

ATTACHMENT A



*Pacific Gas and
Electric Company™*

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December 6, 2007

Eugene Cadenasso
Energy Division
California Public Utilities Commission
505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102

Re: Staff Request for Information Concerning Greenhouse Gas (GHG) Emissions
Associated with the Natural Gas Sector – R.06-04-009

Dear Mr. Cadenasso:

Attached please find the public version of Pacific Gas and Electric Company's (PG&E) Revised Response to the California Public Utilities Commission's (CPUC) Natural Gas Sector Data Request. The confidential information in the attached files has been redacted as per Section 583 of the Public Utilities Code.

Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kate Beardsley', with a long, sweeping horizontal line extending to the right.

Kate Beardsley
Enclosure

PUBLIC VERSION

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

CPUC NATURAL GAS SECTOR DATA REQUEST

Part I. General reporting requirements.

1) Provide name, title, entity name, phone number and e-mail address of person(s) that staff may contact if necessary regarding your response to this data request.

Kate Beardsley, Manager—Regulatory Relations
Pacific Gas and Electric Company
415/973-0163
kebd@pge.com

Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006.

1) Provide number of customers, volumes of natural gas delivered, and associated GHG emissions for the following categories of end users that are served directly by your entity (exclude natural gas used for the generation of electricity).

a) Residential end users.

PG&E Response: Please see the Excel Spreadsheet entitled “Part IIIa_revised.xls”

b) Non-residential end users (do not include data for the generation of electricity).

i) Tier 1 non-residential end users (< 2 million therms):

Tier 1 consists of non-residential end users with annual deliveries of less than 2 million therms per year during the reported years. Natural gas deliveries and GHG emissions data for Tier 1 end users are to be reported on an aggregated basis, including total number of customers, total natural gas deliveries and total GHG emissions.

PG&E Response: Please see the Excel Spreadsheet entitled “Part IIIb under 2mm therms_revised.xls”, worksheet entitled “Summary”

Include statistics showing the range of values, median, and mean.

PG&E Response: Please see the Excel Spreadsheet entitled, “Part IIIb under 2mm therms_revised.xls”, worksheet entitled “Range Median Mean”

Provide a histogram showing the number of customers at each increment of 20,000 therms delivered per year.

PG&E Response: Please see the Excel Spreadsheet entitled, Part “IIIb under 2mm therms_revised.xls”, worksheet entitled “Histogram”

(Please note: Due to the use of two different methodologies for obtaining data, the Customer counts on the Histogram do not match the Customer counts on the

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Summary report. If a physical service site was occupied by one or more Customers during the year but together were only on service for 9 months, the histogram will count them as one Customer, whereas the Summary report will count them as .75 Customers. Therefore, the Histogram shows a slightly higher Customer count.)

Identify the volumes of natural gas delivered, number of end users and GHG emissions associated with the use of natural gas for transportation by vehicle (e.g., natural gas vehicle use).

PG&E Response: Please see the Excel Spreadsheet entitled “Part Iib under 2mm therms_revised.xls”, worksheet entitled “Summary”

ii) Tier 2 non-residential end users (2 million to < 3 million therms):

Tier 2 is composed of non-residential end users with annual deliveries of more than 2 million therms and less than 3 million therms per year during the reported years.

Natural gas delivery and GHG emissions data for Tier 2 non-residential end users is to be reported for each end user by using the North American Industry Classification System (NAICS) nomenclature to the greatest level of specificity.

If the NAICS designation for an end user is unknown, report the name of the customer.

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib OVER 2mm therms PUBLIC_revised.xls”, worksheets entitled “Summary”, “OAR 04”, “OAR 05” and “OAR 06”

Identify the volumes of natural gas delivered, number of end users and GHG emissions associated with the use of natural gas for transportation by vehicle (e.g., natural gas vehicle use).

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib NGV Greater than 2 Million Therms_public.xls”.

iii) Tier 3 non-residential end users (3 million to < 4.5million therms):

Tier 3 is composed of non-residential end users with annual deliveries of more than 3 million therms and less than 4.5 million therms per year during the reported years.

Natural gas delivery and GHG emissions data for Tier 3 non-residential end users is to be reported for each end user by using the NAICS nomenclature to the greatest level of specificity.

If the NAICS designation for an end user is unknown, report the name of the customer.

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib OVER 2mm therms PUBLIC_revised.xls”, worksheets entitled “Summary”, “OAR 04”, “OAR 05” and “OAR 06”

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Identify the volumes of natural gas delivered, number of end users and GHG emissions associated with the use of natural gas for transportation by vehicle (e.g., natural gas vehicle use).

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib NGV Greater than 2 Million Therms_public.xls”.

iv) Tier 4 non-residential end users (4.5 million or more therms):

Tier 4 is composed of non-residential end users with annual deliveries of more than 4.5 million therms per year during the reported years. Natural gas delivery and GHG emissions data for Tier 4 non-residential end users is to be reported for each end user by using the NAICS nomenclature to the greatest level of specificity.

If the NAICS designation for the end user is unknown, report the name of the customer.

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib OVER 2mm therms PUBLIC_revised.xls”, worksheets entitled “Summary”, “OAR 04”, “OAR 05”and “OAR 06”

Identify the volumes of natural gas delivered, number of end users and GHG emissions associated with the use of natural gas for transportation by vehicle (e.g., natural gas vehicle use).

PG&E Response: Please see the Excel Spreadsheet entitled, “Part Iib NGV Greater than 2 Million Therms PUBLIC.xls”.

Part III. Natural gas use and GHG emissions of co-generation and combined heat and power end users. (Natural gas volumes and associated GHG emissions from these end users that is not used for the generation of electricity should also be included in the response to Part II).

Report natural gas deliveries and associated GHG emissions of co-generation and combined heat and power end users for years 2004, 2005 and 2006.

PG&E Response: Please see the Excel Spreadsheet entitled “Part III Cogen Under 2 Million Therms_revised.xls”, and see the Excel Spreadsheet entitled “Part III Cogen over 2 million therms PUBLIC_revised.xls”

Identify the proportion of natural gas used for the generation of electricity. Explain the methodology used to determine the amount of natural gas used for electricity generation.

PG&E Response: PG&E tracks natural gas consumption in compliance with the applicable tariff and thus does not know what portion of that natural gas can be attributed to useful thermal instead of Electricity Generation. The cogeneration gas usage volumes that we are providing are the volumes that are billed at the cogeneration rate. There are two methods used for determining the amount of gas used in a cogeneration system, as specified in CPUC approved tariff Schedule G-EG. Below is the tariff language:

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

“Gas usage supplying the electric generator is separately metered, or,

2. For customers having both generation and non-generation end use on a single meter, the amount of gas to be billed at the electric generation rate will be the lesser of: Total metered throughput; or an amount of gas equal to the customer's recorded net-electric generation in kilowatt-hours (kWh) times the average heat rate for the electric generation equipment as supported by documentation from the manufacturer. If not available, operating data shall be used to determine customer's average heat rate. Net-electric generation is the output of the generator, less the energy used to operate the auxiliary equipment at the cogeneration facility. Auxiliary equipment includes, but is not limited to, forced and induced draft fans, boiler feed pumps, and lubricating oil systems.”

For deliveries to end users below 2 million therms per year, identify number of end users and provide a histogram showing the number of end users at 20,000 therms increments.

PG&E Response: Please see the Excel Spreadsheet entitled “Part III Cogen Under 2 Million Therms_revised.xls”.

Natural gas deliveries and GHG emissions data for end users using 2 million or more therms is to be reported for each end user by using the NAICS nomenclature to the greatest level of specificity. If the NAICS designation for the end user is unknown, report the name of the customer.

PG&E Response: Please see the Excel Spreadsheet entitled “Part III Cogen over 2 Million therms PUBLIC_revised.xls”

Please note: The NAICS coding provided is the coding that is currently contained in PG&E's billing system.

Part IV. Natural gas deliveries to wholesale customers of investor owned utilities.

Report volumes of natural gas deliveries to wholesale customers for each year 2004, 2005 and 2006. Wholesale customers are those entities that provide service to end users with natural gas received through connections with other California utilities. Wholesale customers may include investor or publicly owned utilities.

Identify the wholesale customer and provide the volume of natural gas deliveries and associated GHG emissions assuming all the delivered natural gas is combusted.

PG&E Response: Please see the Excel Spreadsheet entitled, “Part IV Wholesale Customer Usage PUBLIC_revised.xls”, worksheet entitled “Summary”

Part V. Feedstock uses of natural gas (Natural gas volumes and associated GHG emissions from these end users should also be included the response to Part II).

Identify end users by name that use natural gas as a feedstock and to report the following information. For each of 2004, 2005, 2006 identify or estimate the proportion of natural gas used as a feedstock and the proportion combusted and associated GHG emissions and the

Pacific Gas and Electric Company

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total natural gas delivered. Include the total GHG emissions for each end user that use natural gas as a feedstock. Cite source or provide documentation in support of this response.
PG&E Response: PG&E is unaware of any such customers in our service territory; however, we do not have any methods by which to identify such customers.

Part VI. Natural gas use and GHG emissions associated with natural gas infrastructure within California for each year 2004, 2005 and 2006.

For the reported data under this part, identify whether reported data are based on actual observation or are estimated.

PG&E Response: Please see the Excel Spreadsheet entitled, "Part VI_revised.xls", worksheet entitled "DataRequest"

If estimated, describe estimation technique(s) and explain reason for use. Also, identify if estimation technique(s) are approved or recommended for use by any regulatory body, research organization, trade group or other organization.

PG&E Response: Please see the Excel Spreadsheet entitled, "Part VI_revised.xls", worksheet entitled "Data Sources By Ref#"

Identify values that were reported to a GHG emissions registry, include the name of the registry.

PG&E Response: Please see answer to Part VI, "Submit all reports that have been filed with the California Climate Action Registry or other GHG emissions registry," below.

Report and identify natural gas volumes combusted by fuel compressors, other equipment, fleet vehicles or flared for operational purposes and the associated GHG emissions.

Describe the types of equipment that produced the GHG emissions

PG&E Response: Please see the Excel Spreadsheet entitled, "Part VI_revised.xls", worksheet entitled "Gas Usage Ref16"

Report natural gas volumes that are either unintentionally released (fugitive) or vented from system operations and the associated GHG emissions. Identify the quantity of methane and other types of gases that were emitted.

PG&E Response: Please see the Excel Spreadsheet entitled, "Part VI_revised.xls", worksheet entitled "DataRequest"

Include a description of natural gas quality specifications that must be met to transport natural gas on your system.

PG&E Response: Please see the Excel Spreadsheet entitled, "Part VI_revised.xls", worksheet entitled "Composition"

Submit applicable effective tariff sheets.

**PG&E Response: Please see the tariff sheet located at:
<http://www.pge.com/tariffs/pdf/GR21.pdf>**

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Submit all reports that have been filed with the California Climate Action Registry or other GHG emissions registry.

PG&E includes its 2005 CCAR submission which is the latest certified filing. This includes the general registry report (the PDF file) and a more detailed supplemental schedule (Excel file).

Part VII. Natural gas demand conditions for 2004, 2005 and 2006

Provide a description regarding the extent that natural gas usage for each year 2004, 2005 and 2006 deviated from normal conditions. Characterize each year if it was considered cold, warm or of average temperature and explain how this was determined. Include an analysis showing number of heating degree days for each year and provide the values for a normal year. A normal year should be computed using a 20 year average of heating degree days.

PG&E Response: Because 2004 and 2005 were somewhat warmer than normal years, core natural gas demand was lower than it otherwise would have been. Temperature conditions were close to normal in 2006 and therefore did not cause core gas usage to deviate much from what it otherwise would have been. Noncore gas demand is largely insensitive to temperature conditions.

Below is a table showing recorded core gas demand and temperature-normalized core gas demand for each of the three years. The difference between the recorded and temperature-adjusted data can be considered to be the impact that weather had on core gas usage.

	Recorded Core Demand	Temp-Adj. Core Demand
	MDth	MDth
2004	280,388	283,802
2005	274,983	282,195
2006	277,022	276,408

Regulatory Relations uses heating degree days (HDDs) as the unit of measurement to characterize how warm or cold temperatures have been for a given period for a given location. (PG&E's Gas System Operations Department uses degrees F., not degree days.) A heating degree day is calculated by first estimating the average temperature for a given day for a given location and then subtracting that average temperature from a reference temperature of 60 degrees. The difference is the number of heating degree days for that day. If the resultant difference is less than zero (i.e. the average temperature is above 60 degrees), it is treated as zero.

PG&E's Meteorology Department developed a model for Regulatory Relations that estimates system-wide HDDs based on daily recorded temperature data from 11 stations. Each station is mapped to a surrounding geography that shares generally the same weather conditions as

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

those of the station site. System-wide composite HDDs are calculated using weights developed from the core gas volumes associated with each of the 11 geographies. The model permits one to specify the number of years of data that, when averaged, constitute “normal” temperatures. A given year’s HDDs can be compared to the number of HDDs in a normal year to determine whether that year is warmer or cooler than normal.

Below is a table comparing 2004, 2005, and 2006 HDDs to 20 year normal HDDs ending in 2006. Note that these years are based on billing, not calendar, months. Billing months are based on PG&E’s serial billing cycles, which dictate how PG&E’s core gas customers are billed. Calendar month years produce somewhat different results.

	Recorded HDDs	Normal HDDs	Diff
2004	1530.9	1579.1	48.2
2005	1515.4	1579.1	63.7
2006	1576.3	1579.1	2.8

END

**CPUC
GHG- Natural Gas Sector Data Request**

PART II –a

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Volume in MDth	2004	2005	2006
Residential Bundled Therms	202,888	195,677	202,386
Residential Transport Therms	462	398	628
Total Residential Therms	203,351	196,075	203,013
Residential Bundled Customers	3,867,137	3,933,384	3,990,907
Residential Transport Customers	7,201	6,474	6,706
Total Residential Customers*	3,874,338	3,939,857	3,997,613

Emissions in Metric Tons of CO2e	2004	2005	2006
Residential Bundled Emissions	10,736,836	10,355,225	10,710,227
Residential Transport Emissions	24,457	21,057	33,222
Total Residential Emissions	10,761,293	10,376,282	10,743,449

Emissions in Metric Tons of CO2	2004	2005	2006
Residential Bundled Emissions	10,726,712	10,345,460	10,700,128
Residential Transport Emissions	24,434	21,037	33,191
Total Residential Emissions	10,751,146	10,366,498	10,733,319

Emissions in Metric Tons of N2O	2004	2005	2006
Residential Bundled Emissions	6,290	6,066	6,274
Residential Transport Emissions	14	12	19
Total Residential Emissions	6,304	6,078	6,293

Emissions in Metric Tons of CH4	2004	2005	2006
Residential Bundled Emissions	3,835	3,698	3,825
Residential Transport Emissions	9	8	12
Total Residential Emissions	3,843	3,706	3,837

* Residential Schedules used include: G-1, G1-NGV, GM, GS, GT, GL-1, GML, GSL, GTL

No Residential Customer Used over 2 million therms annually

**CPUC
GHG- Natural Gas Sector Data Request**

PART II-b, < 2 MM Therms

Pacific Gas and Electric Company

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Volumes in MDth and Emmissions in MeTon

Tier 1			
Commercial			
	2004	2005	2006
Commercial Bundled Therms (MDth)	78,644	76,508	73,652
Commercial Transport Therms (MDth)	41,370	41,361	47,503
Total Commercial Therms (MDth)	120,014	117,869	121,155
Commercial Bundled Customers	209,976	211,550	208,498
Commercial Transport Customers	5,472	6,085	12,511
Total Commercial Customers	215,447	217,635	221,010
Commercial Bundled Emissions (CO ₂ e)	4,161,832	4,048,818	3,897,659
Commercial Transport Emissions (CO ₂ e)	2,189,302	2,188,799	2,513,871
Total Commercial Emissions (CO₂e)	6,351,134	6,237,617	6,411,530
Commercial Bundled Emissions (CO ₂)	4,157,908	4,045,000	3,893,984
Commercial Transport Emissions (CO ₂)	2,187,238	2,186,735	2,511,500
Total Commercial Emissions (CO₂)	6,345,146	6,231,735	6,405,485
Commercial Bundled Emissions (N ₂ O)	2,438	2,372	2,283
Commercial Transport Emissions (N ₂ O)	1,282	1,282	1,473
Total Commercial Emissions (N₂O)	3,720	3,654	3,756
Commercial Bundled Emissions (CH ₄)	1,486	1,446	1,392
Commercial Transport Emissions (CH ₄)	782	782	898
Total Commercial Emissions (CH₄)	2,268	2,228	2,290

NGV			
	2004	2005	2006
(Non PG&E) NGV Bundled Therms (MDth)	1,269	1,378	1,256
(Non PG&E) NGV Transport Therms (MDth)	96	102	107
PG&E NGV Interdepartmental Therms (MDth)	52	61	64
Total NGV Therms (MDth)	1,417	1,540	1,428
(Non PG&E) NGV Bundled Customers	960	960	960
(Non PG&E) NGV Transport Customers	10	10	10
PG&E NGV Interdepartmental Customers	28	28	29
Total NGV Customers	998	998	999
(Non PG&E) NGV Bundled Emissions (CO ₂)	67,017	72,749	66,342
(Non PG&E) NGV Transport Emissions (CO ₂)	5,076	5,364	5,676
PG&E NGV Interdepartmental Emissions (CO ₂)	2,744	3,218	3,389
Total NGV Emissions (CO₂)	74,838	81,331	75,407
Rate Schedules used for this data include: G-NR1, G-NR2, G-NT, G-NGV4, G-NGV1, G-NGV2			

Pacific Gas and Electric Company

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Year	Minimum	Maximum	Median	Mean
2004	0.00	197.48	0.53	0.05
2005	0.00	199.30	0.52	0.04
2006	0.00	194.49	0.53	0.05

Pacific Gas and Electric Company

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Therms		Number of Customers		
From	To	2004	2005	2006
0	0	10391	11343	12381
1	20,000	205915	207378	209005
20,001	40,000	4661	4724	4879
40,001	60,000	1381	1351	1418
60,001	80,000	625	631	628
80,001	100,000	361	348	363
100,001	120,000	238	251	261
120,001	140,000	148	175	186
140,001	160,000	140	126	132
160,001	180,000	99	95	83
180,001	200,000	88	79	79
200,001	220,000	61	72	63
220,001	240,000	57	69	61
240,001	260,000	67	39	50
260,001	280,000	31	41	44
280,001	300,000	47	45	36
300,001	320,000	29	42	40
320,001	340,000	27	30	34
340,001	360,000	24	32	32
360,001	380,000	23	11	26
380,001	400,000	27	27	19
400,001	420,000	23	26	22
420,001	440,000	18	15	16
440,001	460,000	21	24	26
460,001	480,000	19	13	19
480,001	500,000	17	15	18
500,001	520,000	27	20	27
520,001	540,000	16	20	18
540,001	560,000	12	12	10
560,001	580,000	13	16	18
580,001	600,000	20	11	13
600,001	620,000	14	13	12
620,001	640,000	10	11	9
640,001	660,000	11	14	14
660,001	680,000	8	8	11
680,001	700,000	16	12	17
700,001	720,000	15	12	13
720,001	740,000	9	14	6
740,001	760,000	10	14	8
760,001	780,000	9	11	12
780,001	800,000	9	6	4
800,001	820,000	5	5	10
820,001	840,000	3	11	6
840,001	860,000	12	7	5
860,001	880,000	5	2	6
880,001	900,000	4	3	9
900,001	920,000	3	5	1

Pacific Gas and Electric Company

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Therms		Number of Customers		
From	To	2004	2005	2006
920,001	940,000	6	5	4
940,001	960,000	7	5	2
960,001	980,000	3	4	1
980,001	1,000,000	4	3	7
1,000,001	1,020,000	7	8	6
1,020,001	1,040,000	0	1	3
1,040,001	1,060,000	4	1	4
1,060,001	1,080,000	4	2	4
1,080,001	1,100,000	4	5	5
1,100,001	1,120,000	6	4	4
1,120,001	1,140,000	2	4	4
1,140,001	1,160,000	2	2	3
1,160,001	1,180,000	3	5	0
1,180,001	1,200,000	7	3	6
1,200,001	1,220,000	3	3	3
1,220,001	1,240,000	0	2	2
1,240,001	1,260,000	2	1	1
1,260,001	1,280,000	0	3	1
1,280,001	1,300,000	2	3	2
1,300,001	1,320,000	3	2	1
1,320,001	1,340,000	1	0	2
1,340,001	1,360,000	3	2	2
1,360,001	1,380,000	2	3	1
1,380,001	1,400,000	1	1	2
1,400,001	1,420,000	1	0	2
1,420,001	1,440,000	1	3	1
1,440,001	1,460,000	1	0	3
1,460,001	1,480,000	4	0	2
1,480,001	1,500,000	1	2	0
1,500,001	1,520,000	0	1	2
1,520,001	1,540,000	0	0	1
1,540,001	1,560,000	1	0	1
1,560,001	1,580,000	2	1	2
1,580,001	1,600,000	6	0	2
1,600,001	1,620,000	1	1	0
1,620,001	1,640,000	0	2	3
1,640,001	1,660,000	1	2	0
1,660,001	1,680,000	2	2	0
1,680,001	1,700,000	1	2	2
1,700,001	1,720,000	0	0	0
1,720,001	1,740,000	1	0	0
1,740,001	1,760,000	0	1	3
1,760,001	1,780,000	1	5	1
1,780,001	1,800,000	2	1	3
1,800,001	1,820,000	2	0	0
1,820,001	1,840,000	1	2	0
1,840,001	1,860,000	0	1	1

Pacific Gas and Electric Company

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Therms		Number of Customers		
From	To	2004	2005	2006
1,860,001	1,880,000	1	1	0
1,880,001	1,900,000	0	2	1
1,900,001	1,920,000	0	0	1
1,920,001	1,940,000	0	0	1
1,940,001	1,960,000	2	1	1
1,960,001	1,980,000	3	0	0
1,980,001	2,000,000	0	2	0
		224,880	227,333	230,253

Note: Due to the two different methodologies of obtaining data, the customer counts do not match the summary report. If a premise was occupied by one or more customers during the year but together were only on service for 9 months, the histogram will count them as one customer where the Summary report will count them as .75 Customers.

**CPUC
GHG- Natural Gas Sector Data Request**

PART II-b, > 2 MM Therms

Pacific Gas and Electric Company

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Volumes in MDth and Emissions in MeTon

Category	2004	2005	2006
Tier 2 - Between 2 - 3 Million Therms			
Non-Generation Customers	33	36	37
Total Therms for Non-Generation Customers	7,999	8,953	8,938
Total CO2e Emissions for Non-Generation Customers	423,324	473,782	472,998
Total CO2 Emissions for Non-Generation Customers	422,925	473,335	472,552
Total N2O Emissions for Non-Generation Customers	248	278	277
Total CH4 Emissions for Non-Generation Customers	151	169	169

Tier 3 - Between 3 - 4.5 Million Therms			
Non-Generation Customers	21	19	17
Total Therms for Non-Generation Customers	7,292	6,616	6,265
Total CO2e Emissions for Non-Generation Customers	385,918	350,125	331,521
Total CO2 Emissions for Non-Generation Customers	385,554	349,795	331,208
Total N2O Emissions for Non-Generation Customers	226	205	194
Total CH4 Emissions for Non-Generation Customers	138	125	118

Tier 4 - Greater than 4.5 Million Therms			
Non-Generation Customers	62	59	61
Total Therms for Non-Generation Customers	103,316	107,968	114,165
Total CO2e Emissions for Non-Generation Customers	5,467,456	5,713,651	6,041,574
Total CO2 Emissions for Non-Generation Customers	5,462,300	5,708,263	6,035,877
Total N2O Emissions for Non-Generation Customers	3,203	3,347	3,539
Total CH4 Emissions for Non-Generation Customers	1,953	2,041	2,158

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
83				
24				
	61,249	3,241,288		Aggregate of 10 customers grouped by volume
161				
16				
108				
28				
42				
39				
157				
15				
141				
52				
	12,220	646,692		Aggregate of 10 customers grouped by volume
63				
101				
75				
156				
69				
95				
6				
86				
78				
73				
	9,700	513,297		Aggregate of 10 customers grouped by volume
142				
10				
26				
61				
37				
36				
133				
32				
126				
96				
	7,366	389,830		Aggregate of 10 customers grouped by volume
62				
118				
119				
59				
125				
140				
89				
144				
31				
100				
	6,491	343,501		Aggregate of 10 customers grouped by volume
57				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
9				
94				
58				
131				
104				
3				
7				
77				
116				
	5,302	280,572		Aggregate of 10 customers grouped by volume
27				
152				
92				
34				
124				
30				
151				
117				
66				
5				
	4,091	216,512		Aggregate of 10 customers grouped by volume
14				
102				
22				
158				
153				
19				
17				
76				
148				
155				
	3,282	173,690		Aggregate of 10 customers grouped by volume
134				
129				
67				
143				
65				
51				
90				
47				
1				
2				
	2,877	152,275		Aggregate of 10 customers grouped by volume
91				
53				
150				
145				
81				
162				
46				
60				
79				
154				
	2,545	134,699		Aggregate of 10 customers grouped by volume
163				
68				

Pacific Gas and Electric Company
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Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
21				
128				
44				
33				
50				
147				
4				
64				
	2,233	118,163		Aggregate of 10 customers grouped by volume
29				
45				
48				
49				
11				
43				
	1,251	66,180		Aggregate of last 6 customers by volume

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
83				
24				
	69,664	3,686,595		Aggregate of 10 customers grouped by volume
16				
108				
39				
63				
28				
157				
42				
15				
52				
141				
	11,961	632,975		Aggregate of 10 customers grouped by volume
69				
144				
75				
156				
6				
101				
86				
10				
78				
140				
	9,053	479,078		Aggregate of 10 customers grouped by volume
61				
59				
36				
32				
96				
118				
133				
95				
126				
89				
	7,067	373,988		Aggregate of 10 customers grouped by volume
145				
125				
9				
62				
57				
77				
73				
94				
37				
31				
	5,818	307,914		Aggregate of 10 customers grouped by volume
152				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
131				
27				
142				
104				
120				
3				
116				
92				
100				
	4,848	256,557		Aggregate of 10 customers grouped by volume
34				
124				
30				
66				
5				
143				
151				
14				
153				
58				
	3,690	195,299		Aggregate of 10 customers grouped by volume
17				
19				
148				
155				
67				
134				
26				
2				
102				
22				
	3,066	162,260		Aggregate of 10 customers grouped by volume
7				
76				
65				
91				
158				
51				
47				
43				
117				
60				
	2,741	145,062		Aggregate of 10 customers grouped by volume
79				
150				
149				
44				
163				
164				
162				
90				
1				
53				
	2,549	134,890		Aggregate of 10 customers grouped by volume
48				
33				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
128				
165				
129				
46				
81				
50				
68				
154				
	2,251	119,146		Aggregate of 10 customers grouped by volume
8				
35				
49				
21				
	828	43,794		Aggregate of last 4 customers grouped by volume

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
156				
83				
	73,104	3,868,652		Aggregate of 10 customers grouped by volume
16				
28				
42				
108				
157				
39				
63				
161				
69				
141				
	12,201	645,651		Aggregate of 10 customers grouped by volume
95				
52				
15				
75				
160				
145				
6				
101				
140				
78				
	9,765	516,771		Aggregate of 10 customers grouped by volume
10				
61				
59				
86				
36				
144				
126				
133				
125				
96				
	7,313	387,010		Aggregate of 10 customers grouped by volume
32				
118				
89				
77				
37				
73				
9				
21				
152				
62				
	6,158	325,863		Aggregate of 10 customers grouped by volume
94				
120				

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
57				
31				
27				
142				
3				
116				
143				
131				
	5,166	273,391		Aggregate of 10 customers grouped by volume
104				
100				
92				
5				
30				
158				
34				
124				
148				
14				
	4,169	220,642		Aggregate of 10 customers grouped by volume
151				
66				
102				
17				
67				
19				
164				
79				
134				
65				
	3,147	166,523		Aggregate of 10 customers grouped by volume
91				
51				
76				
150				
22				
153				
2				
81				
43				
162				
	2,703	143,035		Aggregate of 10 customers grouped by volume
44				
60				
48				
117				
53				
1				
154				
8				
12				
149				
	2,420	128,048		Aggregate of 10 customers grouped by volume
129				
33				
18				
47				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
7				
68				
128				
90				
46				
166				
	2,189	115,821		Aggregate of 10 customers grouped by volume
50				
35				
49				
25				
45				
	1,033	54,686		Aggregate of last 4 customers grouped by volume

CPUC
GHG – Natural Gas Sector Data Request

PART II-b, NGV

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 NGV MDth	Total 2005 NGV MDth	Total 2006 NGV MDth	NAICS CODING	NAICS Literal
	462	432	660		Aggregate of customers

Random Customer Number	Total 2004 NGV CO2 Emissions	Total 2005 NGV CO2 Emissions	Total 2006 NGV CO2 Emissions	NAICS CODING	NAICS Literal
	24,399	22,824	34,830		Aggregate of customers

**CPUC
GHG – Natural Gas Sector Data Request**

PART III, < 2 MM Therms

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

	2004	2005	2006
Total Cogen Customers*	212	190	190
Total Cogen Therms (MDth)	4,311	4,938	5,116
Total Cogen Emissions (MeTon)	228,153	261,317	270,733

* Under 2 million annual therms

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
1	20,000	76	26	27
20,001	40,000	31	25	25
40,001	60,000	21	26	25
60,001	80,000	12	14	7
80,001	100,000	6	14	8
100,001	120,000	6	8	5
120,001	140,000	7	2	8
140,001	160,000	2	6	8
160,001	180,000	1	5	3
180,001	200,000	2	7	5
200,001	220,000	3	2	7
220,001	240,000	2	2	5
240,001	260,000	3	2	4
260,001	280,000	3	4	2
280,001	300,000	-	3	3
300,001	320,000	3	2	3
320,001	340,000	1	5	2
340,001	360,000	-	1	3
360,001	380,000	1	2	3
380,001	400,000	-	2	1
400,001	420,000	2	-	1
420,001	440,000	-	2	3
440,001	460,000	-	1	2
460,001	480,000	1	-	-
480,001	500,000	1	-	-
500,001	520,000	1	1	-
520,001	540,000	1	2	1
540,001	560,000	1	-	-
560,001	580,000	2	-	-
580,001	600,000	-	-	-
600,001	620,000	2	-	2
620,001	640,000	1	1	1
640,001	660,000	-	-	1
660,001	680,000	-	2	2
680,001	700,000	-	2	2
700,001	720,000	1	-	-
720,001	740,000	-	-	1
740,001	760,000	-	-	1
760,001	780,000	-	2	-
780,001	800,000	-	-	-
800,001	820,000	-	-	-
820,001	840,000	-	1	-
840,001	860,000	-	-	1
860,001	880,000	-	-	-
880,001	900,000	-	-	-
900,001	920,000	1	2	-
920,001	940,000	-	-	-

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
940,001	960,000	-	-	1
960,001	980,000	-	2	1
980,001	1,000,000	-	1	-
1,000,001	1,020,000	1	-	1
1,020,001	1,040,000	-	1	-
1,040,001	1,060,000	-	-	-
1,060,001	1,080,000	-	-	-
1,080,001	1,100,000	-	1	1
1,100,001	1,120,000	-	1	1
1,120,001	1,140,000	1	-	-
1,140,001	1,160,000	1	-	-
1,160,001	1,180,000	-	-	-
1,180,001	1,200,000	-	1	2
1,200,001	1,220,000	1	1	2
1,220,001	1,240,000	-	1	-
1,240,001	1,260,000	-	-	-
1,260,001	1,280,000	2	1	1
1,280,001	1,300,000	2	1	-
1,300,001	1,320,000	1	-	1
1,320,001	1,340,000	-	-	-
1,340,001	1,360,000	1	1	-
1,360,001	1,380,000	-	-	-
1,380,001	1,400,000	-	-	-
1,400,001	1,420,000	-	-	-
1,420,001	1,440,000	-	-	1
1,440,001	1,460,000	-	-	-
1,460,001	1,480,000	2	-	-
1,480,001	1,500,000	-	-	-
1,500,001	1,520,000	1	-	-
1,520,001	1,540,000	-	-	1
1,540,001	1,560,000	-	-	-
1,560,001	1,580,000	-	-	-
1,580,001	1,600,000	-	-	-
1,600,001	1,620,000	-	-	-
1,620,001	1,640,000	-	-	1
1,640,001	1,660,000	-	-	-
1,660,001	1,680,000	-	-	-
1,680,001	1,700,000	-	1	1
1,700,001	1,720,000	-	-	-
1,720,001	1,740,000	-	1	1
1,740,001	1,760,000	1	-	-
1,760,001	1,780,000	2	-	1
1,780,001	1,800,000	1	1	-
1,800,001	1,820,000	-	-	-
1,820,001	1,840,000	1	-	1
1,840,001	1,860,000	-	-	-
1,860,001	1,880,000	-	-	-

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
1,880,001	1,900,000	-	-	-
1,900,001	1,920,000	-	-	-
1,920,001	1,940,000	-	-	-
1,940,001	1,960,000	-	-	-
1,960,001	1,980,000	-	1	-
1,980,001	2,000,000	-	-	-
		212	190	190

**CPUC
GHG – Natural Gas Sector Data Request**

PART III, > 2 MM Therms

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Category	2004	2005	2006
Tier 2			
Cogeneration Customers Between 2 - 3 Million Therms	7	3	5
Total Therms for Cogeneration Customers Between 2 -3 Million Therms (MDth)	1,853	696	1,193
Total Emissionsfor Cogeneration Customers Between 2 -3 Million Therms (MeTon)	98,052	36,859	63,119
Tier 3			
Cogeneration Customers Between 3 - 4.5 Million Therms	5	3	6
Total Therms for Cogeneration Customers Between 3 - 4.5 Million Therms (MDth)	1,760	1,077	1,500
Total Emissions for Cogeneration Customers Between 3 - 4.5 Million Therms (MeTon)	93,144	56,974	79,378
Tier 4			
Cogeneration Customers Greater than 4.5 Million Therms	30	33	32
Total Therms for Cogeneration Customers Greater than 4.5 Million Therms (MDth)	115,632	121,144	107,876
Total Emissions for Cogeneration Customers Greater than 4.5 Million Therms (MeTon)	6,119,215	6,410,927	5,708,806

Pacific Gas and Electric Company
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Random Customer Number	Total 2004 COG (MDth)	2004 Emissions (CO2 Mt)	NAICS CODING	NAICS Literal
113				
109				
80				
23				
127				
74				
135				
84				
146				
139				
	87,188	4,614,007		Aggregate of 10 customers grouped by volume
77				
110				
103				
142				
85				
115				
93				
99				
111				
75				
	19,233	1,017,790		Aggregate of 10 customers grouped by volume
88				
41				
97				
136				
123				
13				
55				
132				
70				
72				
	9,210	487,419		Aggregate of 10 customers grouped by volume
105				
54				
40				
130				
82				
106				
107				
98				
64				
20				
119				
12				
	3,613	191,196		Aggregation of last 12 customers grouped by volume

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 COG (MDth)	2005 Emissions (CO2 Mt)	NAICS Coding	NAICS Literal
113				
80				
122				
109				
135				
74				
127				
23				
84				
103				
	90,672	4,798,371		Aggregate of 10 customers grouped by volume
139				
146				
115				
110				
142				
111				
85				
75				
93				
99				
	20,667	1,093,676		Aggregate of 10 customers grouped by volume
41				
123				
77				
138				
97				
132				
55				
88				
70				
120				
	8,417	445,431		Aggregate of 10 customers grouped by volume
72				
130				
20				
40				
54				
137				
64				
29				
98				
	3,161	167,281		Aggregate of last 9 customers grouped by volume

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 COG (MDth)	2006 Emissions (CO2 Mt)	NAICS CODING	NAICS Literal
113				
80				
122				
109				
127				
74				
84				
23				
115				
135				
	80,270	4,247,896		Aggregate of 10 customers grouped by volume
111				
110				
146				
142				
139				
99				
75				
41				
85				
93				
	18,499	978,984		Aggregate of 10 customers grouped by volume
97				
88				
77				
123				
55				
138				
132				
70				
120				
130				
	8,162	431,912		Aggregate of 10 customers grouped by volume
72				
20				
87				
54				
40				
64				
137				
159				
103				
29				
112				
71				
106				
	4,342	229,780		Aggregate of last 13 customers grouped by volume

**CPUC
GHG – Natural Gas Sector Data Request**

PART IV

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Wholesale Customer Name	2004 Volumes (MDth)	2005 Volumes (MDth)	2006 Volumes (MDth)
Total	3,749	3,651	3,786

Wholesale Customer Name	2004 Emissions (Mt)	2005 Emissions (Mt)	2006 Emissions (Mt)
Total	198,419	193,211	200,376

**CPUC
GHG – Natural Gas Sector Data Request**

PART VI

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009
 Natural Gas Use and GHG Emissions Associated with Natural Gas Infrastructure within California for 2004, 2005, 2006

Ref #	LEAKAGE	Estimated or Actual Observations (if estimated refer to Data Sources by Ref # Worksheet)	Estimated method approved by regulatory body	Reported to GHG Emissions Registry	Natural Gas Sources Emitted/Burned			GHG Emissions		
					2003 Mtdh (if scaling method used)	2004 Mtdh	2005 Mtdh	2006 Mtdh	2004 Mton CO2e	2005 Mton CO2e
1	Distribution Leakage	Estimated	N/A	N/A	417.8	410.1	409.1	156,140	155,294	154,852
2	Transmission Leakage	Estimated	N/A	N/A	13.9	22.3	19.4	5,254	8,444	7,354
3	Distribution Dig-ins	Estimated	N/A	N/A	110.7	103.0	101.5	41,910	38,974	38,420
4	Transmission Dig-ins	Estimated	N/A	N/A	10.9	21.8	13.2	4,130	8,261	4,981
UNMETERED COMPANY USAGE										
5	Pipeline Blow and Purge Gas	Estimated	N/A	N/A	66.8	74.4	66.0	28,146	24,972	24,814
6	Pneumatic Instrument Gas Usage - Station Valves	Estimated	N/A	N/A	2.6	2.9	2.6	1,102	977	971
7	Pneumatic Instrument Gas Usage - Instruments	Estimated	N/A	N/A	184.0	204.9	181.8	77,560	68,814	68,378
8	Distribution Meter and Regulator Station Blow and Purge	Estimated	N/A	N/A	1.3	1.4	1.3	540	479	476
9	Compressor Units' and Stations' Blow and Purge Gas	Estimated	N/A	N/A	79.7	88.8	78.8	33,614	29,823	29,634
10	Line 400/401 Turbine Starter Gas Usage	Estimated	N/A	N/A	18.0	20.0	17.7	7,571	6,717	6,675
11	Gas Drig Blow Down Operations	Estimated	N/A	N/A	0.4	0.4	0.4	151	151	151
12	Odorizer Stations' Blow and Vent Gas	Estimated	N/A	N/A	1.0	1.0	1.0	363	363	363
13	Dehydrator Stations' Blow and Purge Gas	Estimated	N/A	N/A	0.1	0.1	0.1	26	26	26
14	Gas Sampling Operations	Estimated	N/A	N/A	4.7	4.7	4.7	1,760	1,760	379
15	Distribution System Relief Valve Operations	Estimated	N/A	N/A	2.3	2.3	2.3	867	867	867
GAS COMBUSTED										
16	Gas used for operations and/or flaring e.g. compr. fuel.	Metered Usage	N/A	N/A	5604.5	4072.9	5017.7	296,592	215,535	265,536

Notes

The weighted system average heating value of gas on the PG&E System in 2003 - 2005 was 1015 BTU/scf
 The weighted system average heating value of gas on the PG&E System in 2006 was 1020 BTU/scf
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2004 = 1.11356
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2005 = 0.98798
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2006 = 0.97692
 Description of natural gas quality specifications that must be met to transport natural gas on PG&E System = Gas Rule 21
 CARB Emission Factor for stationary combustion of PG&E Gas = 52.9199 Mton CO2e/Mtdh
 CO2e Emission Factor for fugitive emission of PG&E Gas = 376.5493 Mton CO2e/Mtdh

This calculation presented in "GHG Tons CO2 Calc" Worksheet
[Gas Rule 21 hyperlink: http://www.pge.com/iariffs/pdf/GR21.pdf](http://www.pge.com/iariffs/pdf/GR21.pdf)

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Ref #	Source Category	Data Source and Reference
1	Distribution Leakage	The methodology for estimating the leakage in Mcf for each leak category is outlined in the "Unaccounted-for Gas Project: Leak Task Force Volume 4" report dated June, 1990. This project was co-funded by Gas Research Institute and assigned Report No. GRI-90/0067.6. The number of active leaks by year and by category has been extracted from the Integrated Gas Information System (IGIS).
2	Transmission Leakage	
3	Distribution Dig-ins	
4	Transmission Dig-ins	
5	Pipeline Blow and Purge Gas	This volume is calculated from the starting pressure and pipe volume for various Maintenance and Construction projects where significant volumes of gas were vented in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
6	Pneumatic Instrument Gas Usage - Station Valves	This calculation is based on the number of gas powered valves, the estimated valve cycling frequency, and use per valve cycle for valves in service in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
7	Pneumatic Instrument Gas Usage - Instruments	This calculation is based on the estimated annual usage by instrument type and the number of various instrument types in service in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
8	Distribution Meter and Regulator Station Blow and Purge	This value is calculated from the number of new business meter and regulator installations, metering changes, and meter/rog maintenance activities in 2003 and the estimated gas volume contained in the various sizes of meters. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
9	Compressor Units' and Stations' Blow and Purge Gas	This value is calculated by multiplying the estimated volume for each compressor and compressor station blow down and the frequency of these events in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
10	Line 400/401 Turbine Starter Gas Usage	This value is calculated by multiplying the number of turbine compressor starts in 2003 by 35 Mcf, the estimator usage by start, and then using a factor of 1.35 to account for unsuccessful start attempts. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
11	Gas Drip Blow Down Operations	This value is calculated by multiplying the number of times that gas drips were blown down in 2003 to remove liquids, a total of 757 times, by the vented volume per blowdown, 0.52 Mcf per blow down. The value was assumed to be the same for the years, 2004, 2005, and 2006.
12	Odorizer Stations' Blow and Vent Gas	The estimated the injection pump usage amount plus the estimated annual amount of gas blown during storage tank refilling was calculated in 2004 for the year 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
13	Dehydrator Stations' Blow and Purge Gas	This value is calculated by multiplying the estimated average annual value per dehydrator unit, 18 Mcf per year, by the number of units in service in 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
14	Gas Sampling Operations	This value is calculated by multiplying the average annual usage volume per gas sampler type (spot, continuous, or gas chromatograph) by the number of units in service in 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
15	Distribution System Relief Valve Operations	For the years 2004, 2005, and 2006 the number of malfunction events in which a distribution system relief valve operated were assumed to be approximately the same as in 1997 when a study of these events was completed. The total volume of gas released by relief valves operating in response to a system malfunction is approximately 2,120 Mcf per year.
16	Gas used for operations and/or flaring e.g. compr. fuel	Calculations based on metered gas usage data in 2004, 2005, and 2006

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009
 Gas used for operations and/or flaring e.g. compr. fuel, Ref 16

COMPANY GAS USE
 MCF
 2004 RECAP

DESCRIPTION	MCF 2004 USAGE
DEHYDRATORS	
Line 114	2,380
Miller Field	22
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	256
TRANSMISSION COMPRESSORS	
Barney	377,283
Delevan	1,468,796
Gerber	649,336
Tionesta	350,559
TRANSMISSION COMPRESSORS	
Finley	1,354,121
Kettleman	387,882
Topock	549,251
STORAGE COMPRESSORS	
Los Medanos - K-1	103,259
Mc Donald Island -K3-K6	187,129
Pleasant Creek - K8	6,951
AUXILIARY FUEL	
Barney	3,928
Delevan	362
Gerber	2,883
Tionesta	2,837
Kettleman	309
Los Medanos	129
DEHYDRATORS	
McDonald Island	44,243
Stampac 4	14,533
Los Medanos Dehy 1	4,610
Los Medanos Dehy 2	2,574
Los Medanos Fair Fuel	8,170
TOTALS	5,521,711

BTU Conversion 1.015 BTU/scf
 Total Company Gas Use 5,522 MMCF
 Total Company Gas Use 5,605 MDth

COMPANY GAS USE
 MCF
 2005 RECAP

DESCRIPTION	MCF 2005 USAGE
DEHYDRATORS	
Line 114	1,590
Miller Field	0
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	1,158
TRANSMISSION COMPRESSORS	
Barney	186,242
Delevan	1,113,195
Gerber	108,242
Tionesta	43,800
TRANSMISSION COMPRESSORS	
Finley	1,100,300
Kettleman	426,008
Topock	632,733
STORAGE COMPRESSORS	
Los Medanos - K-1	104,571
Mc Donald Island -K3-K6	185,626
Pleasant Creek - K8	5,716
AUXILIARY FUEL	
Barney	3,010
Delevan	755
Gerber	1,248
Tionesta	2,101
Kettleman	399
Los Medanos	301
DEHYDRATORS	
McDonald Island	61,469
Stampac 4	11,998
Los Medanos Dehy 1	6,522
Los Medanos Dehy 2	4,770
Los Medanos Fair Fuel	10,799
TOTALS	4,012,651

BTU Conversion 1.015 BTU/scf
 Total Company Gas Use 4,013 MMCF
 Total Company Gas Use 4,073 MDth

COMPANY GAS USE
 MCF
 2006 RECAP

DESCRIPTION	MCF 2006 USAGE
DEHYDRATORS	
Line 114	583
Miller Field	0
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	284
TRANSMISSION COMPRESSORS	
Barney	403,169
Delevan	1,120,251
Gerber	232,869
Tionesta	228,921
TRANSMISSION COMPRESSORS	
Finley	1,190,770
Kettleman	661,414
Topock	670,870
STORAGE COMPRESSORS	
Los Medanos - K-1	88,461
Mc Donald Island -K3-K6	185,370
Pleasant Creek - K8	7,117
AUXILIARY FUEL	
Barney	2,715
Delevan	1,255
Gerber	1,339
Tionesta	1,845
Kettleman	1,237
Los Medanos	161
DEHYDRATORS	
McDonald Island	92,725
Stampac 4	7,082
Los Medanos Dehy 1	6,404
Los Medanos Dehy 2	2,049
Los Medanos Fair Fuel	12,307
TOTALS	4,919,316

BTU Conversion 1.02 BTU/scf
 Total Company Gas Use 4,919 MMCF
 Total Company Gas Use 5,018 MDth

Pacific Gas and Electric Company

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The following are typical gas compositions that compare in Btu to the system average Btu by year used for this report. Compositions will vary by time and source of gas.

The GHG emissions factors contained in the ARB Report have been used to calculate the GHG emissions impact in the Data Request worksheet and those factors are not likely to match the impact calculated from the gas compositions shown below.

Typical Gas Composition for 1015 Btu Gas

System average heating value for 2004 and 2005 was approximately 1015

96.31% Typical Percent Methane

1.27% Typical Percent Carbon Dioxide

Date	09-Dec-97
BTU	1014.8
Sp_Gr	0.5808
N2	0.49%
C02	1.27%
Methane	96.31%
Ethane	1.61%
Propane	0.23%
I_Butane	0.03%
N_Butane	0.03%
I_Pentane	0.01%
N_Pentane	0.01%
C6	0.02%

Typical Gas Composition for 1020 Btu Gas

System average heating value for 2006 was approximately 1020

95.81% Typical Percent Methane

0.63% Typical Percent Carbon Dioxide

Date	23-Feb-00
BTU	1020.2
Sp_Gr	0.5788
N2	0.96%
C02	0.63%
Methane	95.81%
Ethane	2.40%
Propane	0.15%
I_Butane	0.02%
N_Butane	0.02%
I_Pentane	0.01%
N_Pentane	0.01%
C6	0.01%

Adapted from factors compiled by Jack Dunlap

Source	Conversion Factors	Total Leakage mcf	Total CH4 mcf	Total Weight Methane Lbs	Methane CO Equivalent Metric Tn	Total CO2 mcf	Total Weight CO2 Metric Tn	Total CO2 Equiv Metric Tns
Total Methane		1,000	958	40,508	385.79	6	0.333	386.12
CCAR March 2007, pg 84	Density of Methane Lbs to Metric Ton			42.28 Lbs/mcf 2205 Lbs/Metric Ton				
IPCC 2nd Assess Report	CH4 to CO2 Equivalent (GWP)		21 Lbs-CO2/Lb-Methane					
Part VI - Gas Composition	Pct Methane in Gas		95.81% Percent Methane in Natural Gas					
Part VI - Gas Composition	Pct CO2 in Gas		0.63% Percent CO2 in Natural Gas					
CCAR March 2007, pg 84	Density of CO2		115.97 Lbs/mcf					
Part VI - Gas Composition	dth/mcf pipeline gas		1.02					

MeTonCo2e/MMcf pipeline gas emissions 386.12
 MeTonCo2e/MDth pipeline gas emissions 378.55

<http://www.climateregistry.org/docs/PROTOCOLS/GRP%20V2-March2007.pdf>

**CPUC
GHG- Natural Gas Sector Data Request**

.PART VI – 2005 CCAR Report

Annual Emissions Report

Report Date: 11/19/2007 12:10 pm PT



Pacific Gas & Electric Company

77 Beale Street, B24A

San Francisco, CA 94105 United States

<http://www.pge.com>

415-973-6905

gjs8@pge.com

Contact: Greg San Martin

Industry Type: Utility

NAIC Code: 221-Utilities

SIC Code: 4931-Electric and Other Services Combined

Description: Pacific Gas and Electric Company is the principal provider of electricity and natural gas distribution and transmission services in northern and central California. Our service territory covers 70,000 square miles (46 of California's 58 counties). We have 4.9 million electric accounts and 3.9 million gas accounts. We serve a total of 14 million customers (1 in 21 Americans). We maintain 139,000 miles of electric transmission and distribution lines and 46,000 miles of natural gas transmission and distribution pipelines. Each year, PG&E delivers approximately 80 billion KWhs of electricity and 279,000 MMCF of natural gas. Approximately two-thirds of the electricity we deliver to customers is purchased rather than generated.

Primary Calculation

Methodologies: We use Registry default factors.

We rely largely on FERC and the data management structures in place to roll up source-, facility-, and department-specific emissions into an entity-wide or sub-entity-wide emissions.

Legend

Blue = required

Orange = optional

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2005
 Reporting Scope: CA
 Reporting Protocol: General Reporting Protocol, Version 2.1 (June 2006);
 Power/Utility Reporting Protocol, Version 1 (April 2005)
 Baseline Year (Direct Emissions):
 Baseline Year (Indirect Emissions):

Direct Emissions	CO ₂ e	CO ₂	CH ₄	N ₂ O	HFCs*	PFCs*	SF ₆	Unit
Mobile Combustion	79,069.27	79,069.27	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	935,454.35	934,489.54	17.91	1.90	0.00	0.00	0.00	metric ton
Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	1,962,032.33	0.00	89,612.00	0.00	0.00	0.00	3.35	metric ton
TOTAL DIRECT	2,976,555.94	1,013,558.81	89,629.91	1.90	0.00	0.00	3.35	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO₂-equivalent column.

Indirect Emissions	CO ₂ e	CO ₂	CH ₄	N ₂ O	Unit
Purchased Electricity	1,170,023.00	1,168,153.32	9.73	5.37	metric ton
Purchased Steam	0.00	0.00	0.00	0.00	-
Purchased Heating and Cooling	0.00	0.00	0.00	0.00	-
TOTAL INDIRECT	1,170,023.00	1,168,153.32	9.73	5.37	metric ton

Annual Emissions Report

Report Date: 11/19/2007 12:10 pm PT



Pacific Gas & Electric Company

CERTIFICATION INFORMATION

Certification Company: SGS North America, Inc., Trade Assurance Services Division

Basis of Certification Opinion: Fourth year reporting cycle full review. The verification concludes that the GHG Inventory is complete and free from material error or omission.

OPTIONAL INFORMATION

Information in this section is voluntarily provided by the participant for public information, but is not required and thus, not certified under Registry protocols.

Optional Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Other Indirect Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL OPTIONAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Emissions Efficiency metric:

Emissions Management Programs:

US EPA's SF6 Emission Reduction Program (voluntary effort)
 US EPA's Natural Gas Star Program (voluntary effort)
 US EPA's Energy Star Program (voluntary effort)
 Customer Energy Efficiency (a PUC mandated program)
 Customer Energy Efficiency and Conservation (voluntary efforts)
 Self-Generation Incentive Program (a PUC mandated program)
 Renewable Portfolio Standard (a PUC mandated program)
 Facility Electricity Use Reduction Program (voluntary effort)
 Mobile Source Program (voluntarily replaces gasoline and diesel vehicles with natural gas vehicles)
 Commuter Best Practices (voluntarily increases use of carpooling and public transportation by employees)

Emissions Reduction Projects:

Emissions Reduction Goals:

PG&E has a number of emission reduction goals. In the SF6 partnership with US EPA, we committed to a 60 % reduction in SF6 emissions. Since 1998, we have achieved in excess of a 75 % reduction in leak rates. We established an internal target for electricity use reductions in 1995. In 1999, we reset the target and increased the number of facilities (to 88 facilities and more recently to over 100 facilities) that the new target would apply to. Our goal was to reduce overall energy usage by 20 %. To date, we are achieving in excess of a 20 % reduction in electricity use compared to the 1999 baseline. Approximately two-thirds of the electricity we deliver to customers is purchased rather than generated. Modeling by the Lawrence Berkeley National Laboratory indicates that our portfolio-wide emissions (associated with purchased plus generated power) are approximate 18.5 million tons per year. As a result of emission management programs described above, we project a decline in portfolio-wide emissions over the next 10 years.

REFERENCE DOCUMENTS

Title	Author	Publish Date
PUP Spreadsheet, revised Dec 1, 2006	Werner Heck	12/1/2006 12:00:00AM

Annual Entity Emissions: Electric Power Generation/Electric Utility Sector		CO ₂		CH ₄	N ₂ O	HCFCs	PFCs	SF ₆	Unit
1	Pacific Gas & Electric Corporation								
2	77 Beale Street								
3	San Francisco, California 94115								
4	www.pge.com								
5	Reporting Year: 2005								
6	Reporting Scope: CA and U.S.								
7	Reporting Protocols: General Reporting Protocol Version 2.0 (April 2006)								
8	Power/Utility Reporting Protocol Version 1.0 (April 2005)								
9	Contact: Greg San Martin								
10	Title: Climate Change Coordinator								
11	Telephone: (415) 973-6905								
12	Email: gjs8@pge.com								
13	Industry Type: Electric Utility								
14	NAIC Code: 2211 - Electric Power Generation, Transmission and Distribution								
15	SIC Code: 4931 - Electric and Other Services Combined								
16	Entity Description:	Pacific Gas and Electric Company is the principal provider of electricity and natural gas distribution and transmission services in northern and central California. Our service territory covers 70,000 square miles (46 of California's 58 counties). We have 4.9 million electric accounts and 3.9 million gas accounts. We serve a total of 14 million customers (1 in 21 Americans). We maintain 139,000 miles of electric transmission and distribution lines and 48,000 miles of natural gas transmission and distribution pipelines. Each year, PG&E delivers approximately 80 billion kWh of electricity and 279,000 MMcf of natural gas. Approximately two-thirds of the electricity we deliver to customers is purchased rather than generated. The purchased and PG&E generated power includes a diverse mix of fuel sources including fossil fuel (oil and natural gas), nuclear, hydroelectric, and renewable sources such as biomass, geothermal, small hydro, solar, and wind.							
17	POWER/UTILITY ENTITY EMISSIONS								
18	Direct Emissions from Owned Facilities	79,069	79,069	0.00	0.00	n.a.	0.00	n.a.	metric tons
19	Mobile Combustion	935,451	934,490	17.90	1.89	n.a.	n.a.	n.a.	metric tons
20	Total Stationary Combustion	668,861	668,221	11.85	1.26	n.a.	n.a.	n.a.	metric tons
21	from Electric Power Generation, Transmission & Distribution Activities	246,843	246,625	4.20	0.42	n.a.	n.a.	n.a.	metric tons
22	from Natural Gas-Related Activities	19,747	19,643	1.85	0.21	n.a.	n.a.	n.a.	metric tons
23	from Other On-Site Combustion	0.00	0	0.00	0.00	0.00	0.00	0.00	metric tons
24	Process Emissions	1,982,017	0	89,612.00	0.00	0.00	0.00	3,335	metric tons
25	Fugitive Emissions	2,976,538	1,013,559	89,630	1.89	0.00	0.00	3,335	metric tons
26	TOTAL DIRECT EMISSIONS								
27	% of Net Generation Delivered to CA	100							
28	% of Net Generation Delivered Outside of CA	0							
29	Total Direct Emissions from Deliveries to CA	2,976,538	1,013,559	8,962,990.00	189.00	0.00	0.00	335.42	metric tons
30	Total Direct Emissions from Deliveries outside of CA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	metric tons
31	Indirect Emissions from Owned Facilities								
32	Electricity Purchased and Consumed	45,949	45,875	0.38	0.21	0.00	0.00	0.00	metric tons
33	Steam Purchased and Consumed	0.00	0	0.00	0.00	0.00	0.00	0.00	metric tons
34	Heat Purchased and Consumed	0.00	0	0.00	0.00	0.00	0.00	0.00	metric tons
35	Cooling Purchased and Consumed	0.00	0	0.00	0.00	0.00	0.00	0.00	metric tons
36	Total Transmission and Distribution Losses	1,124,074	1,122,278	9.35	5.16	0.00	0.00	0.00	metric tons
37	from Purchased Power	657,743	656,692	5.47	3.02	0.00	0.00	0.00	metric tons
38	from Wheeled Power (excluding Direct Access)	226,326	227,961	1.90	1.05	0.00	0.00	0.00	metric tons
39	from Direct Access	239,005	237,625	1.98	1.09	0.00	0.00	0.00	metric tons
40	TOTAL INDIRECT EMISSIONS	1,170,023	1,168,153	9.73	5.37	0.00	0.00	0.00	metric tons

A	B	C	D	E	F	G	H	I	J	K		
											Amount	Unit
56	POWER/UTILITY GENERATION/PURCHASES INFORMATION											
57	Owned Generation Total (Net)	30,237,867	MWh		668,221	metric tons						
58	Fossil Generation (Net)	1,055,517	MWh		668,221	metric tons						
59	Biogenic Generation (Net)	0.00	MWh		0.00	metric tons						
60	Geothermal Generation (Net)	0.00	MWh		0.00	metric tons						
61	Other Renewable Generation (Net)	11,461,302	MWh		0.00	metric tons						
62	Zero Emission Generation (Net)	17,721,047	MWh		0.00	metric tons						
63	Steam Generation (Net)	0.00	MWh		0.00	metric tons						
64	Purchased Generation Total (Net)	47,265,594	MWh		16,528,193	metric tons						
65	Purchased Fossil Generation (Net)	33,442,778	MWh		16,528,193	metric tons						
66	Purchased Biogenic Generation (Net)	3,286,885	MWh		0.00	metric tons						
67	Purchased Geothermal Generation (Net)	1,680,710	MWh		0.00	metric tons						
68	Purchased Other Renewable Generation (Net)	8,855,221	MWh		0.00	metric tons						
69	Purchased Zero Emission Generation (Net)	0.00	MWh		0.00	metric tons						
70	Purchased Cogeneration (Net)	0.00	MWh		0.00	metric tons						
71	Purchased Wholesale Power (Net)	0.00	MWh		0.00	metric tons						
72	TOTAL FOSSIL GENERATION/PURCHASES	34,498,295	MWh		17,196,414	metric tons						
73	TOTAL FROM BIOGENIC/GEOTHERMAL SOURCES	4,967,595	MWh		0.00	metric tons						
74	TOTAL OTHER GENERATION/PURCHASES	38,037,571	MWh		0.00	metric tons						
75	TOTAL FROM ALL GENERATION SOURCES	77,503,461	MWh		17,196,414	metric tons						
76												
77												
78												
79												
80												
81	EMISSIONS EFFICIENCY METRICS											
90	Electricity Delivered:	489.2	lbs CO ₂ /MWh delivered (includes CO ₂ from owned and purchased generation)									
91	Net Generation:	48.7	lbs CO ₂ /MWh net owned generation (fossil, hydroelectric, nuclear, solar, DG)									
92	Net Fossil Generation:	1,395.7	lbs CO ₂ /MWh net owned fossil generation only									
93												
94												
95												
96												
97												
98	De Minimis Emissions											
99	Emissions reported in this section are estimated; these estimates are reviewed by the certifier and found to be less than 5% of the total entity emissions.											
100	Mobile Emissions	3,220	CO ₂		22.31	CO ₂		8.59	CO ₂		0.00	metric tons
101	Stationary Emissions	10,810	CO ₂		0.00	CO ₂		0.00	CO ₂		0.00	metric tons
102	Process Emissions	0	CO ₂		0.00	CO ₂		0.00	CO ₂		0.00	metric tons
103	Fugitive Emissions	24,225	CO ₂		24,225.30	CO ₂		0.00	CO ₂		0.00	metric tons
104	Indirect Emissions		CO ₂			CO ₂			CO ₂			metric tons
105	TOTAL DE MINIMIS EMISSIONS	38,255	CO₂		35,035.30	CO₂		8.59	CO₂		0.00	metric tons
106												
107												

	A	B	C	D	E	F	G	H	I	J	K
108	OPTIONAL EMISSIONS										
109	Information in this section is voluntarily provided by the participant for public information, but is not required, and thus, not certified under Registry protocols.										
110											
111	Upstream Emissions		CO ₂ e	CO ₂	CH ₄	N ₂ O	HFC	PFC	SF ₆	Unit	
112	Upstream Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 metric tons	
113	Other Indirect Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 metric tons	
114	TOTAL OPTIONAL EMISSIONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 metric tons	
115	Comments:										
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Information on Environmental Goals and Programs:

Information on GHG Risk and Liability:

Company Activities Related to Renewable Energy

Purchases of Tradable Renewable Certificates: 0.00 metric tons CO₂e

Sales of Tradable Renewable Certificates: 0.00 metric tons CO₂e

Geographic Origin of Certificates:
Parties Notified of Transaction(s):
Comments:

Company Activities to Offset GHG Emissions

Purchases of GHG Emission Offsets: 0.00 metric tons CO₂e

Sales of GHG Emission Offsets: 0.00 metric tons CO₂e

Type of Project(s):
Terms of Purchase/Sale:
Parties Notified of Transaction(s):
Comments:

Company Activities to Improve Energy Efficiency

Description:

Estimated Annual Energy Efficiency Savings: 0.00 MWh

0.00 therms

Reasons for Undertaking Energy Efficiency Programs: Demand-side management, reduce peak load, improve energy efficiency of buildings

Comments:

Other Company Actions to Reduce GHG Emissions:

Benefits of Actions:

Other Emissions Efficiency Metric(s):

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Volume in MDth	2004	2005	2006
Residential Bundled Therms	202,888	195,677	202,386
Residential Transport Therms	462	398	628
Total Residential Therms	203,351	196,075	203,013
Residential Bundled Customers	3,867,137	3,933,384	3,990,907
Residential Transport Customers	7,201	6,474	6,706
Total Residential Customers*	3,874,338	3,939,857	3,997,613

Emissions in Metric Tons of CO₂e	2004	2005	2006
Residential Bundled Emissions	10,736,836	10,355,225	10,710,227
Residential Transport Emissions	24,457	21,057	33,222
Total Residential Emissions	10,761,293	10,376,282	10,743,449

Emissions in Metric Tons of CO₂	2004	2005	2006
Residential Bundled Emissions	10,726,712	10,345,460	10,700,128
Residential Transport Emissions	24,434	21,037	33,191
Total Residential Emissions	10,751,146	10,366,498	10,733,319

Emissions in Metric Tons of N₂O	2004	2005	2006
Residential Bundled Emissions	6,290	6,066	6,274
Residential Transport Emissions	14	12	19
Total Residential Emissions	6,304	6,078	6,293

Emissions in Metric Tons of CH₄	2004	2005	2006
Residential Bundled Emissions	3,835	3,698	3,825
Residential Transport Emissions	9	8	12
Total Residential Emissions	3,843	3,706	3,837

* Residential Schedules used include: G-1, G1-NGV, GM, GS, GT, GL-1, GML, GSL, GTL

No Residential Customer Used over 2 million therms annually

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Volumes in MDth and Emmissions in MeTon

Tier 1			
Commercial			
	2004	2005	2006
Commercial Bundled Therms (MDth)	78,644	76,508	73,652
Commercial Transport Therms (MDth)	41,370	41,361	47,503
Total Commercial Therms (MDth)	120,014	117,869	121,155
Commercial Bundled Customers	209,976	211,550	208,498
Commercial Transport Customers	5,472	6,085	12,511
Total Commercial Customers	215,447	217,635	221,010
Commercial Bundled Emissions (CO2e)	4,161,832	4,048,818	3,897,659
Commercial Transport Emissions (CO2e)	2,189,302	2,188,799	2,513,871
Total Commercial Emissions (CO2e)	6,351,134	6,237,617	6,411,530
Commercial Bundled Emissions (CO2)	4,157,908	4,045,000	3,893,984
Commercial Transport Emissions (CO2)	2,187,238	2,186,735	2,511,500
Total Commercial Emissions (CO2)	6,345,146	6,231,735	6,405,485
Commercial Bundled Emissions (N2O)	2,438	2,372	2,283
Commercial Transport Emissions (N2O)	1,282	1,282	1,473
Total Commercial Emissions (N2O)	3,720	3,654	3,756
Commercial Bundled Emissions (CH4)	1,486	1,446	1,392
Commercial Transport Emissions (CH4)	782	782	898
Total Commercial Emissions (CH4)	2,268	2,228	2,290

NGV			
	2004	2005	2006
(Non PG&E) NGV Bundled Therms (MDth)	1,269	1,378	1,256
(Non PG&E) NGV Transport Therms (MDth)	96	102	107
PG&E NGV Interdepartmental Therms (MDth)	52	61	64
Total NGV Therms (MDth)	1,417	1,540	1,428
(Non PG&E) NGV Bundled Customers	960	960	960
(Non PG&E) NGV Transport Customers	10	10	10
PG&E NGV Interdepartmental Customers	28	28	29
Total NGV Customers	998	998	999
(Non PG&E) NGV Bundled Emissions (CO2)	67,017	72,749	66,342
(Non PG&E) NGV Transport Emissions (CO2)	5,076	5,364	5,676
PG&E NGV Interdepartmental Emissions (CO2)	2,744	3,218	3,389
Total NGV Emissions (CO2)	74,838	81,331	75,407
Rate Schedules used for this data include: G-NR1, G-NR2, G-NT, G-NGV4, G-NGV1, G-NGV2			

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Year	Minimum	Maximum	Median	Mean
2004	0.00	197.48	0.53	0.05
2005	0.00	199.30	0.52	0.04
2006	0.00	194.49	0.53	0.05

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Number of Customers		
From	To	2004	2005	2006
0	0	10391	11343	12381
1	20,000	205915	207378	209005
20,001	40,000	4661	4724	4879
40,001	60,000	1381	1351	1418
60,001	80,000	625	631	628
80,001	100,000	361	348	363
100,001	120,000	238	251	261
120,001	140,000	148	175	186
140,001	160,000	140	126	132
160,001	180,000	99	95	83
180,001	200,000	88	79	79
200,001	220,000	61	72	63
220,001	240,000	57	69	61
240,001	260,000	67	39	50
260,001	280,000	31	41	44
280,001	300,000	47	45	36
300,001	320,000	29	42	40
320,001	340,000	27	30	34
340,001	360,000	24	32	32
360,001	380,000	23	11	26
380,001	400,000	27	27	19
400,001	420,000	23	26	22
420,001	440,000	18	15	16
440,001	460,000	21	24	26
460,001	480,000	19	13	19
480,001	500,000	17	15	18
500,001	520,000	27	20	27
520,001	540,000	16	20	18
540,001	560,000	12	12	10
560,001	580,000	13	16	18
580,001	600,000	20	11	13
600,001	620,000	14	13	12
620,001	640,000	10	11	9
640,001	660,000	11	14	14
660,001	680,000	8	8	11
680,001	700,000	16	12	17
700,001	720,000	15	12	13
720,001	740,000	9	14	6
740,001	760,000	10	14	8
760,001	780,000	9	11	12
780,001	800,000	9	6	4
800,001	820,000	5	5	10
820,001	840,000	3	11	6
840,001	860,000	12	7	5
860,001	880,000	5	2	6
880,001	900,000	4	3	9
900,001	920,000	3	5	1

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Number of Customers		
From	To	2004	2005	2006
920,001	940,000	6	5	4
940,001	960,000	7	5	2
960,001	980,000	3	4	1
980,001	1,000,000	4	3	7
1,000,001	1,020,000	7	8	6
1,020,001	1,040,000	0	1	3
1,040,001	1,060,000	4	1	4
1,060,001	1,080,000	4	2	4
1,080,001	1,100,000	4	5	5
1,100,001	1,120,000	6	4	4
1,120,001	1,140,000	2	4	4
1,140,001	1,160,000	2	2	3
1,160,001	1,180,000	3	5	0
1,180,001	1,200,000	7	3	6
1,200,001	1,220,000	3	3	3
1,220,001	1,240,000	0	2	2
1,240,001	1,260,000	2	1	1
1,260,001	1,280,000	0	3	1
1,280,001	1,300,000	2	3	2
1,300,001	1,320,000	3	2	1
1,320,001	1,340,000	1	0	2
1,340,001	1,360,000	3	2	2
1,360,001	1,380,000	2	3	1
1,380,001	1,400,000	1	1	2
1,400,001	1,420,000	1	0	2
1,420,001	1,440,000	1	3	1
1,440,001	1,460,000	1	0	3
1,460,001	1,480,000	4	0	2
1,480,001	1,500,000	1	2	0
1,500,001	1,520,000	0	1	2
1,520,001	1,540,000	0	0	1
1,540,001	1,560,000	1	0	1
1,560,001	1,580,000	2	1	2
1,580,001	1,600,000	6	0	2
1,600,001	1,620,000	1	1	0
1,620,001	1,640,000	0	2	3
1,640,001	1,660,000	1	2	0
1,660,001	1,680,000	2	2	0
1,680,001	1,700,000	1	2	2
1,700,001	1,720,000	0	0	0
1,720,001	1,740,000	1	0	0
1,740,001	1,760,000	0	1	3
1,760,001	1,780,000	1	5	1
1,780,001	1,800,000	2	1	3
1,800,001	1,820,000	2	0	0
1,820,001	1,840,000	1	2	0
1,840,001	1,860,000	0	1	1

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Number of Customers		
From	To	2004	2005	2006
1,860,001	1,880,000	1	1	0
1,880,001	1,900,000	0	2	1
1,900,001	1,920,000	0	0	1
1,920,001	1,940,000	0	0	1
1,940,001	1,960,000	2	1	1
1,960,001	1,980,000	3	0	0
1,980,001	2,000,000	0	2	0
		224,880	227,333	230,253

Note: Due to the two different methodologies of obtaining data, the customer counts do not match the summary report. If a premise was occupied by one or more customers during the year but together were only on service for 9 months, the histogram will count them as one customer where the Summary report will count them as .75 Customers.

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Volumes in MDth and Emissions in MeTon

Category	2004	2005	2006
Tier 2 - Between 2 - 3 Million Therms			
Non-Generation Customers	33	36	37
Total Therms for Non-Generation Customers	7,999	8,953	8,938
Total CO2e Emissions for Non-Generation Customers	423,324	473,782	472,998
Total CO2 Emissions for Non-Generation Customers	422,925	473,335	472,552
Total N20 Emissions for Non-Generation Customers	248	278	277
Total CH4 Emissions for Non-Generation Customers	151	169	169
Tier 3 - Between 3 - 4.5 Million Therms			
Non-Generation Customers	21	19	17
Total Therms for Non-Generation Customers	7,292	6,616	6,265
Total CO2e Emissions for Non-Generation Customers	385,918	350,125	331,521
Total CO2 Emissions for Non-Generation Customers	385,554	349,795	331,208
Total N20 Emissions for Non-Generation Customers	226	205	194
Total CH4 Emissions for Non-Generation Customers	138	125	118
Tier 4 - Greater than 4.5 Million Therms			
Non-Generation Customers	62	59	61
Total Therms for Non-Generation Customers	103,316	107,968	114,165
Total CO2e Emissions for Non-Generation Customers	5,467,456	5,713,651	6,041,574
Total CO2 Emissions for Non-Generation Customers	5,462,300	5,708,263	6,035,877
Total N20 Emissions for Non-Generation Customers	3,203	3,347	3,539
Total CH4 Emissions for Non-Generation Customers	1,953	2,041	2,158

Pacific Gas and Electric Company
Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
83				
24				
	61,249	3,241,288		Aggregate of 10 customers grouped by volume
161				
16				
108				
28				
42				
39				
157				
15				
141				
52				
	12,220	646,692		Aggregate of 10 customers grouped by volume
63				
101				
75				
156				
69				
95				
6				
86				
78				
73				
	9,700	513,297		Aggregate of 10 customers grouped by volume
142				
10				
26				
61				
37				
36				
133				
32				
126				
96				
	7,366	389,830		Aggregate of 10 customers grouped by volume
62				
118				
119				
59				
125				
140				
89				
144				
31				
100				
	6,491	343,501		Aggregate of 10 customers grouped by volume
57				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
9				
94				
58				
131				
104				
3				
7				
77				
116				
	5,302	280,572		Aggregate of 10 customers grouped by volume
27				
152				
92				
34				
124				
30				
151				
117				
66				
5				
	4,091	216,512		Aggregate of 10 customers grouped by volume
14				
102				
22				
158				
153				
19				
17				
76				
148				
155				
	3,282	173,690		Aggregate of 10 customers grouped by volume
134				
129				
67				
143				
65				
51				
90				
47				
1				
2				
	2,877	152,275		Aggregate of 10 customers grouped by volume
91				
53				
150				
145				
81				
162				
46				
60				
79				
154				
	2,545	134,699		Aggregate of 10 customers grouped by volume
163				
68				

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 OAR MDth	Total 2004 OAR Emissions	NAICS CODING	NAICS Literal
21				
128				
44				
33				
50				
147				
4				
64				
	2,233	118,163		Aggregate of 10 customers grouped by volume
29				
45				
48				
49				
11				
43				
	1,251	66,180		Aggregate of last 6 customers by volume

Pacific Gas and Electric Company
Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
83				
24				
	69,664	3,686,595		Aggregate of 10 customers grouped by volume
16				
108				
39				
63				
28				
157				
42				
15				
52				
141				
	11,961	632,975		Aggregate of 10 customers grouped by volume
69				
144				
75				
156				
6				
101				
86				
10				
78				
140				
	9,053	479,078		Aggregate of 10 customers grouped by volume
61				
59				
36				
32				
96				
118				
133				
95				
126				
89				
	7,067	373,988		Aggregate of 10 customers grouped by volume
145				
125				
9				
62				
57				
77				
73				
94				
37				
31				
	5,818	307,914		Aggregate of 10 customers grouped by volume
152				

Pacific Gas and Electric Company
Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
131				
27				
142				
104				
120				
3				
116				
92				
100				
	4,848	256,557		Aggregate of 10 customers grouped by volume
34				
124				
30				
66				
5				
143				
151				
14				
153				
58				
	3,690	195,299		Aggregate of 10 customers grouped by volume
17				
19				
148				
155				
67				
134				
26				
2				
102				
22				
	3,066	162,260		Aggregate of 10 customers grouped by volume
7				
76				
65				
91				
158				
51				
47				
43				
117				
60				
	2,741	145,062		Aggregate of 10 customers grouped by volume
79				
150				
149				
44				
163				
164				
162				
90				
1				
53				
	2,549	134,890		Aggregate of 10 customers grouped by volume
48				
33				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2005 OAR MDth	Total 2005 OAR Emissions	NAICS Coding	NAICS Literal
128				
165				
129				
46				
81				
50				
68				
154				
	2,251	119,146		Aggregate of 10 customers grouped by volume
8				
35				
49				
21				
	828	43,794		Aggregate of last 4 customers grouped by volume

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
23				
114				
80				
115				
111				
132				
38				
56				
156				
83				
	73,104	3,868,652		Aggregate of 10 customers grouped by volume
16				
28				
42				
108				
157				
39				
63				
161				
69				
141				
	12,201	645,651		Aggregate of 10 customers grouped by volume
95				
52				
15				
75				
160				
145				
6				
101				
140				
78				
	9,765	516,771		Aggregate of 10 customers grouped by volume
10				
61				
59				
86				
36				
144				
126				
133				
125				
96				
	7,313	387,010		Aggregate of 10 customers grouped by volume
32				
118				
89				
77				
37				
73				
9				
21				
152				
62				
	6,158	325,863		Aggregate of 10 customers grouped by volume
94				
120				

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
57				
31				
27				
142				
3				
116				
143				
131				
	5,166	273,391		Aggregate of 10 customers grouped by volume
104				
100				
92				
5				
30				
158				
34				
124				
148				
14				
	4,169	220,642		Aggregate of 10 customers grouped by volume
151				
66				
102				
17				
67				
19				
164				
79				
134				
65				
	3,147	166,523		Aggregate of 10 customers grouped by volume
91				
51				
76				
150				
22				
153				
2				
81				
43				
162				
	2,703	143,035		Aggregate of 10 customers grouped by volume
44				
60				
48				
117				
53				
1				
154				
8				
12				
149				
	2,420	128,048		Aggregate of 10 customers grouped by volume
129				
33				
18				
47				

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2006 OAR MDth	Total 2006 OAR Emissions	NAICS CODING	NAICS Literal
7				
68				
128				
90				
46				
166				
	2,189	115,821		Aggregate of 10 customers grouped by volume
50				
35				
49				
25				
45				
	1,033	54,686		Aggregate of last 4 customers grouped by volume

Pacific Gas and Electric Company

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Random Customer Number	Total 2004 NGV MDth	Total 2005 NGV MDth	Total 2006 NGV MDth	NAICS CODING	NAICS Literal
	462	432	660		Aggregate of customers

Random Customer Number	Total 2004 NGV CO2 Emissions	Total 2005 NGV CO2 Emissions	Total 2006 NGV CO2 Emissions	NAICS CODING	NAICS Literal
	24,399	22,824	34,830		Aggregate of customers

Pacific Gas and Electric Company

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	2004	2005	2006
Total Cogen Customers*	212	190	190
Total Cogen Therms (MDth)	4,311	4,938	5,116
Total Cogen Emissions (MeTon)	228,153	261,317	270,733

* Under 2 million annual therms

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
1	20,000	76	26	27
20,001	40,000	31	25	25
40,001	60,000	21	26	25
60,001	80,000	12	14	7
80,001	100,000	6	14	8
100,001	120,000	6	8	5
120,001	140,000	7	2	8
140,001	160,000	2	6	8
160,001	180,000	1	5	3
180,001	200,000	2	7	5
200,001	220,000	3	2	7
220,001	240,000	2	2	5
240,001	260,000	3	2	4
260,001	280,000	3	4	2
280,001	300,000	-	3	3
300,001	320,000	3	2	3
320,001	340,000	1	5	2
340,001	360,000	-	1	3
360,001	380,000	1	2	3
380,001	400,000	-	2	1
400,001	420,000	2	-	1
420,001	440,000	-	2	3
440,001	460,000	-	1	2
460,001	480,000	1	-	-
480,001	500,000	1	-	-
500,001	520,000	1	1	-
520,001	540,000	1	2	1
540,001	560,000	1	-	-
560,001	580,000	2	-	-
580,001	600,000	-	-	-
600,001	620,000	2	-	2
620,001	640,000	1	1	1
640,001	660,000	-	-	1
660,001	680,000	-	2	2
680,001	700,000	-	2	2
700,001	720,000	1	-	-
720,001	740,000	-	-	1
740,001	760,000	-	-	1
760,001	780,000	-	2	-
780,001	800,000	-	-	-
800,001	820,000	-	-	-
820,001	840,000	-	1	-
840,001	860,000	-	-	1
860,001	880,000	-	-	-
880,001	900,000	-	-	-
900,001	920,000	1	2	-
920,001	940,000	-	-	-

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
940,001	960,000	-	-	1
960,001	980,000	-	2	1
980,001	1,000,000	-	1	-
1,000,001	1,020,000	1	-	1
1,020,001	1,040,000	-	1	-
1,040,001	1,060,000	-	-	-
1,060,001	1,080,000	-	-	-
1,080,001	1,100,000	-	1	1
1,100,001	1,120,000	-	1	1
1,120,001	1,140,000	1	-	-
1,140,001	1,160,000	1	-	-
1,160,001	1,180,000	-	-	-
1,180,001	1,200,000	-	1	2
1,200,001	1,220,000	1	1	2
1,220,001	1,240,000	-	1	-
1,240,001	1,260,000	-	-	-
1,260,001	1,280,000	2	1	1
1,280,001	1,300,000	2	1	-
1,300,001	1,320,000	1	-	1
1,320,001	1,340,000	-	-	-
1,340,001	1,360,000	1	1	-
1,360,001	1,380,000	-	-	-
1,380,001	1,400,000	-	-	-
1,400,001	1,420,000	-	-	-
1,420,001	1,440,000	-	-	1
1,440,001	1,460,000	-	-	-
1,460,001	1,480,000	2	-	-
1,480,001	1,500,000	-	-	-
1,500,001	1,520,000	1	-	-
1,520,001	1,540,000	-	-	1
1,540,001	1,560,000	-	-	-
1,560,001	1,580,000	-	-	-
1,580,001	1,600,000	-	-	-
1,600,001	1,620,000	-	-	-
1,620,001	1,640,000	-	-	1
1,640,001	1,660,000	-	-	-
1,660,001	1,680,000	-	-	-
1,680,001	1,700,000	-	1	1
1,700,001	1,720,000	-	-	-
1,720,001	1,740,000	-	1	1
1,740,001	1,760,000	1	-	-
1,760,001	1,780,000	2	-	1
1,780,001	1,800,000	1	1	-
1,800,001	1,820,000	-	-	-
1,820,001	1,840,000	1	-	1
1,840,001	1,860,000	-	-	-
1,860,001	1,880,000	-	-	-

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Therms		Customers		
From	To	2004	2005	2006
1,880,001	1,900,000	-	-	-
1,900,001	1,920,000	-	-	-
1,920,001	1,940,000	-	-	-
1,940,001	1,960,000	-	-	-
1,960,001	1,980,000	-	1	-
1,980,001	2,000,000	-	-	-
		212	190	190

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Category	2004	2005	2006
Tier 2			
Cogeneration Customers Between 2 - 3 Million Therms	7	3	5
Total Therms for Cogeneration Customers Between 2 -3 Million Therms (MDth)	1,853	696	1,193
Total Emissionsfor Cogeneration Customers Between 2 -3 Million Therms (MeTon)	98,052	36,859	63,119
Tier 3			
Cogeneration Customers Between 3 - 4.5 Million Therms	5	3	6
Total Therms for Cogeneration Customers Between 3 - 4.5 Million Therms (MDth)	1,760	1,077	1,500
Total Emissions for Cogeneration Customers Between 3 - 4.5 Million Therms (MeTon)	93,144	56,974	79,378
Tier 4			
Cogeneration Customers Greater than 4.5 Million Therms	30	33	32
Total Therms for Cogeneration Customers Greater than 4.5 Million Therms (MDth)	115,632	121,144	107,876
Total Emissions for Cogeneration Customers Greater than 4.5 Million Therms (MeTon)	6,119,215	6,410,927	5,708,806

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Random Customer Number	Total 2004 COG (MDth)	2004 Emissions (CO2 Mt)	NAICS CODING	NAICS Literal
113				
109				
80				
23				
127				
74				
135				
84				
146				
139				
	87,188	4,614,007		Aggregate of 10 customers grouped by volume
77				
110				
103				
142				
85				
115				
93				
99				
111				
75				
	19,233	1,017,790		Aggregate of 10 customers grouped by volume
88				
41				
97				
136				
123				
13				
55				
132				
70				
72				
	9,210	487,419		Aggregate of 10 customers grouped by volume
105				
54				
40				
130				
82				
106				
107				
98				
64				
20				
119				
12				
	3,613	191,196		Aggregation of last 12 customers grouped by volume

Pacific Gas and Electric Company

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Random Customer Number	Total 2005 COG (MDth)	2005 Emissions (CO2 Mt)	NAICS Coding	NAICS Literal
113				
80				
122				
109				
135				
74				
127				
23				
84				
103				
	90,672	4,798,371		Aggregate of 10 customers grouped by volume
139				
146				
115				
110				
142				
111				
85				
75				
93				
99				
	20,667	1,093,676		Aggregate of 10 customers grouped by volume
41				
123				
77				
138				
97				
132				
55				
88				
70				
120				
	8,417	445,431		Aggregate of 10 customers grouped by volume
72				
130				
20				
40				
54				
137				
64				
29				
98				
	3,161	167,281		Aggregate of last 9 customers grouped by volume

Pacific Gas and Electric Company

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Random Customer Number	Total 2006 COG (MDth)	2006 Emissions (CO2 Mt)	NAICS CODING	NAICS Literal
113				
80				
122				
109				
127				
74				
84				
23				
115				
135				
	80,270	4,247,896		Aggregate of 10 customers grouped by volume
111				
110				
146				
142				
139				
99				
75				
41				
85				
93				
	18,499	978,984		Aggregate of 10 customers grouped by volume
97				
88				
77				
123				
55				
138				
132				
70				
120				
130				
	8,162	431,912		Aggregate of 10 customers grouped by volume
72				
20				
87				
54				
40				
64				
137				
159				
103				
29				
112				
71				
106				
	4,342	229,780		Aggregate of last 13 customers grouped by volume

Pacific Gas and Electric Company

Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009

Wholesale Customer Name	2004 Volumes (MDth)	2005 Volumes (MDth)	2006 Volumes (MDth)
Total	3,749	3,651	3,786

Wholesale Customer Name	2004 Emissions (Mt)	2005 Emissions (Mt)	2006 Emissions (Mt)
Total	198,419	193,211	200,376

Pacific Gas and Electric Company
 Submitted in response to the 11/06/07 Data Request by the CPUC for Rulemaking 06-04-009
 Natural Gas Use and GHG Emissions Associated with Natural Gas Infrastructure within California for 2004, 2005, 2006

Ref #	LEAKAGE	Estimated or Actual Observations (if estimated refer to Data Sources by Ref # worksheet)	Estimated method approved by regulatory body	Reported to GHG Emissions Registry	2003 Mdth (if scaling method used)	Natural Gas Volumes Emitted/Burned			GHG Emissions		
						2004 Mdth	2005 Mdth	2006 Mdth	2004 MeTon CO2e	2005 MeTon CO2e	2006 MeTon CO2e
1	Distribution Leakage	Estimated	N/A	N/A		417.8	410.1	409.1	158,140	155,254	154,852
2	Transmission Leakage	Estimated	N/A	N/A		13.9	22.3	19.4	5,254	8,444	7,354
3	Distribution Dig-ins	Estimated	N/A	N/A		110.7	103.0	101.5	41,910	38,974	38,420
4	Transmission Dig-ins	Estimated	N/A	N/A		10.9	21.8	13.2	4,130	8,261	4,981
	UNMETERED COMPANY USAGE										
5	Pipeline Blow and Purge Gas	Estimated	N/A	N/A	66.8	74.4	66.0	65.5	28,146	24,972	24,814
6	Pneumatic Instrument Gas Usage - Station Valves	Estimated	N/A	N/A	2.6	2.9	2.6	2.6	1,102	977	971
7	Pneumatic Instrument Gas Usage - Instruments	Estimated	N/A	N/A	184.0	204.9	181.8	180.6	77,560	68,814	68,378
8	Distribution Meter and Regulator Station Blow and Purge	Estimated	N/A	N/A	1.3	1.4	1.3	1.3	540	479	476
9	Compressor Units' and Stations' Blow and Purge Gas	Estimated	N/A	N/A	79.7	88.8	78.8	78.3	33,614	29,823	29,634
10	Line 400/401 Turbine Starter Gas Usage	Estimated	N/A	N/A	18.0	20.0	17.7	17.6	7,571	6,717	6,675
11	Gas Drip Blow Down Operations	Estimated	N/A	N/A		0.4	0.4	0.4	151	151	151
12	Odorizer Stations' Blow and Vent Gas	Estimated	N/A	N/A		1.0	1.0	1.0	363	363	363
13	Dehydrator Stations' Blow and Purge Gas	Estimated	N/A	N/A		0.1	0.1	0.1	26	26	26
14	Gas Sampling Operations	Estimated	N/A	N/A		4.7	4.7	1.0	1,760	1,760	379
15	Distribution System Relief Valve Operations	Estimated	N/A	N/A		2.3	2.3	2.3	867	867	867
	GAS COMBUSTED										
16	Gas used for operations and/or flaring e.g. compr. fuel.	Metered Usage	N/A	N/A		5604.5	4072.9	5017.7	296,592	215,535	265,536

603,877

Notes

The weighted system average heating value of gas on the PG&E System in 2003 - 2005 was 1015 BTU/scf
 The weighted system average heating value of gas on the PG&E System in 2006 was 1020 BTU/scf
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2004 = 1.11356
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2005 = 0.98798
 Scaling Method Factors based on total annual natural gas throughput, 2003 to 2006 = 0.97692
 Description of natural gas quality specifications that must be met to transport natural gas on PG&E System = Gas Rule 21 [Gas Rule 21 hyperlink: http://www.pge.com/tariffs/pdf/GR21.pdf](http://www.pge.com/tariffs/pdf/GR21.pdf)
 CARB Emission Factor for stationary combustion of PG&E Gas = 52.9199 MeTon CO2e/MDth
 CO2e Emission Factor for fugitive emission of PG&E Gas = 378.5493 MeTon CO2e/MDth
 This calculation presented in "GHG Tons CO2 Calc" Worksheet

Pacific Gas and Electric Company
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Ref #	Source Category	Data Source and Reference
1	Distribution Leakage	The methodology for estimating the leakage in Mcf for each leak category is outlined in the "Unaccounted-for- Gas Project. Leak Task Force. Volume 4" report dated June, 1990. This project was co-funded by Gas Research Institute and assigned Report No. GRI-90/0067.6. The number of active leaks by year and by category has been extracted from the Integrated Gas Information System (IGIS).
2	Transmission Leakage	
3	Distribution Dig-ins	
4	Transmission Dig-ins	
5	Pipeline Blow and Purge Gas	This volume is calculated from the starting pressure and pipe volume for various Maintenance and Construction projects where significant volumes of gas were vented in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput
6	Pneumatic Instrument Gas Usage - Station Valves	This calculation is based on the number of gas powered valves, the estimated valve cycling frequency, and use per valve cycle for valves in service in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput
7	Pneumatic Instrument Gas Usage - Instruments	This calculation is based on the estimated annual usage by instrument type and the number of various instrument types in service in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
8	Distribution Meter and Regulator Station Blow and Purge	This value is calculated from the number of new business meter and regulator Installations, meter/reg changes, and meter/reg maintenance activities in 2003 and the estimated gas volume contained in the various sizes of meters. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
9	Compressor Units' and Stations' Blow and Purge Gas	This value is calculated by multiplying the estimated volume for each compressor and compressor station blow down and the frequency of these events in 2003. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
10	Line 400/401 Turbine Starter Gas Usage	This value is calculated by multiplying the number of turbine compressor starts in 2003 by 35 Mcf, the estimated usage by start, and then using a factor of 1.33 to account for unsuccessful start attempts. Data scaled for 2004 - 2006 based on total annual natural gas throughput.
11	Gas Drip Blow Down Operations	This value is calculated by multiplying the number of times that gas drips were blown down in 2003 to remove liquids, a total of 757 times, by the vented volume per blowdown; 0.52 Mcf per blow down. The value was assumed to be the same for the years, 2004, 2005, and 2006.
12	Odorizer Stations' Blow and Vent Gas	The estimated the injection pump usage amount plus the estimated annual amount of gas blown during storage tank refilling was calculated in 2004 for the year 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
13	Dehydrator Stations' Blow and Purge Gas	This value is calculated by multiplying the estimated average annual value per dehydrator unit, 18 Mcf per year, by the number of units in service in 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
14	Gas Sampling Operations	This value is calculated by multiplying the average annual usage volume per gas sampler type (spot, continuous, or gas chromatograph) by the number of units in service in 2003. The volume is estimated to be the same in 2004, 2005, and 2006.
15	Distribution System Relief Valve Operations	For the years 2004, 2005, and 2006 the number of malfunction events in which a distribution system relief valve operated were assumed to be approximately the same as in 1987 when a study of these events was completed. The total volume of gas released by relief valves operating in response to a system malfunction is approximately 2,120 Mcf per year.
16	Gas used for operations and/or flaring e.g. compr. fuel.	Calculations based on metered gas usage data in 2004, 2005, and 2006

Pacific Gas and Electric Company
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Gas used for operations and/or flaring e.g. compr. fuel. Ref 16

COMPANY GAS USE
MCF
2004 RECAP

DESCRIPTION	MCF 2004 USAGE
DEHYDRATORS	
Line 114	2,380
Millar Field	22
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	256
TRANSMISSION COMPRESSORS	
Burney	377,283
Delevan	1,468,796
Gerber	649,336
Tionesta	350,559
TRANSMISSION COMPRESSORS	
Hinkley	1,354,121
Kettleman	387,682
Topock	549,251
STORAGE COMPRESSORS	
Los Medanos - K-1	103,259
Mc Donald Island -K3-K6	187,129
Pleasant Creek - K8	6,951
AUXILIARY FUEL	
Burney	3,928
Delevan	362
Gerber	2,883
Tionesta	2,837
Kettleman	309
Los Medanos	129
DEHYDRATORS	
McDonald Island	44,243
Stanpac 4	14,533
Los Medanos Dehy 1	4,610
Los Medanos Dehy 2	2,574
Los Medanos Flair Fuel	8,170
TOTALS	5,521,711

BTU Conversion 1.015 BTU/scf
 Total Company Gas Use 5,522 MMCF
 Total Company Gas Use 5,605 MDth

COMPANY GAS USE
MCF
2005 RECAP

DESCRIPTION	MCF 2005 USAGE
DEHYDRATORS	
Line 114	1,590
Millar Field	0
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	1,158
TRANSMISSION COMPRESSORS	
Burney	186,242
Delevan	1,113,195
Gerber	108,242
Tionesta	43,800
TRANSMISSION COMPRESSORS	
Hinkley	1,100,300
Kettleman	426,008
Topock	632,733
STORAGE COMPRESSORS	
Los Medanos - K-1	104,571
Mc Donald Island -K3-K6	185,626
Pleasant Creek - K8	5,716
AUXILIARY FUEL	
Burney	3,010
Delevan	755
Gerber	1,248
Tionesta	2,101
Kettleman	399
Los Medanos	301
DEHYDRATORS	
McDonald Island	61,469
Stanpac 4	11,998
Los Medanos Dehy 1	6,522
Los Medanos Dehy 2	4,770
Los Medanos Flair Fuel	10,799
TOTALS	4,012,661

BTU Conversion 1.015 BTU/scf
 Total Company Gas Use 4,013 MMCF
 Total Company Gas Use 4,073 MDth

COMPANY GAS USE
MCF
2006 RECAP

DESCRIPTION	MCF 2006 USAGE
DEHYDRATORS	
Line 114	583
Millar Field	0
HEATERS	
Boron Tap	36
Ridgecrest Primary	36
West End Primary	36
Rio Vista Town heater	284
TRANSMISSION COMPRESSORS	
Burney	403,169
Delevan	1,120,251
Gerber	232,869
Tionesta	228,921
TRANSMISSION COMPRESSORS	
Hinkley	1,190,770
Kettleman	661,414
Topock	670,870
STORAGE COMPRESSORS	
Los Medanos - K-1	88,461
Mc Donald Island -K3-K6	185,370
Pleasant Creek - K8	7,117
AUXILIARY FUEL	
Burney	2,715
Delevan	1,255
Gerber	1,339
Tionesta	1,845
Kettleman	1,237
Los Medanos	161
DEHYDRATORS	
McDonald Island	92,725
Stanpac 4	7,092
Los Medanos Dehy 1	6,404
Los Medanos Dehy 2	2,049
Los Medanos Flair Fuel	12,307
TOTALS	4,919,316

BTU Conversion 1.02 BTU/scf
 Total Company Gas Use 4,919 MMCF
 Total Company Gas Use 5,018 MDth

Pacific Gas and Electric Company

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The following are typical gas compositions that compare in Btu to the system average Btu by year used for this report. Compositions will vary by time and source of gas.

The GHG emissions factors contained in the ARB Report have been used to calculate the GHG emissions impact in the Data Request worksheet and those factors are not likely to match the impact calculated from the gas compositions shown below.

Typical Gas Composition for 1015 Btu Gas

System average heating value for 2004 and 2005 was approximately 1015

96.31% Typical Percent Methane

1.27% Typical Percent Carbon Dioxide

Typical Gas Composition for 1020 Btu Gas

System average heating value for 2006 was approximately 1020

95.81% Typical Percent Methane

0.63% Typical Percent Carbon Dioxide

Date	09-Dec-97
BTU	1014.8
Sp_Gr	0.5808
N2	0.49%
C02	1.27%
Methane	96.31%
Ethane	1.61%
Propane	0.23%
I_Butane	0.03%
N_Butane	0.03%
I_Pentane	0.01%
N_Pentane	0.01%
C6	0.02%

Date	23-Feb-00
BTU	1020.2
Sp_Gr	0.5788
N2	0.96%
C02	0.63%
Methane	95.81%
Ethane	2.40%
Propane	0.15%
I_Butane	0.02%
N_Butane	0.02%
I_Pentane	0.01%
N_Pentane	0.01%
C6	0.01%

Adapted from factors compiled by Jack Dunlap

	Total Leakage mcf	Total CH4 mcf	Total Weight Methane Lbs	Methane CO Equivalent Metric Tn	Total CO2 mcf	Total Weight CO2 Metric Tn	Total CO2 Equiv Metric Tns
Total Methane	1,000	958	40,508	385.79	6	0.333	386.12

Source	Conversion Factors
CCAR March 2007, pg 84	Density of Methane 42.28 Lbs/mcf
	Lbs to Metric Ton 2205 Lbs/Metric Ton
IPCC 2nd Assess Report	CH4 to CO2 Equivalent (GWP) 21 Lbs-CO2/Lb-Methane
Part VI - Gas Composition	Pct Methane in Gas 95.81% Percent Methane in Natural Gas
Part VI - Gas Composition	Pct CO2 in Gas 0.63% Percent CO2 in Natural Gas
CCAR March 2007, pg 84	Density of CO2 115.97 Lbs/mcf
Part VI - Gas Composition	dth/mcf pipeline gas 1.02

MeTonCo2e/MMcf pipeline gas emissions 386.12
 MeTonCo2e/MDth pipeline gas emissions **378.55**

<http://www.climateregistry.org/docs/PROTOCOLS/GRP%20V2-March2007.pdf>

(END OF ATTACHMENT A)