

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



November 14, 2014

Advice Letter 4507-E

Meredith Allen
Senior Director, Regulatory Relations
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, CA 94177

**Subject: Updated Greenhouse Gas (GHG) Purchase Limit in PG&E's
Bundled Procurement Plan**

Dear Ms. Allen:

Advice Letter 4507-E is effective January 1, 2015.

Sincerely,

A handwritten signature in cursive script that reads "Edward F. Randolph".

Edward F. Randolph, Director
Energy Division

October 2, 2014

Advice 4507-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Updated Greenhouse Gas (“GHG”) Purchase Limit in Pacific Gas and Electric Company’s Bundled Procurement Plan

Purpose

Pursuant to Ordering Paragraph (“OP”) 9 of Decision (“D.”) 12-04-046, Pacific Gas and Electric Company (“PG&E”) hereby submits to the California Public Utilities Commission (“Commission” or “CPUC”) this advice letter filing to update PG&E’s Direct Compliance Obligation Purchase Limit (the “GHG Limit”) applicable to year 2015. PG&E’s GHG Limits are established in Appendix L of PG&E’s 2010 Bundled Procurement Plan (“BPP”).

Background

On April 19, 2012, the Commission issued D.12-04-046, authorizing PG&E to procure certain compliance instruments to comply with its GHG compliance obligation under the California Air Resources Board’s (“CARB”) Cap-and-Trade Program.¹ D.12-04-046 also specified that PG&E’s procurement of such GHG compliance instruments is subject to maximum purchase limits, including a Direct Compliance Obligation Purchase Limit.² D.12-04-046 required PG&E to update its BPP to incorporate the modifications made in that decision.

On May 21, 2012, PG&E submitted supplemental Advice Letter 4026-E-A to incorporate modifications required by D.12-04-046 into its BPP. PG&E subsequently identified additional modifications in order to conform its BPP to D.12-04-046, which PG&E submitted in its second supplement on August 31, 2012 in Advice Letter 4026-E-B, replacing the BPP provided in Advice Letter 4026-E-A in its entirety. On October 11, 2012, the Commission issued Resolution E-4544, which approved PG&E’s BPP, including the GHG Procurement Plan included as Appendix L.

¹ See D.12-04-046 at Conclusion of Law (“COL”) 8.

² *Id.* at Ordering Paragraphs 8 and 9.

The GHG Procurement Plan detailed the GHG Limits applicable to years 2012 and 2013. As described above, D.12-04-046, Ordering Paragraph No. 9 allows PG&E to “update [its] greenhouse gas compliance forecasts (and corresponding purchase limits) as necessary via a Tier 2 advice letter.” Resolution E-4544 also approved the portion of PG&E’s BPP incorporating this authority to update PG&E’s GHG Limits.³ Accordingly, PG&E submitted its GHG Limit for the year 2014 and provided an updated GHG Limit applicable to the remainder of 2013 in Advice Letter 4290-E, effective January 1, 2014. Additionally, on September 24, 2014, PG&E submitted Advice Letter 4499-E in compliance with Resolution E-4660 which further modifies PG&E’s GHG Limit for 2014. PG&E hereby submits this advice letter filing to update PG&E’s GHG Limit for the year 2015. The updated GHG Limit table discussed herein will therefore replace the one in PG&E’s GHG Procurement Plan.

Description of Changes to PG&E’s GHG Procurement Plan

Table Appendix L-4 on BPP Sheet No. 303 details PG&E’s forecast of the amount of GHG compliance instruments required for PG&E to meet CARB’s Cap-and-Trade compliance requirement associated with PG&E’s own facilities and imports, as well as PG&E’s GHG contractual obligations associated with Power Purchase Agreements with third parties. For the purposes of calculating the GHG Limit, this advice letter updates PG&E’s compliance forecast through year 2018.

PG&E’s calculation of its updated 2015 GHG Limit is consistent with the Direct Compliance Obligation Purchase Limit formula approved by the Commission in Appendix 1 to D.12-04-046. Table Appendix L-5 provides the results of the calculations used to determine the 2015 GHG Limit consistent with PG&E’s Commission approved Direct Compliance Obligation Purchase Limit methodology.⁴

Key Drivers of Differences

Consistent with the requirements specified by the GHG Procurement Plan, PG&E explains the key drivers of changes to its GHG Limits and provides workpapers detailing PG&E’s calculation of the applicable limits as Confidential Appendix A.⁵ Differences between PG&E’s 2015 GHG Limit compared to the limit applicable to 2014 are driven by (1) updates to PG&E’s forecast of its direct compliance obligation; and (2) PG&E’s net remaining compliance obligation to date.

³ See BPP, Sheet No. 307 (specifying that PG&E will update its GHG compliance forecasts and corresponding purchase limits as necessary via a Tier 2 Advice Letter).

⁴ See D.12-04-046 at COL 8 and Appendix 1; See also BPP, Sheet Nos. 301-302 (providing the calculation for PG&E’s Direct Compliance Purchase Limit).

⁵ BPP, Sheet No. 307.

Specifically, the calculation of PG&E's GHG Limits considers updated information concerning PG&E's forecast of its direct compliance obligation through 2018. PG&E's GHG compliance forecast is different relative to that estimated at the time of PG&E's GHG Procurement Plan filing in 2013 due to changes in its portfolio and changes in market conditions. PG&E's GHG Limits differ from the 2014 limit after accounting for PG&E's GHG compliance instrument purchases to date, relative to PG&E's estimated GHG compliance obligation to date.

The accompanying confidential workpapers further detail PG&E's calculation of the GHG Limits.

Confidentiality

In support of this Advice Letter, PG&E submits Confidential Appendices A, B, and C 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 General Order 66-C and Public Utilities Code Section 454.5(g). A separate Declaration Seeking Confidential Treatment is being filed concurrently with this Advice Letter.

Appendices

Confidential Appendix A	GHG Limit Workpapers
Confidential Appendix B	GHG Procurement Plan (Redlined)⁶
Confidential Appendix C	GHG Procurement Plan (Clean)
Public Appendix D	Public version of GHG Procurement Plan (Redlined)
Public Appendix E	Public version of GHG Procurement Plan (Clean)
Public Appendix F	Confidentiality Declaration and Matrix

⁶ PG&E redlined the GHG Procurement Plan filed in Advice Letter 4499-E on September 24, 2014.

Protests

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, facsimile or E-mail, no later than October 22, 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:

Meredith Allen
Senior Director, Regulatory Relations
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, California 94177

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

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 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, Section 3.11).

Effective Date

PG&E requests that this advice filing become effective on but not before January 1, 2015. PG&E is designating this as a Tier 2 Advice Letter, in accordance with D.12-04-046 and the BPP.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list for Rulemaking ("R.") 13-12-010. Address changes to the General Order 96-B service list should be directed to PG&E at email address 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. Send all electronic approvals to PGETariffs@pge.com. Advice letter filings can also be accessed electronically at: <http://www.pge.com/tariffs/>.

/s/

Meredith Allen
Senior Director, Regulatory Relations

Attachments

cc: Service List R.13-12-010

CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY ENERGY UTILITY

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

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

Utility type:

ELC GAS
 PLC HEAT WATER

Contact Person: Jennifer Wirowek

Phone #: (415) 973-1419

E-mail: J6ws@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) #: **4507-E**

Tier: **2**

Subject of AL: **Updated Greenhouse Gas ("GHG") Purchase Limit in Pacific Gas and Electric Company's Bundled Procurement Plan**

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 #: D. 12-04-046

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 Appendix F

Confidential information will be made available to those who have executed a nondisclosure agreement: Yes No

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: Elizabeth Ingram (415) 973-8613

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: Meredith Allen

Senior Director, Regulatory Relations

77 Beale Street, Mail Code B10C

P.O. Box 770000

San Francisco, CA 94177

E-mail: PGETariffs@pge.com

Public Appendix D

Public Version of GHG Procurement Plan (Redlined)



APPENDIX L
GHG PROCUREMENT PLAN

CONFIDENTIAL



A. Background

1. California Air Resource Board’s Cap-and-Trade Regulations

Assembly Bill (“AB 32”) is California’s groundbreaking greenhouse gas (“GHG”) legislation that requires the reduction of statewide GHG emissions to 1990 levels by 2020. To this end, the California Air Resources Board (“CARB”) proposed a statewide Cap-and-Trade regulation and other programmatic measures, including a Renewable Energy Standard, Customer Energy Efficiency, and Combined Heat and Power, to achieve these emissions reductions. The Cap-and-Trade regulation, which became effective on January 1, 2012, is intended to establish a market-based price for GHG emissions and, over time, provide market signals for efficient resource utilization and procurement activities to reduce GHG emissions. Since that time, the regulation has been and is likely to continue to be amended; should changes to the regulation necessitate modifications to this plan, Pacific Gas and Electric Company (“PG&E”) will submit an advice letter to the California Public Utilities Commission (“CPUC” or “Commission”) requesting changes.

Compliance with the emissions cap established in the CARB Cap-and-Trade regulation began in 2013 and is broken up into three compliance periods. The first compliance period—for the years 2013 through 2014—commenced on January 1, 2013. Covered entities in the first compliance period include operators of any facility that annually emits at least 25,000 metric tons of carbon dioxide equivalent (“mtCO₂e”).¹ Operators are required to obtain and surrender compliance instruments equivalent to the annual GHG emissions for each such facility. Importers of electricity into California are

¹ Units of GHG are typically measured in terms of mtCO₂e.



also responsible for obtaining and retiring compliance instruments for GHG emissions deemed to be associated with electricity imports for purposes of compliance with Cap-and-Trade.

The second compliance period—for the years 2015 through 2017—is scheduled to commence on January 1, 2015. Beginning in the second compliance period, covered entities expand to include, among others, suppliers of natural gas that meet or exceed the 25,000 mtCO₂e threshold. A supplier of natural gas is required to obtain and surrender compliance instruments for every metric ton of CO₂e that would result from the full combustion or oxidation of all fuel delivered to end users in California, less the emissions associated with fuel that is delivered to its customers that are required to participate in the Cap-and-Trade Program (“covered entities”).

This plan only covers procurement activities necessary to comply with Pacific Gas and Electric Company’s (“PG&E”) obligations related to electric procurement and gas compressor stations. Additional procurement necessary to meet PG&E’s compliance obligations as a natural gas supplier under the second compliance period and the associated cost recovery will be as authorized through California Public Utilities Commission (“CPUC” or “Commission”) Order Instituting Rulemaking (“R.”) 14-03-003 or subsequent Commission proceedings.

There are two types of compliance instruments:

- i. **Allowances** are limited tradable authorizations accepted by CARB to emit up to one mtCO₂e. Allowances are year-specific and can be used for an annual compliance filing for the year it was issued or for any subsequent compliance filing. An allowance can be bought, sold, transferred, or “banked” for use in a particular compliance period. Allowances will be



available via direct allocation² by CARB, auctions conducted under the auspices of CARB, and the Allowance Price Containment Reserve³ (“APCR”) established by CARB. CARB auctions are currently held quarterly.⁴ Allowances may also become available in the market.

- ii. **Offset Credits** (“Offsets”) are tradable compliance instruments accepted by CARB that represent verified reductions of one mtCO₂e from projects whose emissions or avoided emissions are not from a source covered under the Cap-and-Trade Program. For compliance purposes, an Offset and an allowance are virtually interchangeable for the year issued, however, an entity can only use Offsets to meet up to 8 percent of its compliance obligation in any compliance period. In addition, CARB’s Cap-and-Trade regulation allows CARB to invalidate an Offset for errors, regulatory violations or fraud. CARB has adopted specific rules for using Offsets for Cap-and-Trade compliance, including the types of projects that qualify and the process for Offset verification, issuance, and registration.

Allowances and Offsets may also be available from external GHG Emissions Trading System (“GHG ETS”) to which California has linked.⁵

PG&E’s actual Cap-and-Trade compliance obligation for a given year is determined by the GHG emissions reported annually to CARB per the Mandatory Reporting Rule (“MRR”).⁶ Annual reports are due to CARB by April 10 of the calendar

² According to the Cap-and-Trade regulation, the investor-owned utilities (“IOU”) are required to consign 100% of their electric distribution utility (“EDU”) directly allocated allowances to the auctions in the allocation year; any allowances unsold in the previous year will remain in the IOU’s auction holding account. An IOU cannot use a directly allocated EDU allowance to satisfy its compliance obligation.

³ The CARB APCR will be populated with a finite quantity of allowances available for purchase at fixed prices and only by covered entities.

⁴ In 2012, there was one auction, on November 14, 2012. For that auction, IOUs were required by CARB to consign one-third of 2013’s allowances allocated to them; the balance of those allowances must be consigned to the auctions in 2013.

⁵ CARB’s Board approved amendments allowing for the use of compliance instruments issued by linked jurisdictions on May 10, 2013.

⁶ Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Division 3, Chapter 1, Subchapter 10, Article 2, Sections 95100 to 95133, title 17, California Code of Regulations).



year following the emission year for facility operators or suppliers, and June 1 for electric power entities.

Cap-and-Trade compliance showings are made annually and at the end of each compliance period. In order to demonstrate compliance in a given year, PG&E must surrender enough compliance instruments to cover 30 percent of its qualifying emissions by November 1 of the following calendar year (“annual surrender date”). In addition, PG&E must surrender enough compliance instruments to cover the balance of its qualifying emissions over a multi-year compliance period by November 1 of the calendar year following the end of each compliance period (“compliance period surrender date”).

PG&E receives an allocation of free allowances associated with its business as an EDU directly from CARB annually; however, these free allowances cannot be used directly by PG&E to satisfy its compliance obligation. All directly-allocated electric allowances must be consigned by PG&E into one or more of the auctions. In each year, allowances consigned at least seventy-five (75) days prior to a quarterly auction will be offered for sale at that auction and each consigning entity agrees to accept the auction settlement price for allowances sold at auction. Until 2015, only IOUs and publicly-owned utilities (“POU”) can consign allowances to the auction, and beginning in 2015, natural gas suppliers can also consign allowances into the auction.

2. Greenhouse Gas Compliance Instruments and California Air Resources Board Auctions

Procurement of compliance instruments may take place through any or all of the following: (1) CARB-sanctioned allowance auctions; (2) APCR; and (3) allowance or Offset procurement via the market.



The first CARB allowance auction took place on November 14, 2012, and allowance auctions will be held quarterly thereafter. To participate in an auction, PG&E must register for the auction prior to the auction date. The auction format consists of single-round bidding, with sealed bids consisting of price and quantity, and bid units of 1,000 mtCO₂e. Bidders may submit multiple bids. Each auction will clear at the auction settlement price as follows: beginning with the highest bid price, bids will be considered in declining order by price and bidders at that price will be awarded allowances until: (a) the next lower bid price is less than the auction floor price, in which case the current price is the settlement price; or (b) the total quantity of allowances bid at the next lower bid price is greater than or equal to the number of allowances available to be awarded, in which case the next lower bid price is the settlement price. If the total quantity bid at the settlement price is greater than the number of available allowances, the regulation describes the process by which these allowances would be distributed to each entity bidding at the auction settlement price.⁷

Prior to each auction, PG&E will also be required to provide a bid guarantee, which will consist of a bond, cash, or letter of credit with a value greater than or equal to the maximum value of bids to be submitted.⁸ The Cap-and-Trade regulation also limits each participating entity's holdings of allowances in its trading or compliance accounts, with certain exemptions. This limits the total amount of allowances any participating entity can purchase and hold. In addition, the regulation stipulates that CARB shall

⁷ The process for resolution of tie bids is specified in Section 95911 (e) (5) of the Cap-and-Trade regulation.

⁸ Auction participants must provide a bid guarantee to the financial services administrator at least twelve (12) days prior to the auction.



restrict IOUs and POUs from purchasing more than 40% of the allowances offered at each auction.

Prior to a given auction, CARB will disclose the number of allowances from California and any external GHG ETS to which California has linked that will be offered in that auction. Beginning in 2013, in addition to consigned allowances, in each auction of allowances from the current and previous budget years (“current auction”), CARB offers one-quarter of its own current year allowances designated for auction. Concurrent with the current auction, CARB will conduct an auction for allowances from future budget years (“advance auctions”). In each advance auction it will offer one-quarter of its own allowances allocated for the budget year three years subsequent to the current calendar year.⁹ Current and advance auctions will be conducted separately.

The APCR will be filled with 121.8 million mtCO₂e allowances for 2013-2020. There is no refill mechanism proposed for the APCR, and use of the APCR is restricted to entities registered into the California cap-and-trade system. Allowances purchased from the APCR go into an entity’s compliance account and cannot be withdrawn or traded. To the extent allowances remain in the APCR, they became available for purchase by complying entities on March 8, 2013. Subsequent APCR sales are conducted on the first day six weeks after each quarterly auction. The APCR consists of three tiers with different associated prices; each tier consists of one-third of the 121.8 million mtCO₂e allowances with which the APCR is initially populated. Tier 1 allowances will be sold to

⁹ With the exception of 2012, when all of the allowances allocated for advance auction from the 2015 budget will be designated for sale at the advance auction.



entities with a compliance obligation at \$40/mtCO₂e in 2013,¹⁰ Tier 2 at \$45/mtCO₂e in 2013, and Tier 3 at \$50/mtCO₂e in 2013.

Finally, to the extent that allowances are transacted between parties outside of the auction or APCR, within three days of settlement, the seller and buyer must report each transaction to CARB.¹¹

B. PG&E’s Allowance Consignment Proposal

[REDACTED]

C. PG&E’s Potential Greenhouse Gas Risks

1. Greenhouse Gas Obligations

PG&E is required by CARB’s Cap-and-Trade regulation to surrender compliance instruments for its qualifying utility-owned generation (“UOG”), imports, and gas compressor stations (herein collectively described as “physical” obligations).

¹⁰ The APCR price for each tier will rise by 5% plus the Consumer Price Index (“CPI”) each year.

¹¹ The timeline for transfer of compliance instruments between accounts may change as part of the proposed amendments to the cap-and-trade regulation.

[REDACTED]



Furthermore, PG&E has contractual obligations associated with certain tolling agreements that require it to either: (1) provide the counterparty with compliance instruments for the energy under contract; or (2) reimburse the counterparty for the Cap-and-Trade compliance costs associated with its facility's operation under the contract.

2. Cap-and-Trade Penalties

PG&E could face CARB penalties for failure to surrender an adequate number of compliance instruments for which it has a compliance obligation.

CARB's Cap-and-Trade rule imposes a four-time excess emissions penalty resulting from "untimely surrender" of allowances. This penalty would be assessed by requiring that additional compliance instruments be surrendered, rather than by cash payment. In addition, if an entity fails to surrender the required compliance instruments within five (5) days of the first auction or reserve sale conducted by CARB following the applicable surrender date, whichever is the latter, and for which the registration deadline has not passed when the untimely surrender obligation is assessed, CARB's Cap-and-Trade rule would treat each ton of GHG emissions for which a compliance instrument was not surrendered as a separate violation for each day the violation continues.

AB 32 incorporates longstanding air pollution penalty authority pursuant to Health and Safety Code ("HSC") Section 38580. In relevant part, under HSC § 42300 et seq., CARB may impose civil and criminal penalties on corporations and individuals and may also seek injunctive relief. Civil penalty authority (per day of violation) is up to \$10,000



(strict liability); \$20,000 (negligent emissions violation); \$40,000 (knowing emissions violation); \$35,000 (falsification of document with intent to deceive); and \$75,000 (intentional emissions violation). Additional penalties that are more severe can result from negligent or intentional violations causing unreasonable risk of or actual bodily injury or death. AB 32 specifies that any violation of a CARB climate regulation is considered an emissions violation.

[REDACTED]

[REDACTED]

[REDACTED]

3. Offset Credits (“Offsets”)

CARB’s Cap-and-Trade regulation allows CARB to invalidate an Offset for errors, regulatory violations, or fraud. In the case where an Offset is used to meet a compliance requirement and is later invalidated, the complying entity must replace the invalidated Offset with a valid compliance instrument within six (6) months of notification by CARB of the Offset’s invalidation or be subject to compliance penalties. PG&E will only purchase Offsets if the purchase contract requires the seller to assume the risk of invalidation and to post appropriate collateral. PG&E will assess the risk of invalidation for each Offset transaction.

D. PG&E’s GHG-Related Product Procurement

This GHG Procurement Plan addresses the GHG-related procurement authority necessary for PG&E to comply with the obligations associated with emissions from sectors covered by Cap-and-Trade beginning in the first compliance period, namely



facilities with GHG emissions greater than or equal to 25,000 mtCO₂e per year and imported electricity. As an entity that is required to comply with Cap-and-Trade, PG&E will need to procure compliance instruments to meet the compliance requirements associated with its own facilities and imports, as well as the GHG contractual obligations associated with Power Purchase Agreements with third parties that require PG&E to procure GHG compliance products or assume GHG compliance costs for such parties. PG&E's Energy Procurement Department will procure GHG compliance instruments for all of PG&E's emissions from sectors that are covered by Cap-and-Trade in the first compliance period, and transfer requested GHG allowances to PG&E's Gas Transmission and Distribution Department¹³ (i.e., for GHG emissions associated with gas compressor stations) at PG&E's weighted-average cost.¹⁴ Below, PG&E describes its GHG obligations and Commission-approved GHG-related products and procurement processes, as well as its GHG procurement strategy. The products, procurement processes, and GHG procurement strategy establish the upfront achievable standards for PG&E's procurement activities consistent with AB 57.

1. Greenhouse Gas Obligations

PG&E's primary need to procure GHG compliance instruments and engage in GHG transactions arises in connection with the following:

¹³ PG&E's Energy Procurement Department will only act as the buying agent for GHG Products requested by the Gas Transmission and Distribution Department for the limited GHG obligations associated with its gas compressor stations. The Gas Transmission and Distribution will request a quantity of compliance products from the Energy Procurement Department.

¹⁴ Weighted-average cost is the weighted-average cost of PG&E's allowances and Offsets in a given compliance year. For a discussion of cost recovery, see Section D.6



- **Utility-Owned Facilities:** Conventional generation facilities and gas compressor stations owned by PG&E that are either operating or under construction and that emit at least 25,000 mtCO₂e per year, such as the Humboldt Generating Station, Colusa Generating Station, and Gateway Generating Station, will have a compliance obligation under Cap-and-Trade.
- **Selected Tolling Agreements:** Contracts that allocate to PG&E or where PG&E has assumed GHG compliance instrument procurement responsibility for such counterparties.
- **Electricity Imports:** PG&E is responsible for GHG emissions deemed to be associated with its electricity imports for purposes of compliance with Cap-and-Trade.

2. Greenhouse Gas-Related Products

The following GHG-related products (“GHG Products”) have been approved by the Commission:

**TABLE APPENDIX L-1
PACIFIC GAS AND ELECTRIC COMPANY
GHG PRODUCTS**

Product	Description
GHG Allowance	A compliance instrument accepted by CARB providing the right to emit one mtCO ₂ e to satisfy obligations under the Cap-and-Trade regulation.
GHG Offset	A compliance instrument representing a verified emission reduction that is accepted by CARB in lieu of a GHG Allowance to satisfy obligations under the Cap-and-Trade regulation.

3. Greenhouse Gas-Related Processes

PG&E will procure GHG Products from the CARB and markets¹⁵ to meet its entity-specific and contractual compliance obligations in accordance with its procurement strategy. PG&E is authorized to procure these GHG Products using the following procurement methods:

¹⁵ CARB sells allowances through CARB auctions and the APCR. The market consists of allowance and Offset products offered for purchase outside of CARB.



**TABLE APPENDIX L-2
PACIFIC GAS AND ELECTRIC COMPANY
GHG PROCUREMENT METHODS AND PRACTICES**

Transaction Process	Description
CARB Auction	Authorization to procure GHG Allowances through any CARB Auction in accordance with the Cap-and-Trade regulation.
Allowance Price Containment Reserve	Authorization to procure GHG Allowances through CARB's Allowance Price Containment Reserve.

In addition to the new GHG Procurement Methods and Practices in Table Appendix L-2, PG&E will use approved procurement methods and practices as described in its Bundled Procurement Plan that govern procurement via competitive Requests for Offer (“RFO”) processes and transparent exchanges¹⁶ to procure GHG Products. When procuring via bilateral transactions (including brokers), PG&E will utilize a competitive RFO process, consult with its Procurement Review Group (“PRG”), apply its approved procurement credit and collateral requirements, and apply the applicable affiliate transaction rules. PG&E can also procure GHG Products on exchanges that have been previously approved by the Commission for power procurement. For exchanges not previously approved, PG&E will submit a Tier 2 advice letter detailing: (1) what exchange it is seeking to use; (2) the liquidity and transparency of the exchange, specific for GHG Products, including an explanation of how the Commission can be assured that the price of the products procured on the exchange is reasonable; and (3) the regulatory authority or authorities the exchange is subject to. Finally, PG&E has authority to resell GHG Products, but will report such sales to its PRG.

¹⁶ The use of exchanges includes the “clearing” of bilateral transactions authorized by the Commission.



4. Greenhouse Gas Procurement Strategy

[Redacted]

[Redacted]

[Redacted]

[Redacted]

■ [Redacted]

i. Maximum Volume Limits

j. Financially Hedging GHG Product Price Risk

Each of these elements is described in more detail below.

■ [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

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[Redacted content]



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facilities, certain tolling agreements, and electric imports. CARB's regulation also set limits on the number of allowances that can be held, and Offsets that can be used for compliance. In addition, Cap-and-Trade regulation restricts PG&E from purchasing more than 40% of the allowances offered at each auction through 2014 and more than 25% from 2015 onward. These various limits will cap the amount of GHG Products PG&E will procure. PG&E will also transact GHG Products consistent with regulations established regarding the use of such products for compliance with Cap-and-Trade. PG&E may purchase GHG Products in excess of its annual compliance requirements and may "bank" surplus GHG Products to use in future compliance years in accordance with its procurement strategy and the procurement limits set forth below.

Generally in the current year, PG&E may purchase GHG Products to fulfill 100% of its current net remaining compliance obligation and its forecasted compliance obligation for the remainder of the current year. In addition, in the current year PG&E may purchase a portion of its forecasted compliance obligation for the following three compliance years not to exceed a set percentage in total for each year. PG&E will not purchase GHG Products with vintages more than three years from the current year. Finally, PG&E will not purchase more than 8% of its direct compliance obligation, as defined below, in the form of Offsets, provided these purchases also stay within the overall GHG Product procurement limits identified below.

The procurement limit sets the maximum amount of GHG Products PG&E may purchase in the current year to fulfill its "direct compliance obligation," defined as the tons of emissions for which PG&E has an obligation to retire allowances on its own



behalf as a regulated entity under the Cap-and-Trade program, and/or is otherwise obligated to procure GHG Products for a third party that is a regulated entity under the Cap-and-Trade program (i.e., certain contractual arrangements where PG&E is contractually responsible, or could elect to assume that responsibility, for procuring GHG Products for a third party). A “purchase” is defined as taking title of the GHG Product when it is delivered. Thus forward purchases count against the procurement limit in the year delivered, which may not be the current year.

PG&E’s Direct Compliance Obligation Purchase Limit for the current year is calculated as:

$$LCY = A + 100\% * FDCY + 60\% * FDCY + 1 + 40\% * FDCY + 2 + 20\% * FDCY + 3$$

Where:

“L” is the maximum number of GHG Products PG&E can purchase for purposes of meeting its direct compliance obligation.

“CY” is the Current Year, i.e., the year in which PG&E is transacting in the market.

“A” is PG&E’s net remaining compliance obligation to date, calculated as the sum of the actual emissions for which PG&E is responsible for retiring allowances (or obligated to purchase for a third party) up to the Current Year, minus the total allowances or Offsets PG&E has purchased up to the Current Year that could be retired against those obligations. This term in the calculation ensures PG&E is always able to buy sufficient GHG Products to cover any prior years’ shortfalls, given that actual emissions may end up being less than forecast and/or prior decisions about how much procurement to do.

“FD” is PG&E’s “forecasted compliance obligation”, the projected amount of emissions for which PG&E is responsible for retiring GHG Products, or obligated to purchase for a third party, calculated using an



implied market heat rate (“IMHR”) that is two-standard deviations above the expected IMHR²⁶.

If this equation results in a negative number in a given year, PG&E’s Direct Compliance Obligation Purchase Limit for that year should be set at zero.

In addition to its Direct Compliance Obligation Purchase Limit, in the current year PG&E will not purchase GHG Products for future years greater than the percentage allowed in the Direct Compliance Obligation Purchase Limit formula. Therefore, for the prompt year (current year plus one) PG&E will not purchase in aggregate during the current year more than 60% of the prompt year’s forecasted compliance obligation (as calculated above). Similarly, the percentages for current year plus two and current year plus three are 40% and 20%, respectively.

Consistent with Ordering Paragraph 9 of D.12-04-046, Table Appendix L-4 below details estimated forecast of the amount of greenhouse gas compliance instruments (in metric tons carbon dioxide equivalents) that correspond to the maximum procurement levels ~~applicable to the periods~~ detailed in Table Appendix L-5.

²⁶ The IMHR two-standard deviations above the expected IMHR is calculated as follows: (1) the monthly historic IMHR is calculated by dividing monthly forward electricity prices by monthly forward gas prices for the period 2003 through 2011, yielding the forward monthly IMHR for this period; (2) monthly standard deviations of the forward monthly IMHR are then calculated separately for January through December; (3) the IMHR two-standard deviations above the expected IMHR is equal to the forward IMHR plus the standard deviation calculated in (2) multiplied by 2.0. The forward electricity prices to be used in calculating forecasted compliance obligations for the Direct Compliance Obligation Purchase Limits are then calculated by multiplying the IMHR at two-standard deviations above the expected IMHR by the forward gas price.



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j. Financially Hedging Greenhouse Gas Compliance Instrument Price Risk

Because the products and markets to financially hedge GHG compliance instrument price risk are not developed at this time, PG&E is not seeking authority financially hedge GHG compliance instrument price risk at this time. PG&E will seek to amend its BPP by advice letter to seek such authority as these markets and products

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develop. PG&E's purchase of financial instruments to hedge GHG Product price risk will be subject to the procurement limit set forth below.

The "financial exposure" purchase limit sets the specific limit on the amount of GHG Products PG&E can purchase to hedge its financial exposure to GHG costs under the Cap-and-Trade program. As with the Direct Compliance Obligation Purchase Limit formula above, this is a purchase limit, meaning the number that emerges from this calculation would set the maximum amount of GHG Products PG&E is allowed to purchase in the current year for purposes of hedging its financial exposure. As above, "purchase" is defined as taking title of the GHG Product when it is delivered. PG&E is not allowed to purchase allowances or Offsets for hedging purposes with vintages more than three years from the current year.

PG&E's Financial Exposure Purchase Limit is calculated as:

$$\text{FLCY} = 20\% * \text{FECY} + 10\% * \text{FECY}+1 + 5\% * \text{FECY}+2 + 2.5\% * \text{FECY}+3 - B$$

Where:

"FL" is the maximum number of GHG Products PG&E can purchase for purposes of hedging its financial exposure to GHG costs.

"CY" is the current year, i.e., the year in which PG&E is transacting in the market.

"FE" is an estimate of PG&E's financial exposure to GHG costs that will, or are anticipated to be, embedded in the price of energy, calculated based on the tons of GHG emissions for which PG&E believes it will bear the costs through an embedded cost of such emissions as reflected in energy prices. This amount does not include the costs PG&E anticipates incurring as a result of its direct compliance obligation as "direct compliance obligation" is defined above. "B" is PG&E's net purchases of GHG Products to date for hedging purposes, calculated as the total purchases of GHG Products for purposes of



hedging PG&E's financial exposure up to the current year minus those GHG Products sold up to the current year. This term helps ensure that if PG&E hedged considerably in prior years and those hedges did not pay out (i.e. the price PG&E saw in the market for GHG Products stayed below what PG&E paid for a GHG Product and so PG&E did not sell the instrument), that gets factored into the amount of additional hedging PG&E is allowed to undertake.

Should this equation result in a negative number in a given year, PG&E's Financial Exposure Purchase Limit for that year will be set at zero.

5. Procurement Review Group Consultation

PG&E will annually review with its PRG its proposed CARB auction bidding strategy, including discussion of the total volume of GHG Products that PG&E might acquire and its GHG position. PG&E will also consult with its PRG on RFOs for GHG Products, and prior to transacting for any GHG Product in the market with a vintage year²⁸ more than three years in the future beyond the current calendar year. PG&E will report any GHG Product sales to the PRG. Finally, PG&E will report any forecast updates, corresponding revisions to the purchase limits and GHG Product transactions to the PRG at its quarterly position update.

6. Quarterly Compliance Reports and Cost Recovery

Forecast updates and corresponding revision to the purchase limits along with all GHG Product transactions will be reported in PG&E's Quarterly Procurement Compliance Report ("QCR"). In addition, the QCR will provide a summary of current market conditions and all GHG Product transactions conducted by PG&E. PG&E records

²⁸ A "vintage year" is an attribute of each allowance that refers to the compliance year that CARB associates with the allowance at issuance. The vintage year designation restricts the allowance's eligibility for use to certain compliance periods. In the case of Offsets, the vintage year refers to the year in which the Offset is created.



costs for GHG Products²⁹ associated with the electric sector obligation and natural gas compressor station obligation in its respective Energy Resource Recovery Account (“ERRA”) and Gas Operational Cost Balancing Account (“GOCBA”) for recovery in rates.

PG&E’s request for cost recovery of GHG Products through ERRA and GOCBA implicitly assumes the purchase of these products can be financed with short-term debt. However, PG&E’s short-term borrowing capacity is limited, and much of that capacity is needed to meet day-to-day operational needs, other balancing account under-collections and collateral to support energy procurement. Thus, depending on the cost and tenor of these products, PG&E may need to resort to financing with long-term debt and/or equity. In that event, PG&E may seek alternative cost recovery mechanisms in order to recover its actual cost of financing of these products.

7. Approval for Contract Term Duration

For transactions of GHG Products with vintage years four years or fewer into the future, PG&E will include these transactions in its QCR and the annual ERRA Compliance proceeding. For transactions of GHG Products with vintage years more than four years into the future, PG&E will submit the transactions for review through the Commission’s advice letter process. PG&E will not enter into a contract whose delivery term extends beyond 2020.

²⁹ Including costs related to Offset development, if authorized, in accordance with the procurement strategy.



8. Independent Evaluator

For contracts with delivery terms that are greater than two years, PG&E will include an Independent Evaluator (“IE”) in any competitive solicitation and an IE Report in its respective QCR or advice letter filings.

9. Updates Via Advice Letter

The procurement strategy for which approval is requested above is based on the final CARB Cap-and-Trade and Mandatory Reporting Rule regulations. Certain changes to CARB’s regulations may affect implementation of this plan for GHG-related procurement. Should market conditions, CARB’s regulations, or the electric portfolio change to the point of necessitating modifications to the plan, PG&E will submit an advice letter to the Commission requesting changes.

PG&E will update its GHG compliance forecasts and corresponding purchase limits as necessary via a Tier 2 advice letter. The advice letter will include a description and workpapers detailing the calculation of the estimated purchase limits and an explanation of the key drivers of differences from the prior estimates.



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Public Appendix E

Public Version of GHG Procurement Plan (Clean)



APPENDIX L
GHG PROCUREMENT PLAN

CONFIDENTIAL



A. Background

1. California Air Resource Board's Cap-and-Trade Regulations

Assembly Bill ("AB 32") is California's groundbreaking greenhouse gas ("GHG") legislation that requires the reduction of statewide GHG emissions to 1990 levels by 2020. To this end, the California Air Resources Board ("CARB") proposed a statewide Cap-and-Trade regulation and other programmatic measures, including a Renewable Energy Standard, Customer Energy Efficiency, and Combined Heat and Power, to achieve these emissions reductions. The Cap-and-Trade regulation, which became effective on January 1, 2012, is intended to establish a market-based price for GHG emissions and, over time, provide market signals for efficient resource utilization and procurement activities to reduce GHG emissions. Since that time, the regulation has been and is likely to continue to be amended; should changes to the regulation necessitate modifications to this plan, Pacific Gas and Electric Company ("PG&E") will submit an advice letter to the California Public Utilities Commission ("CPUC" or "Commission") requesting changes.

Compliance with the emissions cap established in the CARB Cap-and-Trade regulation began in 2013 and is broken up into three compliance periods. The first compliance period—for the years 2013 through 2014—commenced on January 1, 2013. Covered entities in the first compliance period include operators of any facility that annually emits at least 25,000 metric tons of carbon dioxide equivalent ("mtCO₂e").¹ Operators are required to obtain and surrender compliance instruments equivalent to the annual GHG emissions for each such facility. Importers of electricity into California are

¹ Units of GHG are typically measured in terms of mtCO₂e.



also responsible for obtaining and retiring compliance instruments for GHG emissions deemed to be associated with electricity imports for purposes of compliance with Cap-and-Trade.

The second compliance period—for the years 2015 through 2017—is scheduled to commence on January 1, 2015. Beginning in the second compliance period, covered entities expand to include, among others, suppliers of natural gas that meet or exceed the 25,000 mtCO₂e threshold. A supplier of natural gas is required to obtain and surrender compliance instruments for every metric ton of CO₂e that would result from the full combustion or oxidation of all fuel delivered to end users in California, less the emissions associated with fuel that is delivered to its customers that are required to participate in the Cap-and-Trade Program (“covered entities”).

This plan only covers procurement activities necessary to comply with Pacific Gas and Electric Company’s (“PG&E”) obligations related to electric procurement and gas compressor stations. Additional procurement necessary to meet PG&E’s compliance obligations as a natural gas supplier under the second compliance period and the associated cost recovery will be as authorized through California Public Utilities Commission (“CPUC” or “Commission”) Order Instituting Rulemaking (“R.”) 14-03-003 or subsequent Commission proceedings.

There are two types of compliance instruments:

- i. **Allowances** are limited tradable authorizations accepted by CARB to emit up to one mtCO₂e. Allowances are year-specific and can be used for an annual compliance filing for the year it was issued or for any subsequent compliance filing. An allowance can be bought, sold, transferred, or “banked” for use in a particular compliance period. Allowances will be



available via direct allocation² by CARB, auctions conducted under the auspices of CARB, and the Allowance Price Containment Reserve³ (“APCR”) established by CARB. CARB auctions are currently held quarterly.⁴ Allowances may also become available in the market.

- ii. **Offset Credits** (“Offsets”) are tradable compliance instruments accepted by CARB that represent verified reductions of one mtCO₂e from projects whose emissions or avoided emissions are not from a source covered under the Cap-and-Trade Program. For compliance purposes, an Offset and an allowance are virtually interchangeable for the year issued, however, an entity can only use Offsets to meet up to 8 percent of its compliance obligation in any compliance period. In addition, CARB’s Cap-and-Trade regulation allows CARB to invalidate an Offset for errors, regulatory violations or fraud. CARB has adopted specific rules for using Offsets for Cap-and-Trade compliance, including the types of projects that qualify and the process for Offset verification, issuance, and registration.

Allowances and Offsets may also be available from external GHG Emissions Trading System (“GHG ETS”) to which California has linked.⁵

PG&E’s actual Cap-and-Trade compliance obligation for a given year is determined by the GHG emissions reported annually to CARB per the Mandatory Reporting Rule (“MRR”).⁶ Annual reports are due to CARB by April 10 of the calendar

² According to the Cap-and-Trade regulation, the investor-owned utilities (“IOU”) are required to consign 100% of their electric distribution utility (“EDU”) directly allocated allowances to the auctions in the allocation year; any allowances unsold in the previous year will remain in the IOU’s auction holding account. An IOU cannot use a directly allocated EDU allowance to satisfy its compliance obligation.

³ The CARB APCR will be populated with a finite quantity of allowances available for purchase at fixed prices and only by covered entities.

⁴ In 2012, there was one auction, on November 14, 2012. For that auction, IOUs were required by CARB to consign one-third of 2013’s allowances allocated to them; the balance of those allowances must be consigned to the auctions in 2013.

⁵ CARB’s Board approved amendments allowing for the use of compliance instruments issued by linked jurisdictions on May 10, 2013.

⁶ Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Division 3, Chapter 1, Subchapter 10, Article 2, Sections 95100 to 95133, title 17, California Code of Regulations).



year following the emission year for facility operators or suppliers, and June 1 for electric power entities.

Cap-and-Trade compliance showings are made annually and at the end of each compliance period. In order to demonstrate compliance in a given year, PG&E must surrender enough compliance instruments to cover 30 percent of its qualifying emissions by November 1 of the following calendar year (“annual surrender date”). In addition, PG&E must surrender enough compliance instruments to cover the balance of its qualifying emissions over a multi-year compliance period by November 1 of the calendar year following the end of each compliance period (“compliance period surrender date”).

PG&E receives an allocation of free allowances associated with its business as an EDU directly from CARB annually; however, these free allowances cannot be used directly by PG&E to satisfy its compliance obligation. All directly-allocated electric allowances must be consigned by PG&E into one or more of the auctions. In each year, allowances consigned at least seventy-five (75) days prior to a quarterly auction will be offered for sale at that auction and each consigning entity agrees to accept the auction settlement price for allowances sold at auction. Until 2015, only IOUs and publicly-owned utilities (“POU”) can consign allowances to the auction, and beginning in 2015, natural gas suppliers can also consign allowances into the auction.

2. Greenhouse Gas Compliance Instruments and California Air Resources Board Auctions

Procurement of compliance instruments may take place through any or all of the following: (1) CARB-sanctioned allowance auctions; (2) APCR; and (3) allowance or Offset procurement via the market.



The first CARB allowance auction took place on November 14, 2012, and allowance auctions will be held quarterly thereafter. To participate in an auction, PG&E must register for the auction prior to the auction date. The auction format consists of single-round bidding, with sealed bids consisting of price and quantity, and bid units of 1,000 mtCO₂e. Bidders may submit multiple bids. Each auction will clear at the auction settlement price as follows: beginning with the highest bid price, bids will be considered in declining order by price and bidders at that price will be awarded allowances until: (a) the next lower bid price is less than the auction floor price, in which case the current price is the settlement price; or (b) the total quantity of allowances bid at the next lower bid price is greater than or equal to the number of allowances available to be awarded, in which case the next lower bid price is the settlement price. If the total quantity bid at the settlement price is greater than the number of available allowances, the regulation describes the process by which these allowances would be distributed to each entity bidding at the auction settlement price.⁷

Prior to each auction, PG&E will also be required to provide a bid guarantee, which will consist of a bond, cash, or letter of credit with a value greater than or equal to the maximum value of bids to be submitted.⁸ The Cap-and-Trade regulation also limits each participating entity's holdings of allowances in its trading or compliance accounts, with certain exemptions. This limits the total amount of allowances any participating entity can purchase and hold. In addition, the regulation stipulates that CARB shall

⁷ The process for resolution of tie bids is specified in Section 95911 (e) (5) of the Cap-and-Trade regulation.

⁸ Auction participants must provide a bid guarantee to the financial services administrator at least twelve (12) days prior to the auction.



restrict IOUs and POUs from purchasing more than 40% of the allowances offered at each auction.

Prior to a given auction, CARB will disclose the number of allowances from California and any external GHG ETS to which California has linked that will be offered in that auction. Beginning in 2013, in addition to consigned allowances, in each auction of allowances from the current and previous budget years (“current auction”), CARB offers one-quarter of its own current year allowances designated for auction. Concurrent with the current auction, CARB will conduct an auction for allowances from future budget years (“advance auctions”). In each advance auction it will offer one-quarter of its own allowances allocated for the budget year three years subsequent to the current calendar year.⁹ Current and advance auctions will be conducted separately.

The APCR will be filled with 121.8 million mtCO₂e allowances for 2013-2020. There is no refill mechanism proposed for the APCR, and use of the APCR is restricted to entities registered into the California cap-and-trade system. Allowances purchased from the APCR go into an entity’s compliance account and cannot be withdrawn or traded. To the extent allowances remain in the APCR, they became available for purchase by complying entities on March 8, 2013. Subsequent APCR sales are conducted on the first day six weeks after each quarterly auction. The APCR consists of three tiers with different associated prices; each tier consists of one-third of the 121.8 million mtCO₂e allowances with which the APCR is initially populated. Tier 1 allowances will be sold to

⁹ With the exception of 2012, when all of the allowances allocated for advance auction from the 2015 budget will be designated for sale at the advance auction.



entities with a compliance obligation at \$40/mtCO₂e in 2013,¹⁰ Tier 2 at \$45/mtCO₂e in 2013, and Tier 3 at \$50/mtCO₂e in 2013.

Finally, to the extent that allowances are transacted between parties outside of the auction or APCR, within three days of settlement, the seller and buyer must report each transaction to CARB.¹¹

B. PG&E’s Allowance Consignment Proposal

[REDACTED]

C. PG&E’s Potential Greenhouse Gas Risks

1. Greenhouse Gas Obligations

PG&E is required by CARB’s Cap-and-Trade regulation to surrender compliance instruments for its qualifying utility-owned generation (“UOG”), imports, and gas compressor stations (herein collectively described as “physical” obligations).

¹⁰ The APCR price for each tier will rise by 5% plus the Consumer Price Index (“CPI”) each year.

¹¹ The timeline for transfer of compliance instruments between accounts may change as part of the proposed amendments to the cap-and-trade regulation.

[REDACTED]



Furthermore, PG&E has contractual obligations associated with certain tolling agreements that require it to either: (1) provide the counterparty with compliance instruments for the energy under contract; or (2) reimburse the counterparty for the Cap-and-Trade compliance costs associated with its facility's operation under the contract.

2. Cap-and-Trade Penalties

PG&E could face CARB penalties for failure to surrender an adequate number of compliance instruments for which it has a compliance obligation.

CARB's Cap-and-Trade rule imposes a four-time excess emissions penalty resulting from "untimely surrender" of allowances. This penalty would be assessed by requiring that additional compliance instruments be surrendered, rather than by cash payment. In addition, if an entity fails to surrender the required compliance instruments within five (5) days of the first auction or reserve sale conducted by CARB following the applicable surrender date, whichever is the latter, and for which the registration deadline has not passed when the untimely surrender obligation is assessed, CARB's Cap-and-Trade rule would treat each ton of GHG emissions for which a compliance instrument was not surrendered as a separate violation for each day the violation continues.

AB 32 incorporates longstanding air pollution penalty authority pursuant to Health and Safety Code ("HSC") Section 38580. In relevant part, under HSC § 42300 et seq., CARB may impose civil and criminal penalties on corporations and individuals and may also seek injunctive relief. Civil penalty authority (per day of violation) is up to \$10,000



(strict liability); \$20,000 (negligent emissions violation); \$40,000 (knowing emissions violation); \$35,000 (falsification of document with intent to deceive); and \$75,000 (intentional emissions violation). Additional penalties that are more severe can result from negligent or intentional violations causing unreasonable risk of or actual bodily injury or death. AB 32 specifies that any violation of a CARB climate regulation is considered an emissions violation.

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3. Offset Credits (“Offsets”)

CARB’s Cap-and-Trade regulation allows CARB to invalidate an Offset for errors, regulatory violations, or fraud. In the case where an Offset is used to meet a compliance requirement and is later invalidated, the complying entity must replace the invalidated Offset with a valid compliance instrument within six (6) months of notification by CARB of the Offset’s invalidation or be subject to compliance penalties. PG&E will only purchase Offsets if the purchase contract requires the seller to assume the risk of invalidation and to post appropriate collateral. PG&E will assess the risk of invalidation for each Offset transaction.

D. PG&E’s GHG-Related Product Procurement

This GHG Procurement Plan addresses the GHG-related procurement authority necessary for PG&E to comply with the obligations associated with emissions from sectors covered by Cap-and-Trade beginning in the first compliance period, namely



facilities with GHG emissions greater than or equal to 25,000 mtCO₂e per year and imported electricity. As an entity that is required to comply with Cap-and-Trade, PG&E will need to procure compliance instruments to meet the compliance requirements associated with its own facilities and imports, as well as the GHG contractual obligations associated with Power Purchase Agreements with third parties that require PG&E to procure GHG compliance products or assume GHG compliance costs for such parties. PG&E's Energy Procurement Department will procure GHG compliance instruments for all of PG&E's emissions from sectors that are covered by Cap-and-Trade in the first compliance period, and transfer requested GHG allowances to PG&E's Gas Transmission and Distribution Department¹³ (i.e., for GHG emissions associated with gas compressor stations) at PG&E's weighted-average cost.¹⁴ Below, PG&E describes its GHG obligations and Commission-approved GHG-related products and procurement processes, as well as its GHG procurement strategy. The products, procurement processes, and GHG procurement strategy establish the upfront achievable standards for PG&E's procurement activities consistent with AB 57.

1. Greenhouse Gas Obligations

PG&E's primary need to procure GHG compliance instruments and engage in GHG transactions arises in connection with the following:

¹³ PG&E's Energy Procurement Department will only act as the buying agent for GHG Products requested by the Gas Transmission and Distribution Department for the limited GHG obligations associated with its gas compressor stations. The Gas Transmission and Distribution will request a quantity of compliance products from the Energy Procurement Department.

¹⁴ Weighted-average cost is the weighted-average cost of PG&E's allowances and Offsets in a given compliance year. For a discussion of cost recovery, see Section D.6



- Utility-Owned Facilities: Conventional generation facilities and gas compressor stations owned by PG&E that are either operating or under construction and that emit at least 25,000 mtCO₂e per year, such as the Humboldt Generating Station, Colusa Generating Station, and Gateway Generating Station, will have a compliance obligation under Cap-and-Trade.
- Selected Tolling Agreements: Contracts that allocate to PG&E or where PG&E has assumed GHG compliance instrument procurement responsibility for such counterparties.
- Electricity Imports: PG&E is responsible for GHG emissions deemed to be associated with its electricity imports for purposes of compliance with Cap-and-Trade.

2. Greenhouse Gas-Related Products

The following GHG-related products (“GHG Products”) have been approved by the Commission:

**TABLE APPENDIX L-1
PACIFIC GAS AND ELECTRIC COMPANY
GHG PRODUCTS**

Product	Description
GHG Allowance	A compliance instrument accepted by CARB providing the right to emit one mtCO ₂ e to satisfy obligations under the Cap-and-Trade regulation.
GHG Offset	A compliance instrument representing a verified emission reduction that is accepted by CARB in lieu of a GHG Allowance to satisfy obligations under the Cap-and-Trade regulation.

3. Greenhouse Gas-Related Processes

PG&E will procure GHG Products from the CARB and markets¹⁵ to meet its entity-specific and contractual compliance obligations in accordance with its procurement strategy. PG&E is authorized to procure these GHG Products using the following procurement methods:

¹⁵ CARB sells allowances through CARB auctions and the APCR. The market consists of allowance and Offset products offered for purchase outside of CARB.



**TABLE APPENDIX L-2
PACIFIC GAS AND ELECTRIC COMPANY
GHG PROCUREMENT METHODS AND PRACTICES**

Transaction Process	Description
CARB Auction	Authorization to procure GHG Allowances through any CARB Auction in accordance with the Cap-and-Trade regulation.
Allowance Price Containment Reserve	Authorization to procure GHG Allowances through CARB's Allowance Price Containment Reserve.

In addition to the new GHG Procurement Methods and Practices in Table Appendix L-2, PG&E will use approved procurement methods and practices as described in its Bundled Procurement Plan that govern procurement via competitive Requests for Offer (“RFO”) processes and transparent exchanges¹⁶ to procure GHG Products. When procuring via bilateral transactions (including brokers), PG&E will utilize a competitive RFO process, consult with its Procurement Review Group (“PRG”), apply its approved procurement credit and collateral requirements, and apply the applicable affiliate transaction rules. PG&E can also procure GHG Products on exchanges that have been previously approved by the Commission for power procurement. For exchanges not previously approved, PG&E will submit a Tier 2 advice letter detailing: (1) what exchange it is seeking to use; (2) the liquidity and transparency of the exchange, specific for GHG Products, including an explanation of how the Commission can be assured that the price of the products procured on the exchange is reasonable; and (3) the regulatory authority or authorities the exchange is subject to. Finally, PG&E has authority to resell GHG Products, but will report such sales to its PRG.

¹⁶ The use of exchanges includes the “clearing” of bilateral transactions authorized by the Commission.



4. Greenhouse Gas Procurement Strategy

[Redacted]

[Redacted]

[Redacted]

[Redacted]

■ [Redacted]

i. Maximum Volume Limits

j. Financially Hedging GHG Product Price Risk

Each of these elements is described in more detail below.

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facilities, certain tolling agreements, and electric imports. CARB's regulation also set limits on the number of allowances that can be held, and Offsets that can be used for compliance. In addition, Cap-and-Trade regulation restricts PG&E from purchasing more than 40% of the allowances offered at each auction through 2014 and more than 25% from 2015 onward. These various limits will cap the amount of GHG Products PG&E will procure. PG&E will also transact GHG Products consistent with regulations established regarding the use of such products for compliance with Cap-and-Trade. PG&E may purchase GHG Products in excess of its annual compliance requirements and may "bank" surplus GHG Products to use in future compliance years in accordance with its procurement strategy and the procurement limits set forth below.

Generally in the current year, PG&E may purchase GHG Products to fulfill 100% of its current net remaining compliance obligation and its forecasted compliance obligation for the remainder of the current year. In addition, in the current year PG&E may purchase a portion of its forecasted compliance obligation for the following three compliance years not to exceed a set percentage in total for each year. PG&E will not purchase GHG Products with vintages more than three years from the current year. Finally, PG&E will not purchase more than 8% of its direct compliance obligation, as defined below, in the form of Offsets, provided these purchases also stay within the overall GHG Product procurement limits identified below.

The procurement limit sets the maximum amount of GHG Products PG&E may purchase in the current year to fulfill its "direct compliance obligation," defined as the tons of emissions for which PG&E has an obligation to retire allowances on its own



behalf as a regulated entity under the Cap-and-Trade program, and/or is otherwise obligated to procure GHG Products for a third party that is a regulated entity under the Cap-and-Trade program (i.e., certain contractual arrangements where PG&E is contractually responsible, or could elect to assume that responsibility, for procuring GHG Products for a third party). A “purchase” is defined as taking title of the GHG Product when it is delivered. Thus forward purchases count against the procurement limit in the year delivered, which may not be the current year.

PG&E’s Direct Compliance Obligation Purchase Limit for the current year is calculated as:

$$LCY = A + 100\% * FDCY + 60\% * FDCY + 1 + 40\% * FDCY + 2 + 20\% * FDCY + 3$$

Where:

“L” is the maximum number of GHG Products PG&E can purchase for purposes of meeting its direct compliance obligation.

“CY” is the Current Year, i.e., the year in which PG&E is transacting in the market.

“A” is PG&E’s net remaining compliance obligation to date, calculated as the sum of the actual emissions for which PG&E is responsible for retiring allowances (or obligated to purchase for a third party) up to the Current Year, minus the total allowances or Offsets PG&E has purchased up to the Current Year that could be retired against those obligations. This term in the calculation ensures PG&E is always able to buy sufficient GHG Products to cover any prior years’ shortfalls, given that actual emissions may end up being less than forecast and/or prior decisions about how much procurement to do.

“FD” is PG&E’s “forecasted compliance obligation”, the projected amount of emissions for which PG&E is responsible for retiring GHG Products, or obligated to purchase for a third party, calculated using an



implied market heat rate (“IMHR”) that is two-standard deviations above the expected IMHR²⁶.

If this equation results in a negative number in a given year, PG&E’s Direct Compliance Obligation Purchase Limit for that year should be set at zero.

In addition to its Direct Compliance Obligation Purchase Limit, in the current year PG&E will not purchase GHG Products for future years greater than the percentage allowed in the Direct Compliance Obligation Purchase Limit formula. Therefore, for the prompt year (current year plus one) PG&E will not purchase in aggregate during the current year more than 60% of the prompt year’s forecasted compliance obligation (as calculated above). Similarly, the percentages for current year plus two and current year plus three are 40% and 20%, respectively.

Consistent with Ordering Paragraph 9 of D.12-04-046, Table Appendix L-4 below details estimated forecast of the amount of greenhouse gas compliance instruments (in metric tons carbon dioxide equivalents) that correspond to the maximum procurement levels detailed in Table Appendix L-5.

²⁶ The IMHR two-standard deviations above the expected IMHR is calculated as follows: (1) the monthly historic IMHR is calculated by dividing monthly forward electricity prices by monthly forward gas prices for the period 2003 through 2011, yielding the forward monthly IMHR for this period; (2) monthly standard deviations of the forward monthly IMHR are then calculated separately for January through December; (3) the IMHR two-standard deviations above the expected IMHR is equal to the forward IMHR plus the standard deviation calculated in (2) multiplied by 2.0. The forward electricity prices to be used in calculating forecasted compliance obligations for the Direct Compliance Obligation Purchase Limits are then calculated by multiplying the IMHR at two-standard deviations above the expected IMHR by the forward gas price.



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j. Financially Hedging Greenhouse Gas Compliance Instrument Price Risk

Because the products and markets to financially hedge GHG compliance instrument price risk are not developed at this time, PG&E is not seeking authority financially hedge GHG compliance instrument price risk at this time. PG&E will seek to amend its BPP by advice letter to seek such authority as these markets and products

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develop. PG&E's purchase of financial instruments to hedge GHG Product price risk will be subject to the procurement limit set forth below.

The "financial exposure" purchase limit sets the specific limit on the amount of GHG Products PG&E can purchase to hedge its financial exposure to GHG costs under the Cap-and-Trade program. As with the Direct Compliance Obligation Purchase Limit formula above, this is a purchase limit, meaning the number that emerges from this calculation would set the maximum amount of GHG Products PG&E is allowed to purchase in the current year for purposes of hedging its financial exposure. As above, "purchase" is defined as taking title of the GHG Product when it is delivered. PG&E is not allowed to purchase allowances or Offsets for hedging purposes with vintages more than three years from the current year.

PG&E's Financial Exposure Purchase Limit is calculated as:

$$\text{FLCY} = 20\% * \text{FECY} + 10\% * \text{FECY}+1 + 5\% * \text{FECY}+2 + 2.5\% * \text{FECY}+3 - B$$

Where:

"FL" is the maximum number of GHG Products PG&E can purchase for purposes of hedging its financial exposure to GHG costs.

"CY" is the current year, i.e., the year in which PG&E is transacting in the market.

"FE" is an estimate of PG&E's financial exposure to GHG costs that will, or are anticipated to be, embedded in the price of energy, calculated based on the tons of GHG emissions for which PG&E believes it will bear the costs through an embedded cost of such emissions as reflected in energy prices. This amount does not include the costs PG&E anticipates incurring as a result of its direct compliance obligation as "direct compliance obligation" is defined above. "B" is PG&E's net purchases of GHG Products to date for hedging purposes, calculated as the total purchases of GHG Products for purposes of



hedging PG&E's financial exposure up to the current year minus those GHG Products sold up to the current year. This term helps ensure that if PG&E hedged considerably in prior years and those hedges did not pay out (i.e. the price PG&E saw in the market for GHG Products stayed below what PG&E paid for a GHG Product and so PG&E did not sell the instrument), that gets factored into the amount of additional hedging PG&E is allowed to undertake.

Should this equation result in a negative number in a given year, PG&E's Financial Exposure Purchase Limit for that year will be set at zero.

5. Procurement Review Group Consultation

PG&E will annually review with its PRG its proposed CARB auction bidding strategy, including discussion of the total volume of GHG Products that PG&E might acquire and its GHG position. PG&E will also consult with its PRG on RFOs for GHG Products, and prior to transacting for any GHG Product in the market with a vintage year²⁸ more than three years in the future beyond the current calendar year. PG&E will report any GHG Product sales to the PRG. Finally, PG&E will report any forecast updates, corresponding revisions to the purchase limits and GHG Product transactions to the PRG at its quarterly position update.

6. Quarterly Compliance Reports and Cost Recovery

Forecast updates and corresponding revision to the purchase limits along with all GHG Product transactions will be reported in PG&E's Quarterly Procurement Compliance Report ("QCR"). In addition, the QCR will provide a summary of current market conditions and all GHG Product transactions conducted by PG&E. PG&E records

²⁸ A "vintage year" is an attribute of each allowance that refers to the compliance year that CARB associates with the allowance at issuance. The vintage year designation restricts the allowance's eligibility for use to certain compliance periods. In the case of Offsets, the vintage year refers to the year in which the Offset is created.



costs for GHG Products²⁹ associated with the electric sector obligation and natural gas compressor station obligation in its respective Energy Resource Recovery Account (“ERRA”) and Gas Operational Cost Balancing Account (“GOCBA”) for recovery in rates.

PG&E’s request for cost recovery of GHG Products through ERRA and GOCBA implicitly assumes the purchase of these products can be financed with short-term debt. However, PG&E’s short-term borrowing capacity is limited, and much of that capacity is needed to meet day-to-day operational needs, other balancing account under-collections and collateral to support energy procurement. Thus, depending on the cost and tenor of these products, PG&E may need to resort to financing with long-term debt and/or equity. In that event, PG&E may seek alternative cost recovery mechanisms in order to recover its actual cost of financing of these products.

7. Approval for Contract Term Duration

For transactions of GHG Products with vintage years four years or fewer into the future, PG&E will include these transactions in its QCR and the annual ERRA Compliance proceeding. For transactions of GHG Products with vintage years more than four years into the future, PG&E will submit the transactions for review through the Commission’s advice letter process. PG&E will not enter into a contract whose delivery term extends beyond 2020.

²⁹ Including costs related to Offset development, if authorized, in accordance with the procurement strategy.



8. Independent Evaluator

For contracts with delivery terms that are greater than two years, PG&E will include an Independent Evaluator (“IE”) in any competitive solicitation and an IE Report in its respective QCR or advice letter filings.

9. Updates Via Advice Letter

The procurement strategy for which approval is requested above is based on the final CARB Cap-and-Trade and Mandatory Reporting Rule regulations. Certain changes to CARB’s regulations may affect implementation of this plan for GHG-related procurement. Should market conditions, CARB’s regulations, or the electric portfolio change to the point of necessitating modifications to the plan, PG&E will submit an advice letter to the Commission requesting changes.

PG&E will update its GHG compliance forecasts and corresponding purchase limits as necessary via a Tier 2 advice letter. The advice letter will include a description and workpapers detailing the calculation of the estimated purchase limits and an explanation of the key drivers of differences from the prior estimates.



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Public Appendix F
Confidentiality Declaration and Matrix

**DECLARATION OF ELIZABETH INGRAM
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION CONTAINED IN
UPDATED 2015 GREENHOUSE GAS (“GHG”) PURCHASE LIMIT
ADVICE LETTER 4507-E
(PACIFIC GAS AND ELECTRIC COMPANY - U 39 E)**

I, Elizabeth Ingram, declare:

1. I am a manager in the Portfolio Management Department within the Energy Procurement organization at Pacific Gas and Electric Company (“PG&E”). I am responsible for overseeing Commercial Policy and Compliance activities at PG&E. In carrying out these responsibilities, I have acquired knowledge of PG&E’s GHG compliance instrument procurement practices and have also gained knowledge of the operations of electric sellers in general. Through this experience, I have become familiar with the type of information that would affect the negotiating position of electric sellers with respect to price and other terms, as well as with the type of information that such sellers consider confidential and proprietary. I can also identify information that buyers and sellers of capacity would consider to be “market sensitive information” as defined by California Public Utilities Commission (“CPUC”) Decision (“D.”) 06-06-066 and D.09-12-020, that is, information that has the potential to materially impact a procuring party’s market price for capacity if released to market participants.

2. I was responsible for overseeing the update to PG&E’s 2015 GHG purchase limit. Based on my knowledge and experience, I make this declaration seeking confidential treatment of Appendices A, B, and C to PG&E’s Advice Letter seeking approval of PG&E’s updated 2015 GHG purchase limit (“Confidential Information”).

3. The Appendices are as follows:

Confidential Appendix A: GHG Limit Workpapers

Confidential Appendix B: GHG Procurement Plan (Redlined)

Confidential Appendix C: GHG Procurement Plan (Clean)

4. Attached to this declaration is a matrix that describes the Confidential Information for which PG&E seeks continued protection against public disclosure, states whether PG&E seeks to protect the confidentiality of the Confidential Information pursuant to D.06-06-066 and/or other authority; and where PG&E seeks protection under D.06-06-066, the category of market sensitive information in D.06-06-066 Appendix 1 Matrix (“Matrix”) to which the Confidential Information corresponds. The matrix specifies that the material PG&E is seeking to protect constitutes data and information covered by General Order (GO) 66-C, Section 2.2b, which would place PG&E in an unfair business advantage if disclosed; and Public Utilities Code Section 454.5(g), which would reveal market sensitive information.

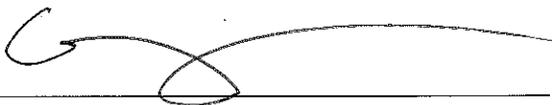
5. The attached matrix demonstrates that the Confidential Information: (1) constitutes a particular type of confidentiality-protected data listed in the Matrix; (2) corresponds to a category or categories of market sensitive information listed in the Matrix; (3) may be treated as confidential consistent with the limitations on confidentiality specified in the Matrix for that type of data; (4) is not already public; and (5) cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. In the column labeled, “PG&E’s Justification for Confidential Treatment”, PG&E explains why the Confidential Information is not subject to public disclosure under either or both D.06-06-066 and General Order 66-C. The confidentiality protection period is stated in the column labeled, “Length of Time.”

6. 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 October 1, 2014, at San Francisco, California.

A handwritten signature in black ink, consisting of a large, stylized loop on the left and a long, sweeping horizontal stroke extending to the right. The signature is positioned above a solid horizontal line.

ELIZABETH INGRAM

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
 UPDATED 2015 GREENHOUSE GAS ("GHG") PURCHASE LIMIT ADVICE LETTER 4507-E**

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	1) Constitutes data listed in Appendix 1 to D-06-06-066 (Y/N)	2) Data correspond to category in Appendix 1:	3) Complies with limitations of D-06-06-066 (Y/N)	4) Data not already public (Y/N)	5) Lead to partial disclosure (Y/N)	PG&E's Justification for Confidential Treatment	Length of Time
Document: Confidential Appendix A – GHG Limit Workpapers							
Appendix A	N	General Order 66-C, Section 2.2b; Public Utilities Code Section 454.5(g)	N/A	Y	Y	This appendix contains workpapers supporting PG&E's updated 2015 GHG purchase limit. The release of this commercially sensitive information could cause harm to PG&E's customers and put PG&E at an unfair business disadvantage. If this information was disclosed, it could be used by market participants to gain an insight into PG&E's procurement needs and thus gain a commercial advantage.	Indefinite under GO 66-C and PUC Section 454.5(g)
Document: Confidential Appendix B – GHG Procurement Plan (Redlined)							
Appendix B	N	General Order 66-C, Section 2.2b; Public Utilities Code Section 454.5(g)	N/A	Y	Y	This appendix contains a redlined version of PG&E's updated GHG procurement plan. The release of this commercially sensitive information could cause harm to PG&E's customers and put PG&E at an unfair business disadvantage. If this information was disclosed, it could be used by market participants to gain an insight into PG&E's procurement needs and thus gain a commercial advantage.	Indefinite under GO 66-C and PUC Section 454.5(g)
Document: Confidential Appendix C – GHG Procurement Plan (Clean)							
Appendix C	N	General Order 66-C, Section 2.2b; Public Utilities Code Section 454.5(g)	N/A	Y	Y	This appendix contains a clean version of PG&E's updated GHG procurement plan. The release of this commercially sensitive information could cause harm to PG&E's customers and put PG&E at an unfair business disadvantage. If this information was disclosed, it could be used by market participants to gain an insight into PG&E's procurement needs and thus gain a commercial advantage.	Indefinite under GO 66-C and PUC Section 454.5(g)

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

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