gross RPS Procurement Quantity Requirement (GWh)**		14,973	15,241	15,141	45,355	16,074	17,524				22,077	24,456	26,223		26,380	26,536	26,620	26,678	26,749	26,820	26,892	26,964	27,036	27,108	27,180	27,253	27,325
D		Voluntary Margin of Overprocurement [2]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	C+D	**Net RPS Procurement Need (GWh)**		14,973	15,241	15,141	45,355	16,074	17,524				22,077	24,456	26,223		26,380	26,536	26,620	26,678	26,749	26,820	26,892	26,964	27,036	27,108	27,180	27,253	27,325
		RPS-Eligible Procurement																											
Fa		Risk-Adjusted RECs from Online Generation		14,893	14,513	17,173	46,520	19,856	20,681	20,345	60,881	19,903	17,858	17,185	16,356	71,301	15,924	15,500	15,194	12,937	12,934	12,288	12,098	11,959	11,585	11,341	10,994	10,582	9,113
Faa		Forecast Failure Rate for Online Generation (%)		0.0%	0.0%	5.5%	1.8%	0.7%	0.5%	0.5%	0.6%	0.4%	0.4%	0.5%	0.1%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Fb		Risk-Adjusted RECs from RPS Facilities in Development		-	-	-	-	957	2,603	3,045	6,606	3,587	4,015	4,709	5,023	17,334	5,059	5,046	5,034	5,031	5,002	4,990	4,978	4,976	4,954	4,941	4,929	4,927	4,905
Fbb		Forecast Failure Rate for RPS Facilities in Development (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	2.9%	19.6%	16.4%	13.9%	13.4%	21.1%	13.5%	13.5%	13.4%	13.4%	13.4%	13.5%	13.5%	13.5%	13.5%	13.6%	13.7%	13.7%	13.8%
Fc		Pre-Approved Generic RECs		-	-	-	-	-	-	25	25	500	1,139	1,531	1,548	4,748	1,541	1,537	1,533	1,532	1,525	1,521	1,517	1,516	1,509	1,505	1,501	1,501	1,494
Fe		Executed REC Sales		-	-	(142)	(142)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	Fa + Fb +Fc -Fe	Total RPS Eligible Procurement (GWh)		14,893	14,513	17,031	46,377	20,814	23,283	23,415	67,512	24,019	23,011	23,425	22,928	93,383	22,523	20,113	19,761	19,500	19,360	18,798	18,593	18,445	17,848	17,788	17,424	16,780	15,512
F0		Category 0 RECs		14,771	13,035	14,110	41,917	17,404	18,722	18,410	54,537	18,209	16,559	15,870	15,096	65,665	14,627	12,251	11,953	11,737	11,696	11,105	10,866	10,829	10,246	10,250	9,941	9,767	9,125
F1		Category 1 RECs		62	1,478	2,920	4,460	3,409	4,560	5,006	12,975	5,810	6,473	7,555	7,831	27,719	7,895	7,862	7,808	7,763	7,715	7,694	7,667	7,616	7,562	7,538	7,483	7,013	6,387
F2		Category 2 RECs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F3		Category 3 RECs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Gross RPS Position (Physical Net Short)																											
Ga	F-E	**Annual Gross RPS Position (GWh)**		(140)	(728)	1,890	1,022	4,740	5,759				935	(1,031)	(3,295)		(3,856)	(6,423)	(6,859)	(7,178)	(7,388)	(8,022)	(8,359)	(8,519)	(9,189)	(9,320)	(9,756)	(10,473)	(11,814)
Gb	F/A	**Annual Gross RPS Position (%)**		19.8%	19.0%	22.5%	20.5%	28.1%	31.0%				30.2%	29.7%	28.9%		28.2%	25.0%	24.5%	24.1%	23.9%	23.1%	22.7%	22.6%	21.8%	21.7%	21.2%	20.5%	18.7%
		Application of Bank																											
Ha		Existing Banked RECs above the PQR [3,4]																											
Hb		RECs above the PQR added to Bank		(140)	(728)	1,890	1,022	4,740	5,759				935	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Hc		Non-bankable RECs above the PQR		-	31	34	65	48	69	82	199	87	-	-	-	87	-	-	-	-	-	-	-	-	-	-	-	-	-
H	Ha+Hb	Gross Balance of RECs above the PQR (The Bank at Beg. Of Period)																											
Ia		Planned Application of RECs above the PQR towards RPS Compliance [5]																											
Ib		Planned Sales of RECs above the PQR [6]																											
J	H-Ia-Ib	Net Balance of RECs above the PQR (The Bank at End of Period) [7]																											
J0		Category 0 RECs																											
J1		Category 1 RECs																											
J2		Category 2 RECs																											
		Expiring Contracts																											
K		RECs from Expiring RPS Contracts		N/A	N/A	N/A	N/A	1,496	4,166	4,915	10,578	5,468	6,104	6,786	7,666	26,024	7,592	10,357	10,663	10,957	10,959	11,489	11,694	11,806	12,261	12,287	12,606	13,244	14,402
		Net RPS Position (Optimized Net Short)																											
La	(Ga+Ha-Ib-Hc)	**Annual Net RPS Position after Bank Optimization (GWh)** [8]																											
Lb	(Ga+Ha-Ib-Hc)/A	**Annual Net RPS Position after Bank Optimization (%)** [7,8]																											

General Table Notes: Values are shown in GWhr. Fields in grey are protected as Confidential under CPUC Confidentiality Rules.

(1) (Row A) LTPP sales forecast is not representative of PG&E's actual retail sales. Forecasts of retail sales for the first five years of the forecast are generated by PG&E's *Load Forecasting and Research* team every January, and may be updated throughout the year as additional data becomes available.

(2) (Row D) As a portion of the Bank will be used as VMOP, Row D will remain zero. See 2014 RPS Plan for a description of PG&E's VMOP.

(3) (Rows Ha and J) As PG&E's Alternative RNS incorporates additional risk-adjustments to the results from the Physical Net Short, the Bank sizes indicated in Rows Ha and J appear larger than they are in Rows Ha and J of the Alternative RNS, which shows the non-stochastically-adjusted Bank size.

(4) (Rows Ha) At the beginning of each compliance period Row H has subtracted previous compliance non-bankable volumes from the previous compliance period net balance of RECs. For example, the 2021 forecast for Row Ha is equivalent to the Row J in CP3 minus Row He in CP3.

(5) (Row Ia) The results in Ia are only applicable within the context of the stochastic model. Please see the Alternative RNS for the application of the bank.

(6) (Row Ib) The purpose of the planned sales is to minimize the non-bankable volumes, but the actual sales could be a combination of bankable and non-bankable volumes.

(7) (Rows La and Lb) Rows La and Lb incorrectly subtract the non-bankable volumes. Although these volumes can not be carried forward, per Decision 12-06-038, these volumes could be used towards meeting compliance in the current period. Therefore, the non-bankable volumes should be included in the Annual Net RPS Position after Bank Optimization.

(8) (Row Lb) Row Lb incorrectly calculates the Annual Net RPS Position after Bank Optimization. PG&E has changed the formula in the Alternative RNS to (Ga+Ia-Ib+E)/A in order to express these values in a comparable way to the Physical Net Short (%) in Row Gb.

Table 2: Alternate Renewable Net Short Calculation as of May 2014

Stochastically-Optimized Net Short Calculation Using PG&E Bundled Retail Sales Forecast and Corrections to Formulas

Variable	Energy Division RNS Calculation Shorthand	Correcting Apparent Errors in Energy Division Spreadsheet	Item	Deficit from RPS prior to Reporting Year	2011 Actuals	2012 Actuals	2013 Actuals	2011-2013	2014 Forecast	2015 Forecast	2016 Forecast	2014-2016	2017 Forecast	2018 Forecast	2019 Forecast	2020 Forecast	2017-2020	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast	2031 Forecast	2032 Forecast	2033 Forecast
			Forecast Year					CP1				CP2					CP3												
			Annual RPS Requirement																										
A			Bundled Retail Sales Forecast (Alternate) [1]		74,864	76,205	75,705	226,774	74,186	75,103				76,127	76,351	76,599		76,866	77,148	77,448	77,755	78,071	78,406	78,747	79,100	79,449	79,807	80,189	80,587	81,008
B			RPS Procurement Quantity Requirement (%)		20.0%	20.0%	20.0%	20.0%	21.7%	23.3%	25.0%	23.3%	27.0%	29.0%	31.0%	33.0%	30.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
C	A*B		**Gross RPS Procurement Quantity Requirement (GWh)**		14,973	15,241	15,141	45,355	16,074	17,524				22,077	23,669	25,278		25,366	25,459	25,558	25,659	25,763	25,874	25,986	26,103	26,218	26,336	26,462	26,594	26,733
D			Voluntary Margin of Over-procurement [2]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	C+D		**Net RPS Procurement Need (GWh)**		14,973	15,241	15,141	45,355	16,074	17,524				22,077	23,669	25,278		25,366	25,459	25,558	25,659	25,763	25,874	25,986	26,103	26,218	26,336	26,462	26,594	26,733
			RPS-Eligible Procurement																										
Fa			Risk-Adjusted RECs from Online Generation		14,803	14,513	17,173	46,520	19,856	20,689	20,345	60,891	19,903	17,858	17,185	16,356	71,301	15,924	13,530	13,194	12,937	12,834	12,988	12,038	11,953	11,385	11,341	10,994	10,352	9,113
Faa			Forecast Failure Rate for Online Generation (%)		0.0%	0.0%	5.5%	1.8%	0.7%	0.5%	0.5%	0.6%	0.4%	0.4%	0.3%	0.1%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Fb			Risk-Adjusted RECs from RPS Facilities in Development		-	-	-	-	957	2,603	3,045	6,606	3,587	4,015	4,709	5,023	17,334	5,059	5,046	5,034	5,031	5,002	4,990	4,978	4,976	4,954	4,941	4,929	4,927	4,905
Fbb			Forecast Failure Rate for RPS Facilities in Development (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	2.9%	19.6%	16.4%	13.9%	13.4%	21.1%	13.3%	13.3%	13.4%	13.4%	13.4%	13.5%	13.5%	13.5%	13.5%	13.6%	13.7%	13.7%	13.8%
Fc			Pre-Approved Generic RECs		-	-	-	-	-	-	25	25	530	1,139	1,531	1,548	4,748	1,941	1,937	1,933	1,932	1,925	1,921	1,917	1,916	1,909	1,905	1,901	1,901	1,901
Fe			Executed REC Sales		-	-	-	(142)	(142)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	Fa + Fb + Fc - Fe		Total RPS Eligible Procurement (GWh)		14,803	14,513	17,173	46,377	20,814	23,293	23,415	67,512	24,019	23,011	23,425	22,928	93,383	22,923	20,113	19,761	19,900	19,760	18,798	18,533	18,445	17,848	17,788	17,424	16,780	15,512
F0			Category 0 RECs		14,771	13,035	14,110	41,917	17,404	18,722	18,411	54,537	18,209	16,539	15,870	15,046	65,665	14,627	12,251	11,953	11,737	11,646	11,105	10,866	10,829	10,286	10,250	9,941	9,767	9,125
F1			Category 1 RECs		62	1,478	2,920	4,460	3,409	4,560	5,006	12,975	5,810	6,473	7,555	7,881	27,719	7,896	7,862	7,808	7,763	7,715	7,694	7,667	7,616	7,562	7,538	7,483	7,013	6,387
F2			Category 2 RECs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F3			Category 3 RECs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Step 1 Result: Physical Net Short[3]																										
Ga	F-E		**Annual Gross RPS Position (GWh)**		(160)	(728)	1,990	1,022	4,740	5,759				935	(244)	(2,350)		(2,943)	(5,346)	(5,797)	(6,159)	(6,403)	(7,076)	(7,454)	(7,657)	(8,059)	(8,548)	(9,038)	(9,814)	(11,221)
Gb	F/A		**Annual Gross RPS Position (%)**		19.8%	19.0%	22.5%	20.5%	28.1%	31.0%				30.2%	30.7%	29.9%		29.3%	26.1%	25.5%	25.1%	24.8%	24.0%	23.5%	23.3%	22.5%	22.3%	21.7%	20.8%	19.1%

PG&E's Alternative RNS Table - Stochastic-Adjustment (2011-2025)

Variable	Energy Division RNS Calculation Shorthand	Correcting Apparent Errors in Energy Division Spreadsheet	Item	Deficit from RPS prior to Reporting Year	2011 Actuals	2012 Actuals	2013 Actuals	2011-2013	2014 Forecast	2015 Forecast	2016 Forecast	2014-2016	2017 Forecast	2018 Forecast	2019 Forecast	2020 Forecast	2017-2020	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast
			Step 2 Result: Stochastically-Adjusted Net Short (Physical Net Short + Stochastic Risk-Adjustment)[4]																			
Gd			**Stochastically-Adjusted Annual Gross RPS Position (GWh)**																			
Ge			**Stochastically-Adjusted Annual Gross RPS Position (%)**																			
			Application of Bank																			
Ha			Existing Banked RECs above the PQR (The Bank at Beg. Of Period)[5,6]																			
Hb			RECs above the PQR added to Bank																			
Hc			Non-bankable RECs above the PQR		-	31	34	65	Optimization is Based on Compliance Period Only			199	Optimization is Based on Compliance Period Only				87	-	-	-	-	-
H	Ha+Hb		Gross Balance of RECs above the PQR																			
Ia			Planned Application of RECs above the PQR toward RPS Compliance																			
Ib			Planned Sales of RECs above the PQR[7]																			
J	H-Ia-Ib		Net Balance of RECs above the PQR (The Bank at End of Period)																			
J0			Category 0 RECs																			
J1			Category 1 RECs																			
J2			Category 2 RECs																			
			Expiring Contracts																			
K			RECs from Expiring RPS Contracts		N/A	N/A	N/A	N/A	1,496	4,166	4,915	10,578	5,468	6,104	6,786	7,666	26,024	7,992	10,357	10,663	10,957	10,959
			Step 3 Result: Stochastically-Optimized Net Short (Stochastically-Adjusted Net Short + Application of Bank)[8]																			
La	(Ge+Ia+Ib+Hc)	Gd+Ia+Ib	**Annual Net RPS Position after Bank Optimization (GWh)**						Optimization is Based on Compliance Period Only				Optimization is Based on Compliance Period Only									
Lb	(Ge+Ia+Ib+Ic)/A	(Gd+Ia+Ib+E)/A	**Annual Net RPS Position after Bank Optimization (%)**																			

General Table Notes: Values are shown in GWhs. Fields in grey are protected as Confidential under CPUC Confidentiality Rules.

(1) (Row A) PG&E uses its own internal retail sales forecast for its procurement decisions.

(2) (Row D) As a portion of the Bank will be used as VMOP, Row D will remain zero. See 2014 RPS Plan for a description of PG&E's VMOP.

(3) (Step 1 Result: Physical Net Short) Rows Ga and Gb represent PG&E's physical net short based on PG&E's internal bundled retail sales forecast, as opposed to the LTPP forecast provided in the RNS.

(4) (Step 2 Result: Stochastically- Adjusted Net Short (Physical Net Short + Stochastic Risk-Adjustment)) PG&E's decision rows Gd and Ge to the Alternative RNS in order to show the stochastically-adjusted physical net short, which incorporates the risks and uncertainties addressed in the stochastic model. For more details on PG&E's stochastically modeled risks, see the 2014 RPS Plan. This is prior to any application of the Bank.

(5) (Rows Ha and J) As PG&E's Alternative RNS—incorporating additional risk-adjustments to be results from the Physical Net Short, the Bank signs indicated in Rows Ha and J appear smaller than they are in Rows Ha and J of the RNS, which shows the non-stochastically-adjusted Bank sign.

(6) (Rows Ha) At the beginning of each compliance period Row Ha is the net previous compliance non-bankable volumes from the previous compliance period net balance of RECs. For example, the 2021 forecast for Row Ha is equivalent to the Row J in CP3 minus Row Hc in CP3.

(7) (Row Ib) The purpose of the planned sales is to minimize the non-bankable volumes, but the actual sales could be a combination of bankable and non-bankable volumes.

(8) (Step 3 Result: Stochastically-Optimized Net Short (Stochastically-Adjusted Net Short + Application of Bank))

(a) Rows La and Lb represent the optimized net short that results from taking Row Gd (Step 2 Result) and then applying Bank usage. Bank can be used for either (i) compliance purposes (row Ia) or (ii) sales (Row Ib).

(b) Row La in the Alternative RNS does not match Row La in the RNS, because the RNS does not include Row Gd (Stochastically-Adjusted Net Short).

(c) PG&E included the non-bankable volumes in calculating rows La and Lb. Although these volumes cannot be carried forward, per Decision 12-06-038, these volumes could be used towards meeting compliance in the current period. Therefore, the non-bankable volumes should be included in the Annual Net RPS Position after Bank Optimization.

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 PPSA and other information that more specifically describes the rights and obligations of the parties involved. 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 Investor Owned Utility 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[9]:

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

Appendix B – 2013 Solicitation Overview

Appendix C1 – Independent Evaluator Report – Confidential

Appendix D – Contract Summary

Appendix F – Power Purchase and Sale Agreement

Appendix G – Projects' Contribution Toward RPS Goals

Public Attachment

Appendix C2 – Independent Evaluator Report – Public

II. Consistency with Commission Decisions

A. RPS Procurement Plan

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

PG&E's 2013 RPS Plan was conditionally approved in D.13-11-024 on November 14, 2013. Consistent with the decision, PG&E submitted a final version of its 2013 RPS Plan on December

[9] Please Note: Appendix E, the Comparison of the Power Purchase Agreement ("PPA") to PG&E's 2013 Pro Forma PPA, is non-applicable in the case of the above referenced PPSA therefore PG&E is not including Appendix E within this advice letter.

4, 2013. In this plan, PG&E stated that it may pursue the sale of excess RPS products through either a competitive solicitation or bilateral contracts.

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

The goal of PG&E's 2013 RPS Plan is to procure approximately 1,500 gigawatt hours per year of RPS-eligible deliveries offering high portfolio value through new long-term contracts. In addition, based on deliveries from current projects, PG&E projects a bank of surplus procurement at the end of CP2.

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 proposed PPSA is for the sale of energy and RECs generated in 2014. PG&E's 2013 RPS Plan provides that PG&E will seek to sell any non-bankable, surplus RPS volumes and continue to assess the value to PG&E's customers of sales of excess procurement.[10] The Transaction meets those criteria as the PPSA includes both banked surplus and non-bankable RPS products. The revenue from the Transaction will reduce customer costs while maintaining compliance with RPS targets in CP2.

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

N/A.

5. Sales

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

PG&E's sale of 50,000 MWh of bundled renewable energy and green attributes through the PPSA reduces overall RPS compliance costs for PG&E customers with a negligible reduction in PG&E's RPS position. To evaluate the value of selling surplus procurement versus the value of banking RECs towards use in future RPS compliance periods, PG&E compared the prices of the green attributes in this Transaction against the prices for recently executed transactions for unbundled RECs capable of replacing the sold volume. The prices for green attributes under the Transaction are higher than the prices PG&E recently observed for RECs that could be used to replace the sold volume.

b) Explain the process used to determine price reasonableness, with maximum benefit to ratepayers.

[10] PG&E's 2013 RPS Plan at 35.

PG&E validated the competitiveness of this transaction by using a broker to gather bids from other market participants, including power marketers and renewable generators, and also by comparing the price to recent market activity. Tenaska's price was competitive when compared to the limited alternatives in the market.

6. Portfolio Optimization Strategy

a) Describe how the proposed procurement (or sale) optimizes IOU's RPS portfolio (or entire energy portfolio). Specifically, a response should include:

i. Identification of IOU's portfolio optimization strategy objectives that the proposed procurement (or sale) are consistent with.

ii. Identification of metrics within portfolio optimization methodology or model (e.g. PPA costs, energy value, capacity value, interest costs, carrying costs, transaction costs, etc.) that are increased/decreased as a result of the proposed transaction.

iii. Identification of risks (e.g. non-compliance with RPS requirements, regulatory risk, over-procurement of non-bankable RPS-eligible products, safety, etc.) and constraints included in optimization strategy that may be decreased or increased due to proposed procurement (or sale).

The Transaction is consistent with PG&E's objective of minimizing customer costs while achieving and maintaining RPS compliance. Through the timely sale of excess RPS-eligible energy at a competitive price, the PPSA reduces the total cost impact of the RPS program to customers. Further, the sale of surplus non-bankable RPS products included in the PPSA provides additional value for customers. Given PG&E's current long RPS position at this early stage of CP2, it is highly unlikely that the PPSA will jeopardize PG&E's ability to meet CP2 requirements.

b. Description of how proposed procurement (or sale) is consistent with IOUs overall planned activities and range of transactions planned to optimize portfolio.

As stated in the 2013 RPS Plan[11], PG&E's strategy to minimize customer costs includes examining opportunities to sell banked surplus procurement as well as any RPS products that cannot be counted as surplus procurement and banked for future use. The PPSA includes both banked surplus and non-bankable RPS products.

B. Bilateral contracting – if applicable

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

[11] PG&E's 2013 RPS Plan at 22.

The PPSA resulted from PG&E utilizing a broker to identify a buyer and then bilaterally negotiating the final transaction between PG&E and Tenaska. 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 via the advice letter process. 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 via advice letter; (2) the contract is longer than one month in duration; (3) the contract does not receive above-market funds; and (4) the contract is deemed reasonable by the Commission.[12] The Commission noted that it would be developing evaluation criteria for bilateral contracts, but that the above four requirements would apply in the interim. [13]

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 Transaction satisfies the requirements listed above and the requirements of D.09-06-050. The Transaction is being submitted for approval by this Advice Letter. The term is at least one month in duration and the PPSA is reasonable when considered against the standards used for evaluation given PG&E's current needs and the proposed pricing associated with the Transaction.

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

PG&E's ability to negotiate bilateral transactions allows PG&E to meet market needs. In this case, it allows PG&E to capitalize on the opportunity to sell a product at a competitive price, both in terms of comparison to market alternatives as well as compared to the value of a banked product. The Commission expressly authorized the sale of excess RPS products through bilateral transactions in D. 13-11-024. In addition PG&E's 2013 RPS Plan calls for the sale of RPS Products.

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.

Although PG&E's 2013 RPS Plan provides that PG&E will seek to sell any non-bankable, surplus volumes, PG&E's 2013 RPS Request for Offers ("RFO") did not specifically seek to sell RPS products. PG&E's 2013 RPS RFO focused on procuring additional RPS energy with deliveries occurring beyond CP2.

[12] Resolution E-4216, p.5.
[13] Ibid.

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

1. Briefly describe IOU's LCBF Methodology and how the Project compared relative to other offers available to the IOU at the time of evaluation.

As discussed above, PG&E did not solicit sale offers through its 2013 RPS RFO. PG&E validated the competitiveness of this offer through outreach to power marketers and renewable developers by using a broker. This offer was competitive with these limited other alternatives in the market.

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

The 2013 Shortlist Report has not yet been approved.

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 proposed contract fully complies with Standard Terms and Conditions ("STCs") required by the Commission.

The Commission set forth STCs 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 terms related to Tradable Renewable Energy Credits were finalized in D.10-03-021, as modified by D.11-01-025. The non-modifiable terms related to Green Attributes, finalized in D.08-08-028, have subsequently been changed to modifiable terms by D.13-11-024; they are no longer included in the table below.

The non-modifiable STCs in the PPSA 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 D.13-11-024 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 locations of non-modifiable terms in the PPSA are indicated in the table below:

Non-Modifiable Term	Contract Section Number	Contract Page Number
STC 1: CPUC Approval	2.8	4
STC 6: Eligibility	6.1(a)	8
STC 17: Applicable Law	9.3(b)	11

Non-Modifiable Term	Contract Section Number	Contract Page Number
STC REC 1: Transfer of RECs	6.1(b)	8 – 9
STC REC 2: WREGIS Tracking of RECs	6.1(c)	9

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.

No redline is provided since the PG&E pro forma PPA was not used. Instead, the EEI Master Power Purchase and Sale Agreement was used for this Transaction.

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

1. Describe the contract's claimed portfolio content category.

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

PG&E will sell energy and associated RECs generated from California-based CEC certified eligible renewable energy resources that have their first point of interconnection with the CAISO balancing authority. Accordingly, the PPSA involves a product that fits within the portfolio content category established under Pub. Util. Code 399.16(b)(1). Furthermore, as defined under D.10-03-021, as modified by D.11-01-025, the proposed PPSA is a bundled transaction since both renewable energy and its associated RECs are being sold together.

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

There is no known risk that the electric power would not be categorized as PCC 1.

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

1. Contract is classified as claimed

2. Contract is not classified as claimed

PG&E has addressed this in confidential Appendix A, Section I. H.

5. Use the table below to report how the procurement pursuant to the contract, if classified as claimed, will affect the IOU's portfolio balance requirements, established in D.11-12-052.

Per PG&E's 2014 thirty-three percent RPS Procurement Progress Report filed on April 1, 2014, PG&E's current Portfolio Balance Requirements are listed in the table below. As the proposed

PPSA generation is a combination of PCC 0 and PCC 1 volumes, PG&E will not know the exact allocation between the categories until the RECs have been transferred to the counterparty. PG&E estimates that the quantity of PCC 1 reduction from the proposed PPSA will be between 0 MWh and 32,000 MWh.[14]

Forecast of Portfolio Balance Requirements	**Compliance Period 2 (2014-2016)**	**Compliance Period 3 (2017-2020)**
PCC 1 Balance Requirement *CP 2 = 65% of RECs applied to procurement quantity requirement* *CP 3 = 75% of RECs applied to procurement quantity requirement*		
Quantity of PCC 1 RECs (under contract, not including proposed contract)	13,301,983 MWh	28,393,905 MWh
Quantity of PCC 1 RECs from proposed contract	-32,000 - 0 MWh	0
Quantity of PCC 2 RECs	0	0
Quantity of PCC 2 RECs (under contract, not including proposed contract)	0	0
Quantity of PCC 2 RECs from proposed contract	0	0
PCC 3 Balance Limitation *CP 2 = 15% of RECs applied to procurement quantity requirement* *CP 3 = 10% of RECs applied to procurement quantity requirement*		
Quantity of PCC 3 RECs (under contract, not including proposed contract)	0[15]	0[16]

[14] 32,000 MWh is based on historical deliveries of the facility representing the PCC 1 RECs.
[15] While PG&E's 2014 33% RPS Procurement Progress Report filed on April 1, 2014 includes PCC 3 volumes for both CP2 and CP3, these volumes have been removed from this table as a result of the CPUC denying PG&E's request for the approval of the associated PSAs.
[16] Ibid.

Quantity of PCC 3 RECs from proposed contract	0	0

F. Long-Term Contracting Requirement

D.12-06-038 established a long-term contracting requirement that must be met in order for an IOU to count RPS procurement from contracts less than 10 years in length ("short-term contracts") toward RPS compliance.

In D.12-06-038, the Commission adopted a threshold standard pursuant to SB 2 1X that requires load serving entities to sign long-term contracts in each compliance period equal to at least 0.25 percent of their expected retail sales over that same compliance period. The proposed PPSA is a short-term sales contract, which is not subject to the long-term contracting requirement. As documented in PG&E's 2014 thirty-three percent RPS Procurement Progress Report filed on April 1, 2014, PG&E has significantly surpassed its long-term contracting requirement of 193,713 MWh.

1. **Explain whether or not the proposed contract triggers the long-term contracting requirement.**

As a short-term sales transaction, this PPSA does not trigger the long-term contracting requirement.

2. **If the long-term contracting requirement applies, provide a detailed calculation that shows the extent to which the utility has satisfied the long-term contracting requirement. If the requirement has not yet been satisfied for the current compliance period, explain how the utility expects to satisfy the quantity by the end of the compliance period to count the proposed contract for compliance.**

The long-term contracting requirement does not apply as this PPSA is a short-term sales transaction.

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 its 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.**

Not applicable. The PPSA is a short-term contract (less than 24 months) but PG&E is not seeking Fast Track approval.

H. Interim Emissions Performance Standard

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

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

Pursuant to D.07-01-039, the proposed PPSA is not subject to EPS as it has a delivery term shorter than five years.

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

See Section H.1 above.

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.

See Section H.1 above.

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.

See Section H.1 above.

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.

Substitute system energy from unspecified sources will not be used.

I. Procurement Review Group (PRG) Participation

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

The Procurement Review Group ("PRG") for PG&E includes the Commission's Energy Division, the Office of Ratepayer Advocates, the Department of Water Resources, the 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 PPSA was presented to the PG&E's PRG on May 22, 2014, via e-mail.

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.

N/A.

J. Independent Evaluator (IE)

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

1. Provide name of IE.

The Independent Evaluator ("IE") is Frank Mossburg of Boston Pacific Company, Inc.

2. Describe the oversight provided by the IE.

The IE reviewed e-mails exchanged between PG&E and the counterparty. The IE also participated on phone calls between PG&E and the counterparty.

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 did not provide any findings to the PRG related to this PPSA. The IE recommends that the Commission approve the Transaction in his IE report.

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

The public version of the IE report is attached to this Advice Letter as Appendix C2.

III. Project Development Status

Since the Projects are already commercially operable, this section is not applicable.

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.

This short-term transaction has no guaranteed milestones. The Transaction for Green Attributes is conditioned upon CPUC Approval, as defined in the proposed PPSA.

V. Safety Considerations

1. **What terms in the PPA address the safe operation, construction and maintenance of the Project? Are there any other conditions, including but not limited to conditions of any permits or potential permits, that the IOU is aware of that ensure such safe operation, construction and decommissioning?**

The Transaction covers the resale of energy and RECs purchased under existing PPAs. These Projects are existing resources currently performing under existing PPAs with PG&E. The Transaction that is the subject of this Advice Letter has no impact on the underlying PPAs and, provides PG&E no incremental visibility on any potential safety matters related to the generation of the energy.

2. **What has the IOU done to ensure that the PPA and the Project's operation are: consistent with Public Utilities Code Section 451; do not interfere with the IOU's safe operation of its utility operations and facilities; and will not adversely affect the public health and safety?**

See Section V.1 above.

3. **If PPA or amendment is with an existing facility, please provide a matrix that identifies all safety violations found by any entity, whether government, industry-based or internal with an indication of the issue and if the resolution of that alleged violation is pending or resolved and what the progress or resolution was/is.**

See Section V.1 above.

4. **If PPA or amendment is with an existing facility, will the PPA or amendment lead to any changes in the structure or operations of the facility? Any change in the safety practices at the facility? If so, with what federal, state and local agencies did the developer confer or seek permits or permit amendments for these changes?**

See Section V.1 above.

VI. REQUEST FOR COMMISSION APPROVAL

PG&E requests that the Commission issue a resolution no later than September 22, 2014, that:

1. Approves the PPSA in its entirety.

2. Finds that this PPSA is consistent with PG&E's CPUC approved RPS Plan and that the sale of the bundled renewable electricity and green attributes under the PPSA is reasonable and in the public interest;
3. Finds that all costs of the PPSA, including broker fees associated with the Transaction, are fully recoverable in rates over the life of the PPSA, subject to CPUC review of PG&E's administration of the PPSA;
4. Finds that the PPSA is reasonable;
5. Finds that the payments received by PG&E pursuant to the PPSA shall be credited to PG&E customers through PG&E's Energy Resource Recovery Account over the life of the PPSA, subject to CPUC review of PG&E's administration of the PPSA;
6. Finds that deliveries under the PPSA are deliveries under the first portfolio content category specified in Section 399.16(b)(1)(A); and
7. Any other and further relief as the Commission finds just and reasonable.

Protests:

Anyone wishing to protest this Advice Letter may do so by letter sent via U.S. mail, facsimile or E-mail, no later than June 30, 2014, which is 20 days after the date of this filing. Protests must be submitted to:

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

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

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

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

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

Facsimile: (415) 973-7226
E-mail: PGETariffs@pge.com and Kcj5@pge.com

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

Effective Date:

PG&E requests that the Commission issue a resolution approving this Tier 3 advice filing by September 22, 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 PRG and have signed appropriate Non-Disclosure Certificates will also receive the Advice Letter and accompanying confidential attachments by overnight mail. Address changes to the General Order 96-B service list should be directed to PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Advice letter filings can also be accessed electronically at http://www.pge.com/tariffs.

Brian Cherry /KHC

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
Shannon O'Rourke – Energy Division
Joseph Abhulimen – ORA
Karin Hieta – ORA
Cynthia Walker – ORA

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 PPSA itself, price information, and analysis of the PPSA, which are protected pursuant to D.06-06-066 and D.08-04-023. A separate Declaration Seeking Confidential Treatment regarding the confidential information is filed concurrently herewith.

CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY
ENERGY UTILITY

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

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

Utility type:	Contact Person: Kingsley Cheng
☑ ELC ☐ GAS	Phone #: (415) 973-5265
☐ PLC ☐ HEAT ☐ WATER	E-mail: k2c0@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) #: **4441-E** **Tier: 3**

Subject of AL: **Power Purchase and Sale Agreement for Bundled Energy Sales Between Tenaska Power Services Co. and Pacific Gas and Electric Company**

Keywords (choose from CPUC listing): Agreements, 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: Michael Kowalewski (415) 972-5589

Resolution Required? ☑Yes ☐No

Requested effective date: **Upon Commission Approval** No. of tariff sheets: N/A

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

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

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

Tariff schedules affected: N/A

Service affected and changes proposed: N/A

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

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

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

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

DECLARATION OF MICHAEL KOWALEWSKI
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION CONTAINED IN
ADVICE LETTER 4441-E
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)

I, Michael Kowalewski, declare:

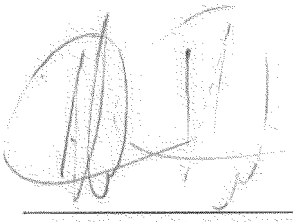
1. I am presently employed by Pacific Gas and Electric Company (PG&E) and have been an employee since 1992. My current title is Principal, Renewable Transactions, in the Renewable Energy Department, which is part of the Energy Procurement Department. In this position, my responsibilities include negotiating PG&E's Renewables Portfolio Standard Program ("RPS") Power Purchase Agreements. 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. I have become familiar with the type of information that would affect the negotiating positions of electricity sellers with respect to price and other terms, as well as with the type of information that such sellers consider confidential and proprietary.

2. Based on my knowledge and experience, and in accordance with Decision ("D") 08-04-023 and the August 22, 2006 "Administrative Law Judge's Ruling Clarifying Interim Procedures for Complying with Decision 06-06-066," I make this declaration seeking confidential treatment of Appendices A, B, C1, D, F, and G to PG&E's Advice Letter 4441-E, submitted on June 10, 2014.

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

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

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 June 10, 2014, at San Francisco, California.



MICHAEL KOWALEWSKI

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 4441-E
June 10, 2014

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, maskedor otherwise protected in a way that allows partial disclosure (Y/N)	PG&E's Justification for Confidential Treatment	Length of Time
Document: Advice Letter 4441-E							
Appendix A	Y	Item V C) LSE Total Energy Forecast – Bundled Customer (MWh) Item VI B) Utility Bundled Net Open (Long or Short) Position for Energy (MWh) Item VII G) Renewable Resource Contracts under RPS program – Contracts without SEPs. General Order ("GO") 66-C.	Y	Y	Y	This appendix contains information on PG&E's sales forecast and PG&E's renewable net open position. If released publicly, this information would provide market sensitive information to PG&E's competitors and is therefore considered confidential. In addition this appendix contains price information, discusses analyzes, and evaluates the terms of the Power Purchase and Sales Agreement ("PPSA"). Public disclosure of this information would offer valuable market sensitive information to PG&E's competitors. It is in the public interest to treat such information as confidential. Release of this information would be damaging to future PG&E contract negotiations and ultimately detrimental to PG&E's ratepayers.	For information covered under Item V C) and VI B) the front three years of the forecast remain confidential for three years. For information covered under Item VII G) remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner). For information covered under GO 66-C, remain confidential indefinitely.
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 PG&E's 2013 RPS Solicitation. If released publicly, this information would provide market sensitive information to PG&E's competitors therefore this information should be considered confidential. In addition, offers received outside of the solicitations are still under negotiation, further substantiating why releasing this information publicly 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 (U 39 E)
Advice Letter 4441-E
June 10, 2014

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (Y/N)	2) Which category or categories in the Matrix the data correspond to:	3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data (Y/N)	4) That the information is not already public (Y/N)	5) The data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure (Y/N)	PG&E's Justification for Confidential Treatment	Length of Time
Appendix C1	Y	GO 66-C.	Y	Y	Y	This appendix contains certain information that has been obtained in confidence from the counterparty under an expectation that this information would remain confidential. It is in the public interest to treat such information as confidential because if such information were released publicly, it would put the counterparty at a business disadvantage, could create a disincentive to do business with PG&E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparties.	For information covered under GO 66-C, remain confidential indefinitely.
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. General Order 66-C.	Y	Y	Y	This appendix contains bid information and discusses the terms of the PPSA. Public disclosure of this information would offer valuable market sensitive information to PG&E's competitors. Release of this information publicly would be damaging to PG&E's current and future negotiations with other counterparties therefore this information should remain confidential. Furthermore, the counterparty to this PPSA has an expectation that the terms of the PPSA will remain confidential. It is in the public interest to treat this information as confidential because if such information were made public, it would put the counterparty at a business disadvantage, could create a disincentive to do business with PG&E and other regulated utilities, and could have a damaging effect on current and future negotiations with other counterparties.	For information covered under Item VII G) remain confidential for three years after the commercial operation date, or one year after expiration (whichever is sooner). For information covered under Item VII (un-numbered category following VII G), remain confidential for three years. For information covered under GO 66-C, remain confidential indefinitely.

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 4441-E
June 10, 2014

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 F	Y	Item VII G) Renewable Resource Contracts under RPS program - Contracts without SEPs.	Y	Y	Y	This appendix contains the PPSA for which PG&E seeks approval in this advice letter filing. disclosure of certain terms of the PPSA would provide valuable market sensitive information to PG&E's competitors. Release of this information publicly would be damaging to PG&E's current and future negotiations with other counterparties therefore this information should remain confidential. Furthermore, the counterparty to the PPSA has an expectation that the terms of the PPA 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 publicly disclosed, would provide valuable market sensitive information to PG&E's competitors and allow them to see PG&E's remaining RPS net open energy position. This information is therefore confidential and needs to receive confidential treatment.	For information covered under Item VII (un-numbered category following VII G), remain confidential for three years. For information covered under Item VI B (Utility Bundled Net Open Position for Energy (MWh)), remain confidential for three years.

Public Appendix C2

Independent Evaluator Report

REPORT OF THE INDEPENDENT EVALUATOR REGARDING A BILATERAL TRANSACTION BETWEEN PACIFIC GAS & ELECTRIC AND TENASKA POWER SERVICES COMPANY

PRESENTED TO

CALIFORNIA PUBLIC UTILITIES COMMISSION
ENERGY DIVISION

by

BOSTON PACIFIC COMPANY, INC.

Frank Mossburg
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June 6, 2014

BOSTON | PACIFIC COMPANY, INC.

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

Pacific Gas & Electric (PG&E) is submitting a Power Purchase & Sale Agreement (PPSA) that is the result of a bilateral negotiation between itself and Tenaska Power Services Co. (Tenaska) for approval. Boston Pacific Company, Inc. (Boston Pacific) served as the Independent Evaluator (IE) charged with overseeing this negotiation.

Under the terms of this PPSA, PG&E will sell up to 50,000 MWh of energy and associated Green Attributes (Renewable Energy Credits or RECs) primarily from a group of six California-located geothermal and hydroelectric facilities to Tenaska from the period of April 23, 2014 through October 31, 2014. The contract is subject to the general terms and conditions of the EEI Master Agreement, a commonly used template for commercial energy trades.

In exchange, Tenaska will pay PG&E a price for energy and a price for RECs. The energy price is the [redacted] depending on when the transaction is accepted by the California ISO. The price for RECs is a flat [redacted] (since 1 MWh produces 1 REC). Since these RECs are bundled together with energy and the first interconnection point is located within the metered California Balancing Authority area they are classified as Portfolio Content Category 1 (Category 1) RECs.

The transaction was the result of a third-party broker surveying the market for parties interested in purchasing PG&E's supply. It is similar to one negotiated last year between these same two parties. That transaction, which consisted of two PPSAs, was submitted for approval in December of last year and approved per resolution E-4639 in February of this year. As compared to the previous transaction, there are three basic changes. First, [redacted]. Second, the total quantity decreased from 142,440 MWh to 50,000 MWh. These changes were based upon changes in market conditions and the [redacted]. Third, [redacted], mainly clarifications regarding how the transaction would operate on a day-to-day basis. Each party has the right to terminate the contract if California Public Utilities Commission (CPUC) approval is not obtained by December 1, 2014.

Boston Pacific recommends that the CPUC approve this contract. We say so for four reasons. First, the negotiations were open and fair. Boston Pacific was able to participate in phone calls between parties, and review both contract documents and e-mails between parties. Based on our observations, all parties acted reasonably and fairly and the final transaction is acceptable to both parties.

Second, the PPSA itself is reasonable and does not contain any provisions which shift excessive risk to ratepayers. The contract uses the terms and conditions from the EEI Master Agreement and is essentially the same as last year's approved transaction. Any edits made, apart

from those for price and quantity, were minor and essentially served to clarify how the transaction would operate.

Third, the sale is appropriate given PG&E's forecasted surplus of RECs in the current compliance period, which runs from 2014 through 2016. Using PG&E's latest Renewable Net Short Calculation the Company projects a gross surplus of [redacted] GWh worth of RECs in 2014. By the end of the current compliance period in 2016 PG&E projects cumulative banked volumes of [redacted] GWh worth of RECs. Since PG&E is forecasted to be in surplus, this transaction allows them to get value for supply that would otherwise simply add to this total. Generating profits from this surplus allows PG&E to lower costs for ratepayers.

Fourth, while the price for RECs is down from the previous transaction, from [redacted], it appears to be reasonable given current market conditions. We note here that price evaluations present some complications because there is no transparent trading market for Category 1 RECs. In addition, even when price data is available, Category 1 RECs are supplied under contracts which bundle together energy, RECs, and sometimes other products under a single price, making it difficult to ascertain the price paid just for the RECs.

Despite this, we can take several steps to evaluate the transaction price. We can start by looking at what has changed in the market since the last transaction. Here we see one factor that may help explain the price decline. The transaction here covers the 2014-2016 compliance period while the previous transaction covered the 2011-2013 compliance period. It makes sense that, absent major oversupply or forecasts of shortages, prices would be higher at the end of a compliance period as suppliers move to meet their requirements than at the beginning of a compliance period where suppliers still have a good deal of time to meet their requirements. We note here that both the last compliance period and forecasts for this compliance period feature an oversupply of RECs.

Another, more direct evaluation is to review quotes from brokers. Broker quotes from four different sources obtained in early February by PG&E show a price for Category 1 RECs between [redacted]. The final price here is within the range of these quotes. More recent quotes from brokers put the cost of Category 1 RECs at [redacted]. Moreover, we can have some comfort that an independent broker helped establish the price for this transaction after surveying the market.

We can also look at other recent proposed transactions for similar supply involving PG&E. [redacted]

[redacted].

Yet another step is to look at comparable transactions between other parties. Just recently Marin Clean Energy put before their Board of Directors a contract with Calpine for 25,000 MWh of bundled energy and RECs for delivery in 2014 and 2015. Since the energy and RECs are bundled together these are Category 1 RECs. For this contract, which even uses some of the same facilities that PG&E will use here, the REC price is $20/MWh.

Another piece of data comes from comparing the REC price here to prices for other California REC categories. Category 3 RECs are unbundled from their associated energy and can come from a wide variety of resources. Moreover, they also can only make up a maximum of 15% of the RPS obligation for this compliance period. Therefore we would expect them to be cheaper than the Category 1 RECs for sale here. In fact that is the case. In October of 2013 PG&E filed for approval of three contracts to purchase Category 3 RECs at levelized prices ranging from [redacted].

Finally, we can construct a very rough benchmark by combining the REC price with the expected energy price. We can then try to compare this to other recent transactions that bundle energy and RECs together in a single price. We caution that these comparisons are not ideal since they involve transactions which cover different time periods and different contract terms and products (for example, some transactions may also contain Resource Adequacy credits). Nonetheless, this can serve as another point of comparison.

Looking at recent futures prices for the NP-15 delivery point on the ICE exchange and [redacted]. This is generally in the range of some recent longer-term transactions. For example, the 2014 Padilla Report to the Legislature shows the weighted average time-of-day adjusted price of bundled energy and REC contracts approved in 2013 as $67.20/MWh for PG&E. In addition, we are currently monitoring as an IE negotiations between a renewable facility and PG&E where the facility has proposed a price of [redacted]. Again, we caution that these comparisons are not ideal since they involve different contract time periods and contract durations.

[1] [redacted].

II. INDEPENDENT EVALUATOR CHECKLIST

1. Role of the IE

a. *Cite CPUC decisions requiring IE participation in RPS solicitations: D.04-12-048 (Findings of Fact 94-95, Ordering Paragraph 28) and D.06-05-039 (Finding of Fact 20, Conclusion of Law 3, Ordering Paragraph 8).*

b. *Description of key IE roles: IEs provide an independent evaluation of the IOU's RPS offer evaluation and selection process:*

   1. *Did the IOU do adequate outreach to potential participants and was the solicitation robust?*
   2. ***Was the IOU's LCBF methodology designed such that all offers were** fairly evaluated?*
   3. ***Was the IOU's LCBF offer e**valuation and selection process fairly administered?*
   4. *Did the IOU make reasonable and consistent choices regarding which offers were brought to CPUC for approval?*

c. ***Description of activities undertaken by the IE to fulfill the IE's role (i.e. attended** negotiation meetings, reviewed Request for Proposals materials, attended pre-offer conference, evaluated proposals and/or reviewed evaluation process and results, etc.) and reporting/consultation with CPUC, PRG, and others*

d. *Any other relevant information or observations*

CPUC decisions D. 04-12-048 and D.06-05-039 lay out some basic principles regarding the role of the IE. Among other things, these decisions note that the IE report can serve to "increase the fairness and equity in the bid and selection process, provide the Commission the opportunity to review the use of judgment by the IOUs in the process, increase the transparency of the process, and allow the Commission to take corrective action if necessary..."[2] Boston Pacific was engaged as the IE for this transaction on or around March 17, 2014. PG&E and Tenaska began having discussions regarding the transaction in February when the transaction was brought to PG&E through a third-party broker. Boston Pacific did not miss any substantive negotiations prior to our engagement.

In a formal solicitation, the IE would review bidder outreach, evaluation methodologies, bid scoring and selection of winning bidders and contract negotiations to ensure that all bidders were treated fairly, that all choices were reasonable and that the procurement was generating the

[2] CPUC Decision D.06-05-039, Findings of Fact 20.

best possible result for ratepayers. As this was a bilateral negotiation, rather than a formal solicitation, not all of these tasks were needed. In order to ensure that this transaction was beneficial for ratepayers we focused on four items: (a) the fairness of the negotiations, (b) the fairness of the transaction documents, (c) the appropriateness of the transaction given PG&E's RPS portfolio balance and (d) the reasonableness of the transaction price.

In order to perform our duties we reviewed all documents related to the transaction – the EEI Master Agreement and final confirmation letter between PG&E and Tenaska as well as all drafts exchanged between the parties. We reviewed e-mail correspondence, participated in phone calls between the parties and reviewed relevant market data and other information. We reviewed past contracts, comparable contracts between other parties, communications between PG&E and third-party brokers, and other relevant market information. PG&E personnel were available to answer our questions and provide us with transaction documents and supporting information. We found PG&E personnel to be very helpful and accommodating in all these tasks.

2. IOU Outreach

a. ***Were the solicitation materials clear and concise to ensure that the information required by the utility to conduct its evaluation was provided by the participants?***

b. ***Did the IOUs seek adequate feedback about the offers/offer evaluation process from all participants after the solicitation was complete?***

c. ***Any other relevant information or observations***

As noted above, this transaction was a bilateral negotiation between PG&E and Tenaska. As such, there was no formal outreach process or solicitation material. [redacted].[3]

[redacted].

[3] Note that the Exhibit shows the time period as being Compliance Period 1. This was in error. The final contract presented here features 2014 delivery, so it is Compliance Period 2.

3. IOU's LCBF Methodology

a. ***Identify the principles the IE used to evaluate the IOU's offer evaluation*** *methodology.*

b. *Using the principles identified in section III.A, evaluate the strengths and* ***weaknesses of IOU's*** *methodology in this solicitation:*

1. *Evaluation of consistency with RPS procurement plan, requested products, and portfolio fit. Did the IOU adequately incorporate needs and preferences stated and approved in RPS procurement plan and protocol? For instance, did the IOU account for contract start dates, contract lengths, and varying generation amounts? Did the IOU* ***adequately take into account a project's characteristics related to*** *portfolio fit preferences?*

2. *Market valuation. Were both price and value taken into consideration when projects were shortlisted? Did the IOU adequately take into consideration all financial benefits and costs of a project when determining the value of projects that were shortlisted? Did the IOU include the cost of transmission upgrades in the value calculation of projects that were shortlisted? In your opinion, were any costs or* ***benefits that should have been included in the IOU's LCBF calculation*** *not included?*

3. ***Evaluation of offers' transmission costs. Did the IOU rely mor****e on TRCR studies than Phase I or Phase II studies to ascertain transmission costs? Did the IOU weigh the total cost of transmission upgrades for a project against the relative value in resource adequacy that the transmission upgrade will provide for each project? Did the IOU perform any data conformance checks related to transmission study results and cost information for projects before they were included on the shortlist?*

4. ***Evaluation of offers' project viability. Did the IOU (or IE or developer)*** *reasonably measure the viability of each project in the offer evaluation process? Did the IOU perform conformance checks related to the* ***accuracy of the projects' viability scores before the projects were*** *included on the shortlist?*

5. *Other*

c. *What future LCBF improvements would you recommend?*

d. ***Any additional information or observations regarding the IOU's evaluation*** *methodology (e.g. capacity valuation, congestion cost adder, etc.)*

Generally speaking, when we review an evaluation methodology we are looking for a number of things. We want it to be open to as wide a range of bidders as possible and treat all bidders, including utility affiliates, the same. We want it to be transparent, so that bidders will understand just what they need to do to win. We like to see a methodology that is "price only" or "price mostly" to increase transparency and reduce the chance of selection solely by purely

subjective criteria. We also like to see a methodology that recognizes risk and uncertainty inherent in the future and rewards bids that manage those risks. Finally, we like to see a methodology that is geared to produce results that are aligned with regulatory policy goals.

Because this was a bilateral negotiation there was no formal evaluation methodology presented. However several of these factors appear to have been taken into consideration in the negotiation and execution of this contract. First, the transaction was undertaken using a pre-approved contract as a basis, leaving the transaction evaluation to be focused mainly around price and quantity. Second, the sale aligns with policy goals in the sense that it utilizes PG&E's REC surplus to reduce ratepayer costs. Third, there was no indication in the discussion that PG&E was offering special treatment to Tenaska that it was not extending to other market participants – key points of the offer (price, quantity) were initially established through an independent broker who surveyed the market for interest in PG&E's supply.

4. LCBF Offer Evaluation Process

a. ***Identify guidelines used to determine fairness of evaluation process.***

b. ***Utilizing the guidelines in Section IV.A, describe the IE methodology used to evaluate administration of the IOU LCBF process.***

c. ***Did the utility identify, for each offer, the terms that deviate from the utility RFO? Did the IOU identify nonconforming offers fairly – fair both to the nonconforming offers and to conforming participants?***

d. ***If the IOU conducted any part of the offer evaluation, were the parameters and inputs determined reasonably and fairly? What controls were in place to ensure that the parameters and inputs were reasonable and fair?***

e. ***If the IE or a third party conducted any part of the offer evaluation, what information/data did the utility communicate to that party and what controls did the utility exercise over the quality or specifics of the out-sourced analysis?***

f. ***Were transmission cost adders and integration costs properly assessed and applied to offers?***

g. ***Describe any additional measures the utility exercised in evaluating affiliate, buyout, and turnkey offers.***

h. ***Describe any additional criteria or analysis used in creating its short list (e.g. seller concentration, online date, transmission availability, etc.). Were the additional criteria included in the solicitation materials?***

i. ***Results analysis***

When reviewing an evaluation process we look for a process that treats all bidders fairly under the rules of the RFP. If a rule is modified or changed for one bidder then we like to see

that modification extended to all bidders. If affiliates are involved we like to see them treated the same as other bidders.

Because this was a bilateral transaction there was no formal evaluation process. From what we could observe negotiations were open and fair. The transaction was initiated via a third-party broker who established price and quantity with Tenaska. The parties then used the approved transaction documents from their last deal and negotiated relatively minor changes to complete the transaction.

In evaluating the results Boston Pacific considered a) the fairness of negotiations, b) the fairness of the contract documents, c) the need for the transaction and fit within PG&E's RPS portfolio and d) the price of the transaction. Our analysis of those factors is laid out in sections six and seven.

5. Does the RPS shortlist merit Commission approval?

a. *Did the IOU conduct a fair solicitation that was consistent with Commission decisions and its approved LCBF methodology?*

b. *Did the IOU choose projects for the shortlist that provide the best overall value to ratepayers while meeting the IOU's RPS compliance needs? Could the IOU have incorporated a decision-making process that provided for a different portfolio of projects that provide better overall ratepayer value while meeting the IOU's RPS compliance needs?*

c. *Did the shortlist conform to the needs of the IOU's portfolio, RPS requirements, RPS procurement plan and protocol?*

Because there was no shortlist for this bilateral negotiation there was no shortlist to evaluate. For discussion of the final contract see the following sections.

6. Fairness of Project Specific Negotiations

a. *Identify principles used to evaluate the fairness of the negotiations.*

b. *Using the above principles (section V.A), please evaluate fairness of project-specific negotiations.*

c. *Identify the terms and conditions that underwent significant changes during the course of negotiations?*

d. *Was similar information/options made available to other participants, e.g. if a participant was told to reduce its price down to $X, was the same information made available to others?*

e. Any other relevant information or observations, such as other data or information used to inform the negotiations.

Typically in a negotiation resulting from a formal procurement process we look to see that the final contract matches the offer made in the procurement process and that the negotiations were fair. In this case there was no formal offer as the contract was initiated via a third-party broker and finalized through bilateral negotiation. However, we did look for several criteria. First, information had to be clearly conveyed between parties. Second, parties should understand each other's positions. Third, parties should have adequate time to respond to each other's comments and redlines. Fourth there should be no evidence that a party was forced into accepting unreasonable terms or conditions.

Using the above criteria, we found that negotiations were fair and reasonable. Information flowed freely between the parties, parties appeared to understand each other's positions, parties were given fair amounts of time to respond to each draft of the contract, and no unreasonable demands were forced upon either party. We base this opinion on our monitoring of negotiations, review of all documentation, and independent expertise in overseeing contract negotiations.

As noted above, one factor that made this a relatively painless and fair negotiation was the fact that parties started with a previously approved transaction. As compared to that transaction, there were several changes, though beyond the changes to price and quantity they were relatively minor.

- First, the dates were updated for contract effective date, product delivery dates and final need for CPUC approval.

- Second, PG&E provided more specification regarding which units would supply the power. In the old contract a list of 20 units was provided. In this contract in Section 9.2 PG&E specifies a subset of those facilities that it anticipated would supply the contract. These facilities are; three units at the Geysers Power Plant (units 13, 16 and 18) located in Middletown, California and three units from Pacer County Water Authority all located in Forestville, California (French Meadows 2, Oxbow 1 and Hell Hole 1). PG&E retains the right to use other facilities, but will notify Tenaska if power is delivered from a facility other than the six above. PG&E requested this provision since they plan to use the same 6 units for the bulk of the contract supply.

- [redacted].

- [redacted].

From our observation, none of these changes were the subject of any particular controversy. More importantly, none of these changes represent any significant shifting of risk to ratepayers.

7.s the contract Merit CPUC Approval?

a. ***Provide narrative for each category and describe the project's ranking relative*** *to: 1) other offers from the solicitation (or recent bilaterals or market information if used in reasonableness comparison; 2) other procurement opportunities (e.g. distributed generation programs); and 3) from an overall market perspective:*

1. *Contract Price, including transmission cost adders*
2. ***Project's net market value***
3. *Consistency with stated RFO goals*
4. *Portfolio Fit*
5. *Project Viability*
    1. *Project Viability Calculator score*
    2. *IOU-specific project viability measures*
    3. ***Other (credit and collateral, developer's project development*** *portfolio, transmission, other site-related matters, etc.)*
6. *Any other relevant factors*

b. *Do you agree with the IOU that the contract merits CPUC approval? Explain the merits of the contract based on offer evaluation, contract negotiations, final price, and viability.*

c. *Any other relevant information or observations*

We believe that the CPUC should approve the contract. We say so for four reasons. First, as noted above, the negotiations were open and fair. Boston Pacific was able to participate in phone calls between parties, review contract documents and e-mails between parties. Based on our observations, all parties acted reasonably and fairly and the final transaction is acceptable to both parties.

Second, the PPSA itself is reasonable and does not contain any provision which shift excessive risk to ratepayers. The contract uses the terms and conditions from the EEI Master Agreement and is essentially the same as last year's approved transaction, with minor edits to adjust dates and provide more clarity on how the transaction will operate.

Third, the sale is appropriate given PG&E's current and forecasted RPS portfolio balance. Looking at the latest Renewable Net Short calculations, included here as Exhibit Two, we see that PG&E is forecasted to have a fairly significant RPS surplus for this year. The 2014 RPS target is 21.7% and PG&E forecasts an RPS position of [redacted] (risk adjusted). The end result is a forecasted gross surplus of [redacted] GWh worth of RECs for 2014 alone. Moreover, 2014 is not unusual in terms of the projected surplus. For the three-year compliance period running through 2016, PG&E forecasts a cumulative banked surplus of [redacted] GWh worth of RECs. Given that PG&E has such a significant surplus it makes sense to look for opportunities to sell off some of that surplus to reduce costs for ratepayers. In this case selling off 50 GWh at market prices allows PG&E to make use of that surplus and receive revenues which can be used to lower ratepayer costs.

Finally, the price is reasonable given current market conditions. We note here that it is somewhat challenging to evaluate this price given the lack of a transparent market for Category 1 RECs. These RECs are typically sold via bilateral transactions and often feature a single payment for both energy and associated RECs. This makes it difficult to find comparable transactions and to tell what price premium is being paid for the REC itself.

Nonetheless we can look at several factors to determine if the price here is reasonable. First we can compare it to the last approved transaction between these two parties. As noted above, [redacted].

Conceptually there are factors which explain this price decline. The previous transaction produced RECs for the 2011-2013 RPS compliance period while this transaction produces RECs for the 2014-2016 compliance period. It is understandable that - absent a forecast of significant shortage or a glut in current supply - prices will likely be higher at the end of a compliance period than at the beginning of the period, when suppliers have nearly three years to come up with their requirements.

Another check can be made more directly by looking at quotes for Category 1 RECs from brokers. Around the time the transaction was initially proposed PG&E reached out to several sources for quotes regarding the REC premium for Category 1 supply for the 2014-2016 period. The results are included here as Exhibit Three. From this Exhibit we can see that [redacted]

[redacted]We can also have some comfort that an independent broker established the price for this transaction after surveying the market.

We can also look at other recent proposed transactions for similar supply involving PG&E. [redacted]

Yet another check on price can be made by looking for comparable transactions between other parties. Just this month Marin Clean Energy presented a PPSA for supply from Calpine Energy Services that is very similar to this one to their Board of Directors. In fact some of the units Calpine will use to supply the Marin contract, the Geysers Geothermal Units 13,16 and 18, will also supply the PG&E contract. The contract, attached as Exhibit Four, calls for the sale of 25,000 MWh worth of bundled energy and RECs in from 2014 through the end of 2015. Marin Energy Authority will pay the day-ahead energy price at the delivery point for the energy and $20/MWh for the associated RECs to Calpine.

Another way to evaluate the REC price is to compare the price paid for these Category 1 RECs to prices for other REC Categories. Category 3 RECs, that is RECs unbundled from their associated energy, can come from a broad range of facilities and can only make up 15% of the RPS obligation for this compliance period. As such, they should be less expensive than the Category 1 RECs for sale here. In fact, that is exactly what we see. In October of 2013 PG&E requested approval of three PPSAs to purchase approximately 1.1 million Category 3 RECs.[4] [redacted].

Finally, we can use this transaction and market data to create a very rough bundled energy and REC price and compare that price to other transactions which bundle Category 1 RECs and energy into one price. We caution that these comparisons are not ideal since they involve transactions which cover different time periods, compliance periods and slightly different contract terms and products (for example, some transactions may also contain Resource Adequacy Credits). Nonetheless, this can generate additional points of comparison.

To do this we start by estimating energy revenues using futures data from the ICE Exchange. [redacted].

[4] See PG&E Advice letters 4299-E, 4300-E and 4301-E, filed October 10, 2013.

This is generally in the range of some recent longer-term transactions. The February 2014 Padilla Report to the Legislature shows the weighted average time-of-day adjusted price for all PG&E bundled energy and REC contracts approved in 2013 as 0.0672 cents per kwh or $67.20/MWh. For small hydro contracts for all utilities the price was 0.0559 cents per kwh or $55.90/MWh. Additionally, we are currently monitoring negotiations between a renewable facility and PG&E where the facility has proposed [redacted]. Again, we caution that these comparisons are not ideal since they involve different time periods, resources and in some cases include additional value such as resource adequacy. Nevertheless, they provide a bit of additional support for the pricing of this contract.

EXHIBIT ONE

BROKER CONFIRMATION SHEET

EXHIBIT TWO

PG&E RENEWABLE NET SHORT CALCULATION

EXHIBIT THREE

PG&E BROKER QUOTES FOR CATEGORY 1 RECS

EXHIBIT FOUR

CONTRACT BETWEEN MARIN CLEAN ENERGY AND CALPINE

May 1, 2014

TO: Marin Clean Energy Board

FROM: Greg Brehm, Director of Power Resources

RE: Power Purchase Agreement with Calpine Energy Services, L.P. for Renewable Energy Supply (Agenda Item #7)

ATTACHMENT: Confirmation Letter Agreement with Calpine Energy Services L.P. for Renewable Energy Supply in 2014 & 2015.

Dear Board Members:

Overview:
Through MCE's 2013 Open Season procurement process ("Open Season") for Renewable Energy ("RE"), MCE executed an Edison Electric Institute (EEI) Master Agreement and associated confirmation letters for local geothermal energy products with Calpine Energy Services ("Calpine"). Requisite transaction documents, including pertinent commercial terms addressing the various energy products to be purchased/sold by the parties, were presented to and discussed with the Ad Hoc Contracts Committee, which provided oversight and input throughout the Open Season process. The resultant executed agreements allowed for the addition of additional of future renewable and conventional energy products as needed to meet MCE's energy portfolio needs. Subsequent to the execution of the agreement, staff identified net short position for 2014 and 2015 because of under production in MCE's existing landfill gas contracts. As a result staff negotiated a short term, "as available" confirmation for 15,000 MWh in 2014 and 10,000 MWh in 2015. The attached confirmation reflects the intended terms and conditions of this proposed transaction accurately. This transaction supplements MCE's existing RE supply portfolio with a highly desirable, locally situated geothermal resource.

Location & Project Viability:
The Geysers facility is an existing complex of 15 geothermal power plants totaling 725 MW located approximately 40 miles north of San Rafael in Sonoma and Lake Counties. The Geysers geothermal field has been supplying commercial electric power since 1960. Because of existing RE supply agreements, only a portion of the Geysers generation can be supplied to MCE in 2014 & 2015 on an "as available" basis. As available resources form this type of thermal energy generation represent the excess capacity created when cooler than average temperature and weather conditions are present.

Portfolio Fit:
The energy delivery profile associated with the Geysers is highly desirable due to its predictability and availability – as a geothermal generating unit, the Geysers is expected to deliver electric energy in a pattern that minimally fluctuates from hour to hour (throughout the year); this delivery profile substantially differs from other prominent RE technologies, such as solar and wind generation, which tend to demonstrate significant variability in hourly, daily and seasonal energy production. For planning purposes, integrating a geothermal generating resource in the MCE supply portfolio is relatively simple. Other portfolio benefits include the project's exceptionally low emission rate, and the developer's deep experience and strong track record in operating similar projects. Renewable energy volumes produced by the facility will complement MCE's existing RE and RA supply. The timing of deliveries will help replace the planned reduction in renewable energy deliveries under the Shell Energy North America (SENA) agreement. Additional information is provided below regarding the prospective counterparty.

Counterparty Strength:
Calpine Energy Services L.P. / GEYSERS

- Calpine Energy Services, L.P. ("CES") and Geysers Power Company ("GPC") are both wholly owned subsidiaries of Calpine Corporation.
- Local offices in Dublin, CA, headquartered in Houston, Texas
- Calpine Corp. is rated B+ by S&P, and B1 by Moody's
- Calpine Corporation was founded in 1984, and is a major U.S. power company, capable of delivering more than 27,321 MW of clean, reliable and fuel-efficient electricity, with another 1,163 MW under construction.
- The company develops, constructs, owns and operates a modern and flexible fleet of low-carbon, renewable geothermal power plants as well as natural gas-fired fleet ***(Natural Gas generation is not part of this contract).*** Using advanced technologies, Calpine generates reliable and environmentally responsible electricity for its customers.

Contract Terms:
Calpine is able to offer additional products and services which MCE may choose to utilize as it phases out its mid-term "full requirements" contract with SENA. Staff chose to use an industry standard contract, the Edison Electric Institute (EEI) Master Agreement and associated confirmation letters for each of the products under this contract to maximize contracting flexibility. MCE's standard PPA terms have been incorporated into the EEI agreement (through a cover sheet, which notes specific changes to the master

EEI agreement that will apply under this transaction and the confirmation agreements) to the extent possible and applicable.

The EEI master agreement was developed through industry-wide collaboration with the National Energy Marketers Association (and others) and is widely used in the electric utility industry as the contractual basis for various energy transactions. The agreement contains the essential terms that govern forward purchases and sales of wholesale electricity, and is the same agreement MCE used in contracting with SENA. Use of an industry-vetted Master Contract streamlines the process of establishing a trading relationship, provides credit provisions, standardizes product definitions, and allows counterparties to focus on the transaction's commercial elements, e.g., price, quantity, location, and duration.

As a result of the current negotiation process, Staff has negotiated mutually agreeable terms with Calpine to address the following item:
Short term (2014 & 2015) renewable energy confirmation – this agreement will provide MCE customers with necessary renewable energy, filling projected deficits that would otherwise occur during the 2014 & 2015 calendar years.

Contract Overview:

- Project: Existing Geothermal project
  Provides as available energy from the 725 MW facility with a 98% capacity factor
- Project location: Sonoma and Lake Counties, California
- Guaranteed commercial operation date: January 1, 2014
- Contract term: Short term 2014 and 2015.
- Delivery profile: as available
- Expected annual energy production: 15,000 MWhs in 2014 and 10,000 MWh in 2015 including all environmental attributes associated therewith
- Guaranteed energy production (97% of projected annual deliveries)
- Energy price: Index plus $20, Calpine to net CAISO revenues prior to billing MCE
- No credit/collateral obligations for MCE

Summary:
The Geysers project is a good fit for MCE's resource portfolio based on the following considerations:

- The project size and expected energy production will support the future renewable energy requirements of MCE customers.
- Timing of initial energy deliveries under the agreement is aligned with planned reduction in renewable energy deliveries under SENA agreement.
- The project is being operated by an experienced team, which is currently supplying power from various projects to MCE and other multiple counterparties.
- The project is located within California and meets the highest value renewable portfolio standards category ("Bucket 1").
- The project is highly viable and has been producing power since 1960.
  from the project is competitively priced.

Recommendation: Information only. No Action Required.

Calpine Energy Services, L.P.
717 Texas Avenue, Suite 1000
Houston, Texas 77002
(713) 830-8333
Fax: (713) 830-8868

CONFIRMATION LETTER

Date:	April 24, 2014
To:	Marin Energy Authority
Attention:	Confirmation Department
Fax No.:	(415) 459-8095
From:	Calpine Energy Services, L.P.
Re:	Calpine Deal Number:
	Calpine Agreement Number: CESLP-2.3.3-47390

The purpose of this Confirmation is to confirm the terms and conditions of the transaction (the "Transaction") agreed upon by Buyer and Seller as of the Trade Date specified below. This Confirmation supplements, forms a part of, and is subject to that certain Master Power Purchase and Sale Agreement dated July 11, 2013 between Buyer and Seller, as may have been previously amended (the "Master Agreement"). All provisions contained in or incorporated by reference in the Master Agreement will govern this Confirmation except as expressly modified herein. The Master Agreement shall be governed by the laws of the state governing the Master Agreement as therein set forth except with respect to matters relating to the California Renewable Portfolio Standard, which shall be governed by the law set forth in this Confirmation. Subject to any contrary provisions in the Master Agreement, in the event of any inconsistency between the provisions of the Master Agreement and this Confirmation, this Confirmation will prevail for the purpose of this Transaction.

We confirm the following terms of our Transaction:

Buyer	Marin Energy Authority ("Buyer")
Seller	Calpine Energy Services, L.P. ("Seller")
Product	The "Product" shall mean bundled energy (also referred to herein as "electricity") and its associated Green Attributes, including Renewable Energy Credits, produced by the Project on a unit firm basis during the Delivery Term.
Green Attributes	The Product shall include all Green Attributes associated with the energy. "Green Attributes" means any and all credits,

	benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as: (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO2), methane (CH4), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere[1]; (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser's discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy. Green Attributes do not include: (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or "tipping fees" that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by

	the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project. [STC 2] (1)Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.
Project	The term "Project" shall mean the portion of the net generation delivered to the CAISO corresponding to the Contract Quantity of Product delivered to Buyer in accordance with the terms and conditions of this Confirmation from the renewable generation facilities specified in Schedule A, including any "pooled facilities" added to Schedule A in accordance with this Confirmation (the "Facilities"), in each case, (a) which has been certified by the California Energy Commission ("CEC") as an ERR, and (b) which has its first point of interconnection to the WECC transmission grid within the metered boundaries of a California balancing authority area. The Parties acknowledge and agree that the Project consists of the Facilities and that Seller will, in its sole discretion, utilize one or more of these Facilities in order to satisfy its obligations hereunder. Following the Effective Date, Seller may add facilities to Schedule A, provided that (a) each facility added is certified by the CEC as an ERR, (b) each facility added is identified in a written notice provided by Seller to Buyer at least one Business Day prior to such addition to Schedule A, and (c) for the purposes of this transaction, Seller shall only deliver Product to Buyer from an additional pooled facility that is generated on a date after the date that the additional facility is added to Schedule A.
Delivery Term	The "Delivery Term" shall be from the Effective Date through the earlier of (a) December 31, 2015 or (b) the date on which Seller has completed delivery of the maximum Contract Quantity of Product to Buyer pursuant to this Confirmation. Notwithstanding the

	foregoing, RECs shall be delivered in accordance with the "RPS Category 1 Delivery Obligations" section below.
Contract Quantity	Subject to the "Delivery Periods" for each of the Facilities , "Contract quantity" shall be 25,000 MWh of Product.
Delivery Point(s)	Any one or combination of "Delivery Points" specified in Schedule A.
Contract Price	The "Contract Price" for each MWh of Product delivered to Buyer shall consist of the "Energy Price" (stated as $/MWh) plus the "RPS Category 1 Energy Premium."
Energy Price	For each hour of the Delivery Term, the hourly weighted average of the Day Ahead Locational Marginal Prices as published by the CAISO for the Delivery Point(s).
RPS Category 1 Energy Premium	$20.00 per REC
Settlement and Payment of Energy Price	Seller shall invoice Buyer for the energy portion of the Product on a monthly basis as follows: Energy Price multiplied by the quantity of energy delivered to Buyer in each hour of the invoiced month. The amount owed by Buyer for energy payment shall be reduced by the CAISO Credit on each month's invoice. The CAISO Credit reflects the CAISO energy revenues received by the Seller, on buyer's behalf when the energy component of the project is sold to CAISO. For purposes of this Confirmation, CAISO Credit shall be the Energy Price multiplied by the quantity of energy delivered in each hour of the invoiced month (denoted as a credit on Seller's invoice).
Settlement and Payment of RPS Category 1 Premium	Seller shall invoice Buyer for the Green Attributes portion of the Product on a monthly basis upon delivery of Green Attributes to Buyer's WREGIS Account as follows: RPS Category 1 Premium multiplied by the quantity of RECs delivered to Buyer in the invoiced month. Buyer shall pay Seller for the invoiced RECs within

	fifteen (15) days of Buyer's receipt of Seller's invoice. Title shall not pass to Buyer until Seller has received payment. The provisions in this Confirmation addressing Settlement and Payment of the Energy Price and the RPS Category 1 Premium are for administrative convenience only, and in no way shall modify the definition of Product.
Carbon Pricing	Neither Party shall be responsible to the other Party for any carbon related costs.
Credit	As per the terms of the Master Agreement.
Assignment	Neither Party shall assign this Agreement or its rights hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld; provided, however, either Party may, without the consent of the other Party (and without relieving itself from liability hereunder), transfer, sell, pledge, encumber or assign this Agreement or the accounts, revenues or proceeds hereof to its financing providers and the financing provider(s) shall assume the payment and performance obligations provided under this Agreement with respect to the transferring Party provided, however, that in each such case, any such assignee shall agree in writing to be bound by the terms and conditions hereof and so long as the transferring Party delivers such tax and enforceability assurance as the non-transferring Party may reasonably request. [STC 16]
Governing Law	This agreement and the rights and duties of the parties hereunder shall be governed by and construed, enforced and performed in accordance with the laws of the state of California, without regard to principles of conflicts of law. [STC 17]
Representations and Warranties	Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that: (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource ("ERR") as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and (ii) the Project's output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in law occurs after execution of this

	Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC 6] Seller, and, if applicable, its successors, represents and warrants that, as of the date of execution of this Confirmation and as of the date on which Seller provides notice to Buyer of the addition of a pooled facility to Schedule A in accordance with this Confirmation, the Product delivered by Seller to Buyer meets the RPS compliance requirements for Category 1 as set forth in California Public Utilities Code Section 399.16(b)(1)(A) and California Public Utilities Commission ("CPUC") Decision 11-12-052 ("RPS Category 1"). Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC REC -1] Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project. [STC 2] For the purposes of STC REC-1 and STC 6 "Commercially reasonable efforts" shall not require Seller to expend more than $5,000 in aggregate out-of-pocket costs and expenses to comply with such change in law.

	Seller, and if applicable, its successors, represents and warrants to Buyer throughout the Delivery Term, that: (a) Seller has good and marketable title to the Product being sold and delivered to Buyer pursuant to this Agreement; (b) Seller has not sold separately or committed to any third party any of the Product being sold and delivered to Buyer pursuant to this Agreement; (c) the Green Attributes being sold and delivered to Buyer pursuant to this Agreement have not been sold or otherwise claimed by Seller or, to Seller's knowledge, any third party; (d) the Green Attributes being sold and delivered to Buyer pursuant to this Agreement have not been used to meet any federal, state or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate by Seller or, to Seller's knowledge, any third party; (e) the Green Attributes being sold and delivered to Buyer pursuant to this Agreement are associated with generation from the Project during the Delivery Period; (f) The Project has its first point of interconnection to the WECC transmission grid within the metered boundaries of a California balancing authority area.
RPS Category 1 Delivery Obligations	Seller shall use the Western Renewable Energy Generation Information System (WREGIS) to transfer RECs to Buyer within 30 days of receipt of RECs in Seller's WREGIS account and in accordance with the terms and conditions of this Confirmation, provided that, in no event shall RECs be transferred that do not contain the California RPS Certification Number. Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract. [STC REC-2] Buyer warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to

	be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract. (a) For RECs not tracked in WREGIS due to circumstances beyond reasonable control of the Seller, Seller shall provide all necessary documentation in order for the CEC to assign California RPS eligibility to non-WREGIS RECs. Seller shall, at its sole expense, take all actions and execute all documents or instruments necessary to ensure that all WREGIS Certificates associated with all Renewable Energy Credits corresponding to all delivered electricity are issued and tracked for purposes of satisfying the requirements of the California Renewables Portfolio Standard and transferred in a timely manner to Buyer for Buyer's sole benefit. (b) Seller shall, at its sole expense, ensure that the WREGIS Certificates for a given calendar month correspond with the delivered electricity for such calendar month as evidenced by the Project's metered data during the Delivery Term. (c) For the term of the Agreement, Seller shall deliver and convey the Green Attributes as provided above by properly transferring WREGIS Certificates corresponding to such Green Attributes, using "Inter-Account" (as described in the WREGIS Operating Rules) from Seller's WREGIS account to Buyer's WREGIS account such that all right, title and interest in and to such WREGIS Certificates shall transfer from Seller to Buyer. Seller shall be responsible for all expenses associated with establishing and maintaining Seller's WREGIS Account. (d) Seller shall exercise commercially reasonable efforts to assist Buyer (or its affiliates) with Buyer's (or its affiliate's) RPS compliance filings which are directly related to this transaction, as may be necessary.
Definitions	(a) "MW" means megawatt. (b) "MWh" means megawatt-hour. (c) "RECs" or "Renewable Energy Credits" has the meaning set forth in the California Public

Deal Number:

	Utilities Code Section 399.12 and CPUC Decision 08-08-028, as may be amended or supplemented from time to time or as further defined or supplemented by law. (d) "RPS" or California Renewables Portfolio Standard" means the renewable energy program and policies established by Senate Bills 1038 and 1078 and 2 (1X) codified in California Public Utilities Code Sections 399.11 *et seq* and California Public Resources Code Sections 25740 through 25751, as such provisions are amended or supplemented from time to time. (e) "WECC" means the Western Electricity Coordinating Council. (f) "WREGIS" means the Western Renewable Energy Generation Information System or any successor renewable energy tracking program. (g) "WREGIS Certificate" means a "Certificate" as defined by WREGIS in the WREGIS Operating Rules and designated by law as eligible for complying with the California Renewables Portfolio Standard. (h) "WREGIS Operating Rules" means those operating rules and requirements adopted by WREGIS, as subsequently amended, supplemented or replaced from time to time.

Calpine Energy Services, L.P.

SK

By: _____

Name: Will Stoker

Title: VP Power Trading

Date: 4/24/14

Marin Energy Authority

By: _____

Name: Dawn Weisz

Title: Executive Officer

Date: _____

Deal Number:

SCHEDULE A

(PROJECT)

Facilities Comprising the Project as of the Effective Date

Name of Facility	Delivery Point	CEC RPS ID	Delivery Period	Host Balancing Authority
Aidlin Power Plant	POD_ADLIN_1_UNITS-APND	60115A	Full Delivery Term	CAISO
Bear Canyon Power Plant	POD_BEARCN_2_UNITS-APND	60112A	Full Delivery Term	CAISO
Sonoma Power Plant	POD_SMUDGO_7_UNIT 1-APND	60010A	Full Delivery Term	CAISO
West Ford Flat Power Plant	POD_WDFRDF_2_UNITS-APND	60114A	Full Delivery Term	CAISO
Geysers Units 5&6	POD_GYS5X6_7_UNITS-APND	60002A	Full Delivery Term	CAISO
Geysers Units 7&8	POD_GYS7X8_7_UNITS-APND	60003A	Full Delivery Term	CAISO
Geysers Unit 11	POD_GEYS11_7_UNIT11-APND	60025B	Full Delivery Term	CAISO
Geysers Unit 12	POD_GEYS12_7_UNIT12-APND	60004A	Full Delivery Term	CAISO
Geysers Unit 13	POD_GEYS13_7_UNIT13-APND	60005A	Full Delivery Term	CAISO
Geysers Unit 14	POD_GEYS14_7_UNIT14-APND	60026B	Full Delivery Term	CAISO
Geysers Unit 16	POD_GEYS16_7_UNIT16-APND	60006A	Full Delivery Term	CAISO
Geysers Unit 17	POD_GEYS17_7_UNIT17-APND	60007A	Full Delivery Term	CAISO
Geysers Unit 18	POD_GEYS18_7_UNIT18-APND	60008A	Full Delivery Term	CAISO
Calistoga Power Plant	POD_SANTFG_7_UNITS-APND	60117A	Full Delivery Term	CAISO
Geysers Unit 20	POD_GEYS20_7_UNIT20-APND	60009A	Full Delivery Term	CAISO

Pooled Facilities Added to Project After the Effective Date

Name of Facility	Delivery Point	CEC RPS ID	Delivery Period	Host Balancing Authority

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

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