ATTACHMENT C

SAN DIEGO GAS & ELECTRIC CO./SOUTHERN CALIFORNIA GAS CO.
GREENHOUSE GAS REGULATION – NATURAL GAS SECTOR
(R.06-04-009/CEC-07-OIIIP-1)
CPUC STAFF DATA REQUEST DATED 11-6-07

REDACTED

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.

2. The data requested is for end users and natural gas operations located within California.

3. The data requested is to be provided for the years 2004, 2005 and 2006. Data is to be shown for each year.

4. Natural gas volumes are to be reported in thousands of decatherms (MDth) and are to represent recorded deliveries to end users and wholesale customers.

5. Respondents are to calculate the GHG emissions using the factors contained in this publication, except as otherwise provided:

   California Air Resources Board, Staff Report: Initial Statement of Reasons for Rulemaking, Public Hearing to Consider, Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32), Release Date: October 19, 2007 (referred to herein as the "ARB Report").[1] See attached.

   GHG emissions factors contained in the ARB Report are to be used in the following manner in the other parts of this data request:

      Except for the uses of natural gas for transportation purposes, use the default GHG emissions factors contained in the ARB Report, Regulation Appendix page A-5 and Regulation Appendix page A-8. Use the default factor for CO_2 that corresponds to the heat content of the natural gas supplied by your entity.

      For transportation uses of natural gas, use the GHG emissions factors contained in the ARB Report, Regulation Appendix page A-9.

Report GHG emissions in metric tons.

6. For the purposes of calculating GHG emissions in Part II, Part III and Part IV assume all delivered volumes of natural gas are combusted.

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[1] Go to: http://www.arb.ca.gov/regact/2007/ghg2007/isor.pdf.

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7. Describe any assumptions relied upon in support of your responses.

8. Responses are to be provided in hard copy, PDF and Excel spreadsheet format (reveal formulas in spreadsheet cells used to calculate reported values).

Contact Information:

Name: Loan Nguyen
Title: Project Manager
Entity Name: Southern California Gas/San Diego Gas & Electric
Phone: (213) 244-3606
Email: lnguyen@semprautilities.com

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

QUESTION NO. 1:

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.
Residential customers are defined as those customers that are provided service under residential rate schedules in the respondent's utility tariffs as approved by the CPUC or other government agency. Include data for end users whose natural gas is either utility procured or procured by another entity (e.g., core aggregator).

Natural gas deliveries and GHG emissions data for residential customers is to be reported on an aggregated basis including total number of customers, total natural gas volumes, and total emissions. Identify the tariff rates schedules used to determine the residential customer data reported.

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

For cogeneration and combined heat and power end users, only include natural gas volumes not used for the production of electricity.

Data for non-residential end users are to be stratified using the following tiers based on the specified volume of natural gas deliveries.

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.

Include statistics showing the range of values, median, and mean. Provide a histogram showing the number of customers at each increment of 20,000 therms delivered per year.

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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).

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.[2]

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

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).

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.

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).

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.

[2] Go to: http://www.census.gov/epcd/www/naics.html.

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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.

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).

RESPONSE NO. 1

The number of customers, volumes of natural gas delivered and associated GHG emissions for 2004, 2005 and 2006 for SoCalGas and SDG&E are shown in attached files *Part2Redacted_SCG.xls* and *Part2Redacted_SDGE.xls*.

a) Residential end users

For SoCalGas, residential customers are billed at tariffs GR, GS, GM, GRL, GSL, and GML. For SDG&E, residential customers are billed at tariffs GR, G-CARE, GS, and GM. Residential data can be found in tab *Residential*.

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 non-residential data can be found in tab *NonResTier1*. Since the CPUC did not specify which variable SoCalGas/SDG&E should "include statistics showing the range of values, median, and mean", SoCalGas assumes the statistics are for the customer annual usage in therms.

ii) Tier 2 non-residential end users (< 2 million to < 3 million therms):
Tier 2 non-residential data can be found in tab *NonResTier2*. Due to the confidentiality of customer information, natural gas delivery and GHG emissions data by NAICS codes are aggregated to the 2-digit level for SoCalGas and to all customers for SDG&E.

iii) Tier 3 non-residential end users (< 3 million to < 4.5 million therms):
Tier 3 non-residential data can be found in tab *NonResTier3*. Due to the confidentiality of customer information, natural gas delivery and GHG

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emissions data by NAICS codes are aggregated to the 2-digit level for SoCalGas and to all customers for SDG&E.

iv) Tier 4 non-residential end users (4.5 million or more therms):
Tier 3 non-residential data can be found in tab *NonResTier4*. Due to the confidentiality of customer information, natural gas delivery and GHG emissions data by NAICS codes are aggregated to the 2-digit level for SoCalGas and to all customers for SDG&E.

In order to estimate CH_4 and N_2O emission of natural gas vehicles, SoCalGas and SDG&E made several assumptions on Btu to gallons of gasoline energy equivalent, mileage and proportion of natural gas delivered to passenger cars, light-duty trucks and heavy-duty trucks. These assumptions are shown in each respective tab of the attached spreadsheet.

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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)

QUESTION NO. 1:

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

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.

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.

RESPONSE NO. 1:

The number of customers, volumes of natural gas delivered and associated GHG emissions for 2004, 2005 and 2006 for SoCalGas and SDG&E are shown in attached file *Part2Redacted_SCG.xls* and *Part2Redacted_SDGE.xls.* Due to the confidentiality of customer information, natural gas delivery and GHG emissions data for customers using 2 million therms or more per year are aggregated to the 2-digit NAICS level for SoCalGas and to all customers for SDG&E.

Data for end users under 2 millions therms per year and end users using 2 million or more therms per year are in tabs < *2 MM Therms* and >= *2 MM Therms.* All of these volumes are for the generation of electricity based on billing records.

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

QUESTION NO. 1:

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.

RESPONSE NO. 1:

The volumes of natural gas deliveries to wholesale customers in California and associated GHG emissions for 2004, 2005 and 2006 for SoCalGas are shown in attached file *Part4Redacted.xls*. SDG&E does not have any wholesale customers.

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REDACTED

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)

QUESTION NO. 1:

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 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.

RESPONSE NO. 1:

SoCalGas estimates, based on its knowledge of customers' end use equipment gained from discussions with customers and industry literature, that the following customers use natural gas as a feedstock for hydrogen production from a steam methane reforming process as shown in the attached file *Part5Redacted.xls*.

The consumption values in the attached Excel file represent natural gas delivered from SoCalGas only. They do not include an unknown amount of refinery produced and consumed gas that could also be used for steam methane reforming feedstock and/or combusted. Some of these facilities capture CO_2 from the steam methane reforming process for CO_2 product sales; however, we do not have any additional or specific information about the CO_2 capture.

Besides end-users who use natural gas as feedstock for hydrogen production, there are others who use gas as feedstock for other applications such as heat treatment or composite material manufacturing. However, both SoCalGas and SDG&E do not keep track of these volumes and unable to estimate the amount of feedstock for other commercial and industrial applications.

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REDACTED

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

QUESTION NO. 1:

For the reported data under this part, identify whether reported data are based on actual observation or are estimated. 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. Identify values that were reported to a GHG emissions registry, include the name of the registry.

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.

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.

Include a description of natural gas quality specifications that must be met to transport natural gas on your system. Submit applicable effective tariff sheets.

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

RESPONSE NO. 1:

The volumes of gas used for company operations and leakage are shown in file *Part6Redacted.xls*. Gas use for company operations are based on actual observation and in tab *Company Use*. The types of equipment include fuel compressors for transmission and storage, space and water heating at company facilities, NGV fleet and maintenance.

Gas volumes that are unintentionally released are in tab *Fugitive*. Fugitive gas or leakage in 2006 is actual data from a Lost and Unaccounted-For Study prepared in 2007. Leakage volumes in 2004 and 2005 were estimated from a ratio of 2006 actual leakage to total delivered volume. Natural gas that is unintentionally released is pipeline quality gas, and it is approximately 95.4% methane per testimony of Larry Sasadeusz in R.04-01-025 file on January 22, 2004

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Gas delivered into Southern California Gas Company's must meet the quality specification at the time of delivery. Attached is Rule No. 30 that describes the general terms and conditions applicable whenever SoCalGas transports customer-owned gas over its system.

Attached are all reports that were submitted to the California Climate Action Registry.

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REDACTED

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

QUESTION NO. 1:

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.

RESPONSE NO. 1:

SoCalGas—In SoCalGas' service area, we experienced calendar year HDD totals of 1382, 1227 and 1422, respectively for years 2004, 2005 and 2006. The HDD total for an average year is 1386 HDD and for a cold year is 1708 HDD. These values were calculated from 20 years of data from 1983 through 2002 as described in the following ".pdf" file previously submitted as part of SoCalGas' work papers for the 2006 California Gas Report.

Qualitatively, year 2004 was essentially a year with average HDDs, year 2005 was a "warmer than average" year and year 2006 was a "colder than average" year. Because of the significant dependence of SoCalGas' core load on gas used for space heating purposes, SoCalGas' HDD-adjusted usage for 2004 would be much the same as recorded natural gas usage in 2004; for 2005 SoCalGas' HDD-adjusted usage would be *greater* than its recorded usage in 2005; and, for 2006 SoCalGas' HDD-adjusted usage would be *lower* than its recorded usage in 2006.

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RESPONSE NO. 1 (continued):

SDG&E—In SDG&E's service area, we experienced calendar year HDD totals of 1234, 1111 and 1370, respectively for years 2004, 2005 and 2006. The HDD total for an average year is 1298 HDD and for a cold year is 1675 HDD. These values were calculated from 20 years of data from 1983 through 2002 as described in the following ".pdf" file previously submitted as part of SDG&E's work papers for the 2006 California Gas Report.

Qualitatively, year 2004 was warmer-than-average, but still fairly close to a year wiith average HDDs, year 2005 was clearly a "warmer than average" year and year 2006 was a "colder than average" year. Because of the significant dependence of SDG&E's core load on gas used for space heating purposes, SDG&E's HDD-adjusted usage for 2004 would be *somewhat greater* than its recorded natural gas usage in 2004; for 2005 SDG&E's HDD-adjusted usage would be *greater* than its recorded usage in 2005; and, for 2006 SDG&E's HDD-adjusted usage would be *lower* than its recorded usage in 2006.

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Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1a - Residential End Users
REDACTED

	2004	2005	2006	
# Customers	5,219,138	5,292,414	5,367,886	Customers (* Refer to footnote below)
Volumes	262,406	247,402	254,928	Delivered volume in MDth
CO_2	13,873,405	13,080,144	13,478,043	Metric Tonnes
CH_4	236	223	229	Metric Tonnes
N_2O	26	25	25	Metric Tonnes

Footnote:

* # of customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

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Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1a - Residential End Users
REDACTED

	2004	2005	2006	
# Customers	781,911	793,658	802,172	Customers
Volumes	33,954	31,754	31,815	Delivered volume in MDth
CO_2	1,795,122	1,678,839	1,682,085	Metric Tonnes
CH_4	31	29	29	Metric Tonnes
N_2O	3	3	3	Metric Tonnes

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Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1bi - Non-Residential End Users (< 2 Millions Therms per Year) - Do Not Include Data for the Generation of Electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers[1]	268	284	28	Customers (Refer to footnote below)
Volumes	821	908	1,004	Delivered volume in MDth
CO_2	43,349	47,942	53,011	Metric Tonnes
CH_4	108	119	132	Metric Tonnes
N_2O	2	2	2	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4			N_2O		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000	17.82	0%	0	0	0	0	0	0
Ligh-Duty Trucks	125,000	17.82	3%	0	0	0	0	0	0
Heavy-Duty Trucks	139,000	5.401	97%	108	119	132	2	2	2

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers	30,143	30,272	30,238	Customers
Volumes	20,120	20,070	19,676	Delivered volume in MDth
CO_2	1,063,768	1,061,126	1,040,255	Metric Tonnes
CH_4	957	955	936	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

Consumption Range (Therm		Number of Customers		
		2004	2005	2006
0	20,000	28,525	28,644	28,602
20,001	40,000	899	915	911
40,001	60,000	245	243	267
60,001	80,000	110	109	103
80,001	100,000	73	77	72
100,001	120,000	40	37	48
120,001	140,000	43	35	31
140,001	160,000	29	31	32
160,001	180,000	23	26	28
180,001	200,000	17	20	17
200,001	220,000	19	13	13
220,001	240,000	5	12	13
240,001	260,000	14	8	10
260,001	280,000	7	16	5
280,001	300,000	5	4	6

300,001	320,000	8	7	9
320,001	340,000	10	8	6
340,001	360,000	5	8	5
360,001	380,000	6	5	6
380,001	400,000	6	2	5
400,001	420,000	4	3	4
420,001	440,000	3	3	5
440,001	460,000	3	2	2
460,001	480,000	1	2	3
480,001	500,000	1	1	1
500,001	520,000	3	3	1
520,001	540,000	2	2	2
540,001	560,000	0	3	1
560,001	580,000	4	1	1
580,001	600,000	1	0	0
600,001	620,000	1	1	5
620,001	640,000	1	0	2
640,001	660,000	4	2	1
660,001	680,000	0	1	1
680,001	700,000	2	3	1
700,001	720,000	1	1	3
720,001	740,000	3	1	1
740,001	760,000	0	1	1
760,001	780,000	2	1	0
780,001	800,000	2	2	0
800,001	820,000	0	1	1
820,001	840,000	0	1	1
840,001	860,000	1	0	0
860,001	880,000	1	1	1
880,001	900,000	1	1	0
900,001	920,000	0	0	0
920,001	940,000	1	0	0
940,001	960,000	1	0	2
960,001	980,000	0	0	0
980,001	1,000,000	0	0	0
1,000,001	1,020,000	1	0	0
1,020,001	1,040,000	0	0	0
1,040,001	1,060,000	0	1	0
1,060,001	1,080,000	0	0	1
1,080,001	1,100,000	0	1	0
1,100,001	1,120,000	1	2	0
1,120,001	1,140,000	0	0	0
1,140,001	1,160,000	0	1	1
1,160,001	1,180,000	0	0	2
1,180,001	1,200,000	0	1	1
1,200,001	1,220,000	1	0	0
1,220,001	1,240,000	0	2	0
1,240,001	1,260,000	1	1	0
1,260,001	1,280,000	0	0	0
1,280,001	1,300,000	2	0	0
1,300,001	1,320,000	0	0	0
1,320,001	1,340,000	0	0	0
1,340,001	1,360,000	0	0	0

1,360,001	1,380,000	0	0	0
1,380,001	1,400,000	0	0	0
1,400,001	1,420,000	1	0	1
1,420,001	1,440,000	0	2	0
1,440,001	1,460,000	0	0	0
1,460,001	1,480,000	0	1	0
1,480,001	1,500,000	0	0	1
1,500,001	1,520,000	0	1	1
1,520,001	1,540,000	0	0	0
1,540,001	1,560,000	1	0	0
1,560,001	1,580,000	1	0	0
1,580,001	1,600,000	0	1	0
1,600,001	1,620,000	0	0	0
1,620,001	1,640,000	0	0	0
1,640,001	1,660,000	0	0	0
1,660,001	1,680,000	0	0	0
1,680,001	1,700,000	1	0	0
1,700,001	1,720,000	0	0	0
1,720,001	1,740,000	0	0	0
1,740,001	1,760,000	0	0	0
1,760,001	1,780,000	0	0	0
1,780,001	1,800,000	0	0	0
1,800,001	1,820,000	0	0	0
1,820,001	1,840,000	0	0	0
1,840,001	1,860,000	0	1	0
1,860,001	1,880,000	1	0	0
1,880,001	1,900,000	0	0	0
1,900,001	1,920,000	0	0	0
1,920,001	1,940,000	0	0	0
1,940,001	1,960,000	0	0	1
1,960,001	1,980,000	0	0	0
1,980,001	2,000,000	0	0	0

Note:
[1] In April 2006, the old card system was replaced. Customers no longer had fuel cards to dispense fuel at company stations. And, billing no longer billed the customers.
Instead a credit card reader system was installed to parallel SCG's company stations. So, instead of about 250 customers being billed directly, you have three company station sites where direct billing occurs.

Statistics on Customer Annual Usage in Therms

	2004	2005	2006	
Minimum	0	0	0	Therms per Year
Maximum	1,876,068	1,844,630	1,945,482	Therms per Year
Median	417	369	425	Therms per Year
Mean	6,672	6,628	6,484	Therms per Year

Note:
Since the CPUC did not specify which variable SDG&E should "include statistics showing the range of values, median, and mean", SDG&E assumes the statistics are for the customer annual usage.

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Qbii - Tier 2 Non-Residential End Users (2 Million to < 3 Million Therms per Year) - Do not include data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	0	0	0	Customers
Volumes	0	0	0	Delivered volume in MDth
CO_2	0	0	0	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4			N_2O		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000			0	0	0	0	0	0
Ligh-Duty Trucks	125,000			0	0	0	0	0	0
Heavy-Duty Trucks	139,000			0	0	0	0	0	0

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers[1]				Customers (Refer to footnote below)
Volumes	746	988	1,311	Delivered volume in MDth
CO_2	39,423	52,248	69,314	Metric Tonnes
CH_4	1	1	1	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Number of Customers[1]			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
All Customers				746	988	1,311	39,423	52,248	69,314	1	1	1	0	0	0

Footnote:

[1] For some customers with combined GCORE or MULTI rates, the delivered volumes serve both EG and non-EG loads. To avoid double counting customer count, the customer is counted only once in the segment with the higher volume.

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1biii - Tier 2 Non-Residential End Users (3 Million to < 4.5 Million Therms per Year) - Do not include data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	0	0	0	Customers (* Refer to footnote below)
Volumes	0	0	0	Delivered volume in MDth
CO_2	0	0	0	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4			N_2O		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000			0	0	0	0	0	0
Ligh-Duty Trucks	125,000			0	0	0	0	0	0
Heavy-Duty Trucks	139,000			0	0	0	0	0	0

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers[1]				Customers (* Refer to footnote below)
Volumes	0	0	398	Delivered volume in MDth
CO_2	0	0	21,041	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Number of Customers[1]			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
All Customers				0	0	398	0	0	21,041	0	0	0	0	0	0

Footnote:
[1] For some customers with combined GCORE or MULTI rates, the delivered volumes serve both EG and non-EG loads.
To avoid double counting customer count, the customer is counted only once in the segment with the higher volume.

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1biv - Tier 2 Non-Residential End Users (>= 4.5 Million Therms per Year) - Do not included data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	0	0	0	Customers
Volumes	0	0	0	Delivered volume in MDth
CO_2	0	0	0	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4			N_2O		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000			0	0	0	0	0	0
Ligh-Duty Trucks	125,000			0	0	0	0	0	0
Heavy-Duty Trucks	139,000			0	0	0	0	0	0

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers[1]				Customers (Refer to footnote below)
Volumes	518	454	460	Delivered volume in MDth
CO_2	27,379	24,013	24,318	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Number of Customers[1]			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
All Customers				518	454	460	27,379	24,013	24,318	0	0	0	0	0	0

Footnote:

[1] For some customers with combined GCORE or MULTI rates, the delivered volumes serve both EG and non-EG loads.
To avoid double counting customer count, the customer is counted only once in the segment with the higher volume.

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
REDACTED
This tab is used as inputs for calculating GHG Emission

Emission Factors by Mobile Sources (e.g., natural gas vehicles)

	Passengers Cars	Ligh-Duty Trucks	Heavy Duty Trucks	Overall
CO_2 Emission Factor (Kg/therm)				5.28
CH_4 Emission Factor (g/mile)	0.04	0.05	3.48	
N_2O Emission Factor (g/mile)	0.04	0.06	0.05	

Emission Factors at Stationary Sources

	Overall
CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

Assumption for Estimating CH_2 and N_2O Emission for Natural Gas Vehicles from Energy Unit

1 Therm = 0.8000 Gallon x 24 Mile/Gallon x 0.04 Gram/Mile = 1 Gram = 0 Tonnes

Where gasoline in California is standardized at 125,000 Btu/Gallon for standard engines and 139,000 Btu/Gallon for large engines.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1bi - Non-Residential End Users (< 2 Millions Therms per Year) - Do Not Include Data for the Generation of Electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	173	184	199	Customers (* Refer to footnote below)
Volumes	1,707	1,909	2,156	Delivered volume in MDth
CO_2	90,130	100,795	113,837	Metric Tonnes
CH_4	143	160	181	Metric Tonnes
N_2O	8	9	10	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000	17.82	0%	0	0	0	0	0	0
Ligh-Duty Trucks	125,000	17.82	40%	5	5	6	6	7	7
Heavy-Duty Trucks	139,000	5.401	60%	138	155	175	2	2	3

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers	238,483	236,976	236,392	Customers (* Refer to footnote below)
Volumes	146,575	143,941	144,404	Delivered volume in MDth
CO_2	7,749,420	7,610,161	7,634,639	Metric Tonnes
CH_4	6,974	6,849	6,871	Metric Tonnes
N_2O	1	1	1	Metric Tonnes

Consumption Range (Therm		Number of Customers *		
		2004	2005	2006
0	20,000	228,030	226,742	226,133
20,001	40,000	5,795	5,709	5,767
40,001	60,000	1,525	1,491	1,476
60,001	80,000	726	699	692
80,001	100,000	477	441	419
100,001	120,000	302	273	291
120,001	140,000	168	191	210
140,001	160,000	149	158	133
160,001	180,000	110	117	115
180,001	200,000	108	102	104
200,001	220,000	90	75	72

220,001	240,000	69	74	67
240,001	260,000	73	66	67
260,001	280,000	66	69	72
280,001	300,000	55	62	55
300,001	320,000	57	41	53
320,001	340,000	37	39	43
340,001	360,000	39	35	37
360,001	380,000	37	35	35
380,001	400,000	27	31	33
400,001	420,000	30	30	20
420,001	440,000	25	25	29
440,001	460,000	26	19	18
460,001	480,000	17	26	19
480,001	500,000	26	22	16
500,001	520,000	17	18	23
520,001	540,000	16	15	15
540,001	560,000	21	15	13
560,001	580,000	22	12	19
580,001	600,000	13	18	11
600,001	620,000	14	12	19
620,001	640,000	20	9	12
640,001	660,000	15	12	16
660,001	680,000	11	15	10
680,001	700,000	14	9	13
700,001	720,000	11	8	16
720,001	740,000	13	12	11
740,001	760,000	11	11	10
760,001	780,000	16	13	7
780,001	800,000	9	15	8
800,001	820,000	9	7	10
820,001	840,000	4	13	13
840,001	860,000	7	9	15
860,001	880,000	11	13	6
880,001	900,000	6	5	8
900,001	920,000	8	6	6
920,001	940,000	9	8	6
940,001	960,000	4	3	7
960,001	980,000	12	8	3
980,001	1,000,000	2	6	7
1,000,001	1,020,000	5	3	3
1,020,001	1,040,000	6	10	7
1,040,001	1,060,000	8	5	6
1,060,001	1,080,000	6	4	1
1,080,001	1,100,000	0	3	5
1,100,001	1,120,000	3	8	2
1,120,001	1,140,000	3	2	9
1,140,001	1,160,000	2	8	6
1,160,001	1,180,000	1	2	4
1,180,001	1,200,000	9	2	3

1,200,001	1,220,000	2	1	8
1,220,001	1,240,000	2	3	6
1,240,001	1,260,000	3	3	3
1,260,001	1,280,000	3	3	1
1,280,001	1,300,000	2	5	2
1,300,001	1,320,000	4	1	1
1,320,001	1,340,000	2	8	3
1,340,001	1,360,000	4	0	3
1,360,001	1,380,000	2	4	0
1,380,001	1,400,000	2	3	4
1,400,001	1,420,000	3	3	7
1,420,001	1,440,000	2	1	1
1,440,001	1,460,000	5	1	3
1,460,001	1,480,000	1	1	3
1,480,001	1,500,000	4	4	0
1,500,001	1,520,000	4	1	3
1,520,001	1,540,000	4	2	0
1,540,001	1,560,000	2	1	2
1,560,001	1,580,000	4	1	2
1,580,001	1,600,000	2	4	3
1,600,001	1,620,000	2	5	2
1,620,001	1,640,000	2	2	4
1,640,001	1,660,000	2	0	1
1,660,001	1,680,000	0	2	1
1,680,001	1,700,000	2	1	2
1,700,001	1,720,000	2	1	1
1,720,001	1,740,000	0	0	2
1,740,001	1,760,000	3	1	0
1,760,001	1,780,000	0	1	1
1,780,001	1,800,000	1	2	1
1,800,001	1,820,000	0	1	5
1,820,001	1,840,000	1	3	1
1,840,001	1,860,000	0	3	1
1,860,001	1,880,000	4	2	1
1,880,001	1,900,000	1	1	1
1,900,001	1,920,000	0	2	2
1,920,001	1,940,000	1	3	1
1,940,001	1,960,000	0	2	2
1,960,001	1,980,000	1	2	1
1,980,001	2,000,000	2	1	1

Footnote:

* # of Customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

Statistics on Customer Annual Usage in Therms

	2004	2005	2006	
Minimum	0	0	0	Therm
Maximum	2,000,000	2,000,000	2,000,000	Therm
Median	419	371	392	Therm

Mean	6,146	6,074	6,109	Therm

Note:
Since the CPUC did not specify which variable SoCalGas should "include statistics showing the range of values, median, and mean", SoCalGas assumes the statistics are for the customer annual usage.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Qbii - Tier 2 Non-Residential End Users (2 Million to < 3 Million Therms per Year) - Do not include data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	1	0	0	Customers (* Refer to footnote below)
Volumes	228	0	0	Delivered volume in MDth
CO_2	12,038	0	0	Metric Tonnes
CH_4	31	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000	17.82	0%	0	0	0	0	0	0
Ligh-Duty Trucks	125,000	17.82	0%	0	0	0	0	0	0
Heavy-Duty Trucks	139,000	5.401	100%	31	0	0	0	0	0

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers				Customers (* Refer to footnote below)
Volumes	11,995	11,611	9,801	Delivered volume in MDth
CO_2	634,199	613,874	518,179	Metric Tonnes
CH_4	11	10	9	Metric Tonnes
N_2O	1	1	1	Metric Tonnes

	Number of Customers *			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
NAICS	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
11				0	545	0	0	28,814	0	0	0	0	0	0	0
21				0	0	0	0	0	0	0	0	0	0	0	0
22				0	0	0	0	0	0	0	0	0	0	0	0
23				0	0	0	0	0	0	0	0	0	0	0	0
31				3,602	3,146	2,420	190,413	166,329	127,945	3	3	2	0	0	0
32				2,659	2,463	3,290	140,596	130,219	173,942	2	2	3	0	0	0
33				2,848	2,966	1,386	150,551	156,812	73,278	3	3	1	0	0	0
42				0	0	0	0	0	0	0	0	0	0	0	0
44				0	0	0	0	0	0	0	0	0	0	0	0
45				0	0	0	0	0	0	0	0	0	0	0	0
48				223	205	222	11,813	10,838	11,737	0	0	0	0	0	0

49	[redacted]	0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
61		770	539	329	40,693	28,497	17,394	1	0	0	0	0	0
62		960	950	1,233	50,761	50,227	65,189	1	1	1	0	0	0
71		0	0	0	0	0	0	0	0	0	0	0	0
72		0	0	0	0	0	0	0	0	0	0	0	0
81		0	0	0	0	0	0	0	0	0	0	0	0
92		934	797	921	49,372	42,137	48,693	1	1	1	0	0	0

Footnote:

* # of Customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1biii - Tier 2 Non-Residential End Users (3 Million to < 4.5 Million Therms per Year) - Do not include data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	5	5	4	Customers (* Refer to footnote below)
Volumes	1,826	1,959	1,179	Delivered volume in MDth
CO_2	9,641	10,344	6,225	Metric Tonnes
CH_4	247	265	159	Metric Tonnes
N_2O	4	4	2	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000	17.82	0%	0	0	0	0	0	0
Ligh-Duty Trucks	125,000	17.82	0%	0	0	0	0	0	0
Heavy-Duty Trucks	139,000	5.401	100%	247	265	159	4	4	2

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers				Customers (* Refer to footnote below)
Volumes	11,587	11,982	12,966	Delivered volume in MDth
CO_2	612,605	633,488	685,512	Metric Tonnes
CH_4	10	11	12	Metric Tonnes
N_2O	1	1	1	Metric Tonnes

	Number of Customers *			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
NAICS	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
11				748	0	657	39,547	0	34,736	1	0	1	0	0	0
21				2,192	1,820	1,529	115,891	96,223	80,838	2	2	1	0	0	0
22				433	407	401	22,893	21,518	21,201	0	0	0	0	0	0
23				0	0	0	0	0	0	0	0	0	0	0	0
31				2,911	3,610	3,994	153,905	190,861	211,163	3	3	4	0	0	0
32				1,401	2,212	2,558	74,071	116,948	135,241	1	2	2	0	0	0
33				2,556	2,284	2,160	135,136	120,755	114,199	2	2	2	0	0	0
42				0	307	0	0	16,231	0	0	0	0	0	0	0
44				0	0	0	0	0	0	0	0	0	0	0	0
45				0	0	0	0	0	0	0	0	0	0	0	0
48				0	0	0	0	0	0	0	0	0	0	0	0

49	[redacted]	0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
61		311	643	967	16,443	33,995	51,125	0	1	1	0	0	0
62		378	359	368	19,985	18,980	19,456	0	0	0	0	0	0
71		351	340	0	18,557	17,976	0	0	0	0	0	0	0
72		0	0	0	0	0	0	0	0	0	0	0	0
81		0	0	0	0	0	0	0	0	0	0	0	0
92		306	0	332	16,178	0	17,553	0	0	0	0	0	0

Footnote:

* # of Customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part II. Natural gas use and GHG emissions by end users for each year 2004, 2005 and 2006
Q1biv - Tier 2 Non-Residential End Users (>= 4.5 Million Therms per Year) - Do not included data for the generation of electricity
REDACTED

Gas Use by Mobile Sources (e.g., natural gas vehicles)

	2004	2005	2006	
# Customers	5	6	8	Customers (* Refer to footnote below)
Volumes	2,655	3,176	4,404	Delivered volume in MDth
CO_2	14,018	16,769	23,253	Metric Tonnes
CH_4	359	429	596	Metric Tonnes
N_2O	5	6	9	Metric Tonnes

	Assumptions on natural gas vehicles			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	BTU/Gallon	Mileage	% NGV Load	2004	2005	2006	2004	2005	2006
Passengers Cars	125,000	17.82	0%	0	0	0	0	0	0
Ligh-Duty Trucks	125,000	17.82	0%	0	0	0	0	0	0
Heavy-Duty Trucks	139,000	5.401	100%	359	429	596	5	6	9

Assumptions on NGV

1. All heavy-duty vehicles were placed in the heavy duty trucks category. This includes vehicles such as transit buses, school buses, and refuse haulers.
2. The mileage per gallon for heavy duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "HHDT-TOT".
3. All other vehicles were placed in the light-duty trucks category since most light-duty NGVs are used in municipal fleets, taxi fleets, shuttle fleets, and are not passenger vehicles.
4. The mileage per gallon for light duty trucks was derived from the CARB 2007 EMFAC model and referenced the vehicle classification entitled "LDT2-CAT".

Gas Use at Stationary Sources (Exclude NGV volumes)

	2004	2005	2006	
# Customers				Customers (* Refer to footnote below)
Volumes	104,480	101,837	107,606	Delivered volume in MDth
CO_2	5,523,858	5,384,122	5,689,129	Metric Tonnes
CH_4	94	92	97	Metric Tonnes
N_2O	10	10	11	Metric Tonnes

	Number of Customers *			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
NAICS	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
11				0	0	0	0	0	0	0	0	0	0	0	0
21				13,299	13,465	15,179	703,118	711,895	802,514	12	12	14	1	1	2
22				0	0	0	0	0	0	0	0	0	0	0	0
23				0	0	0	0	0	0	0	0	0	0	0	0
31				10,547	7,465	7,811	557,620	394,675	412,968	9	7	7	1	1	1
32				72,915	73,476	75,946	3,855,016	3,884,676	4,015,265	66	66	68	7	7	8
33				6,961	6,539	7,080	368,028	345,717	374,320	6	6	6	1	1	1
42				0	0	0	0	0	0	0	0	0	0	0	0
44				0	0	0	0	0	0	0	0	0	0	0	0
45				0	0	0	0	0	0	0	0	0	0	0	0
48				0	0	0	0	0	0	0	0	0	0	0	0

49	[redacted]	0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		538	496	454	28,444	26,224	24,003	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
61		220	396	673	11,631	20,937	35,582	0	0	1	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0	0
71		0	0	101	0	0	5,340	0	0	0	0	0	0
72		0	0	362	0	0	19,139	0	0	0	0	0	0
81		0	0	0	0	0	0	0	0	0	0	0	0
92		0	0	0	0	0	0	0	0	0	0	0	0

Footnote:

* # of Customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
REDACTED
This tab is used as inputs for calculating GHG Emission

Emission Factors by Mobile Sources (e.g., natural gas vehicles)

	Passengers Cars	Ligh-Duty Trucks	Heavy Duty Trucks	Overall
CO_2 Emission Factor (Kg/therm)				5.28
CH_4 Emission Factor (g/mile)	0.04	0.05	3.48	
N_2O Emission Factor (g/mile)	0.04	0.06	0.05	

Emission Factors at Stationary Sources

	Overall
CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

Assumption for Estimating CH_2 and N_2O Emission for Natural Gas Vehicles from Energy Unit

1 Therm = 0.8000 Gallon x 24 Mile/Gallon x 0.04 Gram/Mile = 1 Gram = 0 Tonnes

Where gasoline in California is standardized at 125,000 Btu/Gallon for standard engines and 139,000 Btu/Gallon for large engines.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part III. Natural gas use and GHG emissions of co-generation and combined heat and power end users.
Q1 - End Users 2 Millions Therms per Year or Above
REDACTED

	2004	2005	2006	
# Customers	[redacted]			Customers (* Refer to footnote below)
Volumes	288,344	249,126	281,936	Delivered volume in MDth
CO_2	15,244,747	13,171,292	14,905,956	Metric Tonnes
CH_4	260	224	254	Metric Tonnes
N_2O	29	25	28	Metric Tonnes

NAICS	Number of Customers*			Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
11	[redacted]			0	0	0	0	0	0	0	0	0	0	0	0
21				17,137	17,486	19,249	906,033	924,485	1,017,695	15	16	17	2	2	2
22				184,489	148,260	186,614	9,753,933	7,838,506	9,866,282	166	133	168	18	15	19
23				7,602	6,827	4,675	401,918	360,943	247,167	7	6	4	1	1	0
31				5,367	4,832	4,930	283,753	255,468	260,649	5	4	4	1	0	0
32				62,311	60,263	55,361	3,294,383	3,186,105	2,926,936	56	54	50	6	6	6
33				0	218	0	0	11,526	0	0	0	0	0	0	0
42				0	0	0	0	0	0	0	0	0	0	0	0
44				0	0	0	0	0	0	0	0	0	0	0	0
45				0	0	0	0	0	0	0	0	0	0	0	0
48				0	0	0	0	0	0	0	0	0	0	0	0
49				0	0	0	0	0	0	0	0	0	0	0	0
51				0	0	0	0	0	0	0	0	0	0	0	0
52				0	0	0	0	0	0	0	0	0	0	0	0
53				0	0	0	0	0	0	0	0	0	0	0	0
54				3,381	3,606	3,397	178,753	190,649	179,599	3	3	3	0	0	0
55				0	0	0	0	0	0	0	0	0	0	0	0
56				0	0	0	0	0	0	0	0	0	0	0	0
61				4,835	4,363	4,339	255,626	230,672	229,403	4	4	4	0	0	0
62				1,484	1,165	1,226	78,459	61,594	64,819	1	1	1	0	0	0
71				0	0	0	0	0	0	0	0	0	0	0	0
72				0	325	309	0	17,183	16,337	0	0	0	0	0	0
81				0	0	0	0	0	0	0	0	0	0	0	0
92				1,738	1,781	1,836	91,888	94,161	97,069	2	2	2	0	0	0

Footnote:
* # of Customers are counted for all the billing accounts in the whole year - it includes all the accounts that had any activites during that year (closed accounts in the year are included.) .

[redacted] Redacted information is in dark gray.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
REDACTED
This tab is used as inputs for calculating GHG Emission

Emission Factors at Stationary Sources

	Overall
CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part III. Natural gas use and GHG emissions of co-generation and combined heat and power end users.
Q1 - End Users Below 2 Millions Therms per Year
REDACTED

	2004	2005	2006	
Number of Customers	50	56	55	Number of Customers
Volumes Delivered (MDth)	1,726	1,946	1,794	Volumes Delivered in MDth
CO2	91,261	102,869	94,844	Metric Tonnes
CH4	2	2	2	Metric Tonnes
N2O	0	0	0	Metric Tonnes

Consumption Range (Therm)		Number of Customers		
From	To	2004	2005	2006
0	20,000	17	15	12
20,001	40,000	1	5	2
40,001	60,000	5	2	5
60,001	80,000	1	7	3
80,001	100,000	3	2	4
100,001	120,000	1	2	2
120,001	140,000	0	1	1
140,001	160,000	1	1	1
160,001	180,000	0	0	1
180,001	200,000	0	1	1
200,001	220,000	2	1	0
220,001	240,000	2	3	2
240,001	260,000	1	1	1
260,001	280,000	0	0	1
280,001	300,000	1	0	0
300,001	320,000	0	0	1
320,001	340,000	1	1	0
340,001	360,000	0	0	0
360,001	380,000	1	0	0
380,001	400,000	1	0	1
400,001	420,000	0	1	0
420,001	440,000	0	0	1
440,001	460,000	1	0	0
460,001	480,000	1	1	0
480,001	500,000	0	0	1
500,001	520,000	0	0	1
520,001	540,000	0	0	0
540,001	560,000	0	0	1
560,001	580,000	1	1	0
580,001	600,000	0	0	2
600,001	620,000	0	0	0
620,001	640,000	2	0	2
640,001	660,000	0	0	0
660,001	680,000	0	1	1
680,001	700,000	0	1	0
700,001	720,000	0	0	0
720,001	740,000	0	0	0
740,001	760,000	0	0	1
760,001	780,000	0	0	0
780,001	800,000	0	0	0
800,001	820,000	1	2	0
820,001	840,000	0	0	1
840,001	860,000	0	0	0

860,001	880,000	0	0	0
880,001	900,000	0	0	0
900,001	920,000	0	0	0
920,001	940,000	0	0	0
940,001	960,000	0	0	1
960,001	980,000	0	0	1
980,001	1,000,000	0	0	1
1,000,001	1,020,000	0	0	0
1,020,001	1,040,000	1	0	0
1,040,001	1,060,000	0	0	0
1,060,001	1,080,000	0	0	0
1,080,001	1,100,000	1	0	1
1,100,001	1,120,000	0	0	0
1,120,001	1,140,000	0	0	0
1,140,001	1,160,000	0	0	0
1,160,001	1,180,000	1	0	0
1,180,001	1,200,000	0	0	0
1,200,001	1,220,000	0	0	0
1,220,001	1,240,000	0	1	0
1,240,001	1,260,000	0	1	0
1,260,001	1,280,000	0	0	1
1,280,001	1,300,000	0	0	0
1,300,001	1,320,000	1	1	0
1,320,001	1,340,000	0	0	0
1,340,001	1,360,000	0	0	0
1,360,001	1,380,000	0	2	0
1,380,001	1,400,000	0	0	0
1,400,001	1,420,000	0	0	0
1,420,001	1,440,000	0	0	0
1,440,001	1,460,000	0	0	0
1,460,001	1,480,000	0	0	0
1,480,001	1,500,000	0	0	0
1,500,001	1,520,000	0	0	0
1,520,001	1,540,000	0	0	0
1,540,001	1,560,000	0	0	0
1,560,001	1,580,000	0	0	0
1,580,001	1,600,000	0	1	0
1,600,001	1,620,000	0	0	0
1,620,001	1,640,000	0	0	0
1,640,001	1,660,000	0	0	0
1,660,001	1,680,000	1	0	0
1,680,001	1,700,000	0	0	0
1,700,001	1,720,000	0	0	1
1,720,001	1,740,000	0	0	0
1,740,001	1,760,000	0	0	0
1,760,001	1,780,000	0	0	0
1,780,001	1,800,000	0	0	0
1,800,001	1,820,000	0	0	0
1,820,001	1,840,000	0	1	0
1,840,001	1,860,000	1	0	0
1,860,001	1,880,000	0	0	0
1,880,001	1,900,000	0	0	0
1,900,001	1,920,000	0	0	0
1,920,001	1,940,000	0	0	0
1,940,001	1,960,000	0	0	0
1,960,001	1,980,000	0	0	0
1,980,001	2,000,000	0	0	0

San Diego Gas & Electric (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part III. Natural gas use and GHG emissions of co-generation and combined heat and power end users.
Q1 - End Users 2 Millions Therms per Year or Above
REDACTED

	2004	2005	2006	
# Customers				Number of Customers
Volumes	73,452	58,781	63,319	Volumes Delivered in MDth
CO2	3,883,390	3,107,759	3,347,679	Metric Tonnes
CH4	66	53	57	Metric Tonnes
N2O	7	6	6	Metric Tonnes

	Number of Customers			Volume Delivered in MDth			CO_2 (Tonnes)			CH_4 (Tonnes)			N_2O		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
All Customers				73,452	58,781	63,319	3,883,390	3,107,759	3,347,679	66	53	57	7	6	6

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part IV. Natural gas deliveries to wholesale customers of investor owned utilities
REDACTED

Gas Use at Stationary Sources

CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

	Volume Delivered in MDth			CO_2 in Metric Tonnes			CH_4 in Metric Tonnes			N_2O in Metric Tonnes		
	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005	2006
Total Wholesale	154,194	134,911	149,911	8,152,260	7,132,746	7,925,811	139	121	135	15	13	15

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part V. Feedstock uses of natural gas (natural gas volumes and associated GHG emissions from these end uses should also be included in the Response to Part II)
Q1 - End users who use natural gas as a feedstock
REDACTED

Customer (NAICS)	Natural Gas Delivered (MDth/Day)[1] 2004	2005	2006	Percent of volume H_2 Feedstock	Combustion[2]
A[3] (325120)	21.6	20.4	24.2	90%	10%
B[4] (324110)	17.6	19.9	19.9	30%	70%
C[5] (324110)	79.4	74.6	77.4	40%	60%
D[6] (324110)	8.6	6.8	7.8	40%	60%
E[7] (324110)	20	20.8	19.4	45%	55%
F[8] (324110)	30.6	33.4	29.9	30%	70%
G[9] (325120)	2.2	2.5	2.3	85%	15%
H[10] (324110)	12.5	12.1	12.2	1%	99%
I[11] (324110)	21.9	22.7	24.3	80%	20%

Customer (NAICS)	Annual Volume Delivered in MDth 2004	2005	2006	CO_2 in Metric Tonnes[12] 2004	2005	2006	CH_4 in Metric Tonnes[12] 2004	2005	2006	N_2O in Metric Tonnes[12] 2004	2005	2006
A[3] (325120)	7,884	7,446	8,833	41,683	39,367	46,700	1	1	1	0	0	0
B[4] (324110)	6,424	7,264	7,264	237,746	268,815	268,815	4	5	5	0	1	1
C[5] (324110)	28,981	27,229	28,251	919,335	863,758	896,178	16	15	15	2	2	2
D[6] (324110)	3,139	2,482	2,847	99,575	78,734	90,313	2	1	2	0	0	0
E[7] (324110)	7,300	7,592	7,081	212,273	220,764	205,905	4	4	4	0	0	0
F[8] (324110)	11,169	12,191	10,914	413,354	451,177	403,898	7	8	7	1	1	1
G[9] (325120)	803	913	840	6,368	7,237	6,658	0	0	0	0	0	0
H[10] (324110)	4,563	4,417	4,453	238,807	231,165	233,076	4	4	4	0	0	0
I[11] (324110)	7,994	8,286	8,870	84,523	87,611	93,786	1	1	2	0	0	0

Footnote:

[1] Total SCG measured and delivered natural gas to customer.

[2] Total SCG natural gas delivered minus estimated SCG deliveries used as hydrogen feedstock.
Refinery produced gas and LPG, physically used as steam methane reforming feedstock, is not considered or included here.

[3] Customer-supplied electrical generation bill estimate data.

[4] Customer reported values based on spot measurements / calculations.

[5] SoCalGas estimate based on known total natural gas usage, electrical generation usage and general knowledge of customer end uses. Customer is reviewing and may provide additional d

[6] Customer reported values based on spot measurements / calculations.

[7] Customer electrical generation and Los Angeles municipal transport tax surcharge bill estimate.

[8] SoCalGas estimate based on known total natural gas usage, electrical generation usage and general knowledge of customer end uses. Customer is reviewing and may provide additional d

[9] Customer reported values based on spot measurements / calculations.

[10] Customer electrical generation and Los Angeles municipal transport tax surcharge bill estimate.

[11] Customer electrical generation and Los Angeles municipal transport tax surcharge bill estimate.

[12] GHG emision based on percent of combustion only. GHG emision factors from feedstock are not provided and not shown here.

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Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
This tab is used as inputs for calculating GHG Emission

Combustion Emission Factors at Stationary Sources

	Overall
CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part VI. Natural gas use and GHG emissions associated with natural gas infrastructure within California for each year 2004, 2005, 2006
Q1 - Company use for operational purposes (fuel compressors, other equipments, fleet etc.)
REDACTED

SoCalGas Company Use

	2004	2005	2006	
Volume	5,064	4,595	4,554	Volume in MDth
CO_2	267,732	242,917	240,787	Metric Tonnes
CH_4	5	4	4	Metric Tonnes
N_2O	1	0	0	Metric Tonnes

SDG&E Company Use

	2,004	2,005	2,006	
Volume	365	276	342	Volume in MDth
CO_2	19,306	14,594	18,063	Metric Tonnes
CH_4	0	0	0	Metric Tonnes
N_2O	0	0	0	Metric Tonnes

Redated information is dark gray.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
Part VI. Natural gas use and GHG emissions associated with natural gas infrastructure within California for each year 2004, 2005, 2006
Q1 - Volumes that are either unintentionally released (fugitive) or vented from system operations
REDACTED

SoCalGas

	2004	2005	2006	
Total Delivered Volume	990,848	911,144	971,984	Volume in MDth
Volume due to Leakage				Volume in MDth

SDG&E

	2004	2005	2006	
Total Delivered Volume	130,880	114,270	119,115	Volume in MDth
Volume due to Leakage				Volume in MDth

Redated information is dark gray.

Southern California Gas Company (R.06-04-009/CEC-07-OIIP-1) - CPUC Staff Data Request Dated 11-6-07
REDACTED

Emission Factors at Stationary Sources

	Overall
CO_2 Emission Factor (Kg/MMBtu)	52.87
CH_4 Emission Factor (Kg/MMBtu)	0.0009
N_2O Emission Factor (Kg/MMBtu)	0.0001

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 41165-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29531-G

Rule No. 30 Sheet 1
TRANSPORTATION OF CUSTOMER-OWNED GAS

The general terms and conditions applicable whenever the Utility transports customer-owned gas over its system are described herein. D

A. General

1. Subject to the terms, limitations and conditions of this rule and any applicable CPUC authorized tariff schedule, directive, or rule, the customer will deliver or cause to be delivered to the Utility and accept on redelivery quantities of customer-owned gas which shall not exceed Utility's capability to receive or redeliver such quantities. Utility will accept such quantities of gas from the customer or its designee and redeliver to the customer on a reasonably concurrent basis an equivalent quantity, on a therm basis, to the quantity accepted.

2. The customer warrants to the Utility that the customer has the right to deliver the gas provided for in the customer's applicable service agreement or contract (hereinafter "service agreement") and that the gas is free from all liens and adverse claims of every kind. The customer will indemnify, defend and hold the Utility harmless against any costs and expenses on account of royalties, payments or other charges applicable before or upon delivery to the Utility of the gas under such service agreement.

3. The point(s) where the Utility will receive the gas into its intrastate system (point(s) of receipt, as defined in Rule No. 1) and the point(s) where the Utility will deliver the gas from its intrastate system to the customer (point(s) of delivery, as defined in Rule No. 1) will be set forth in the customer's applicable service agreement. Other points of receipt and delivery may be added by written amendment thereof by mutual agreement. The appropriate delivery pressure at the points of delivery to the customer shall be that existing at such points within the Utility's system or as specified in the service agreement.

B. Quantities

1. The Utility shall as nearly as practicable each day redeliver to customer and customer shall accept, a like quantity of gas as is delivered by the customer to the Utility on such day. It is the intention of both the Utility and the customer that the daily deliveries of gas by the customer for transportation hereunder shall approximately equal the quantity of gas which the customer shall receive at the points of delivery. However, it is recognized that due to operating conditions either (1) in the fields of production, (2) in the delivery facilities of third parties, or (3) in the Utility's system, deliveries into and redeliveries from the Utility's system may not balance on a day-to-day basis. The Utility and the customer will use all due diligence to assure proper load balancing in a timely manner.

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 36317-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29532-G

Rule No. 30 Sheet 2

TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

B. Quantities (Continued)

2. The gas to be transported hereunder shall be delivered and redelivered as nearly as practicable at uniform hourly and daily rates of flow. Utility may refuse to accept fluctuations in excess of ten percent (10%) of the previous day's deliveries, from day to day, if in the Utility's opinion receipt of such gas would jeopardize other operations. Customers may make arrangements acceptable to the Utility to waive this requirement.

3. The Utility does not undertake to redeliver to the customer any of the identical gas accepted by the Utility for transportation, and all redelivery of gas to the customer will be accomplished by substitution on a therm-for-therm basis.

4. Transportation customers, contracted marketers, and aggregators will be provided monthly balancing services in accordance with the provisions of Schedule No. G-IMB.

5. Gas shall be transported hereunder for use only by the customer within the state of California, and not for delivery or resale to a third party unless authorized by the Commission.

C. Electronic Bulletin Board T

1. SoCalGas prefers and encourages customers to use Electronic Bulletin Board (EBB) as defined in Rule No. 1 to submit their transportation nominations to the Utility. Imbalance trades are to be submitted through EBB or by means of the Imbalance Trading Agreement Form (Form 6544). Charges for EBB are set forth in Rule No. 33 and are based upon the level of actual usage. Use of EBB is not mandatory for transportation only customers. T | | | T

D. Operational Requirements

1. The customer must provide to the Utility the name(s) of its shipper(s) as well as any brokers or agents ("agent") used by the customer for delivery of gas to the Utility for transportation service hereunder and their authority to represent customer.

2. Transportation nominations may be submitted manually or through EBB. For each transportation nomination submitted manually, (by means other than EBB such as facsimile transmittal), a processing charge of $11.87 shall be assessed. No processing charge will apply to an EBB subscriber for nominations submitted by fax at a time the EBB system is unavailable for use by the subscriber. T | | T

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 36318-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 30585-G

Rule No. 30 Sheet 3
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

D. Operational Requirements (Continued)

3. Transportation nominations submitted via EBB for the Timely Nomination cycle must be received by the Utility by 9:30 a.m. Pacific Clock Time one day prior to the flow date. Nominations submitted via fax must be received by the Utility by 8:30 a.m. Pacific Clock Time one day prior to the flow date. Nominations received after the nomination deadline will be processed after the nominations received before the nomination deadline. All nominations are considered original nominations and should be replaced to be changed. T

   Nominations submitted via EBB for the Evening Nomination cycle must be received by the Utility by 4:00 p.m. Pacific Clock Time one day prior to the flow date. Nominations submitted via fax must be received by the Utility by 3:00 p.m. Pacific Clock Time one day prior to the flow date. T

   Nominations submitted via EBB for the Intraday 1 Nomination cycle must be received by the Utility by 8:00 a.m. Pacific Clock Time on the flow date. Nominations submitted via fax must be received by the Utility by 7:00 a.m. Pacific Clock Time on the flow date. T

   Nominations submitted via EBB for the Intraday 2 Nomination cycle must be received by the Utility by 3:00 p.m. Pacific Clock Time on the flow date. Nominations submitted via fax must be received by the Utility by 2:00 p.m. Pacific Clock Time on the flow date. T

   Evening and Intraday nominations may be used to request an increase or decrease to scheduled volumes or a change to receipt or delivery points.

4. Where gas is transported by a shipper or agent to more than one customer of the Utility and the transporting pipeline's allocation to the shipper or agent is less than the shipper's or agent's requested quantity, such shipper or agent must allocate among its customers the total quantity of gas delivered each day to the Utility by the shipper or agent.

   An allocation ranking must be submitted to the Utility no later than 3:00 p.m. Pacific Clock Time on the date of flow. An allocation ranking should be received for each flow date from each shipper. Agent rankings should be submitted along with the nominations.

   If no allocation ranking is made by such shipper or agent by the due date and time, the Utility will use a pro rata allocation in allocating delivered quantities among the shipper's or agent's customers and the Utility's allocation of these quantities will prevail. The total quantity allocated among the customers of a shipper or agent during a month shall be adjusted by the Utility if necessary to match the actual monthly delivery to the Utility for the shipper or agent as reported by the transporting pipeline.

(Continued)

(TO BE INSERTED BY UTILITY)
ADVICE LETTER NO. 3235
DECISION NO.
3C14

ISSUED BY
Lee Schavrien
Vice President
Regulatory Affairs

(TO BE INSERTED BY CAL. PUC)
DATE FILED Feb 7, 2003
EFFECTIVE Mar 30, 2003
RESOLUTION NO.

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 32743-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 30586-G

Rule No. 30 Sheet 4
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

Operational Requirements (Continued)

5. As between the customer and the Utility, the customer shall be deemed to be in control and possession of the gas to be delivered hereunder and responsible for any damage or injury caused thereby until the gas has been delivered at the point(s) of receipt. The Utility shall thereafter be deemed to be in control and possession of the gas after delivery to the Utility at the point(s) of receipt and shall be responsible for any damage or injury caused thereby until the same shall have been redelivered at the point(s) of delivery, unless the damage or injury has been caused by the quality of gas originally delivered to the Utility, for which the customer shall remain responsible.

6. Any penalties or charges incurred by the Utility under an interstate or intrastate supplier contract as a result of accommodating transportation service shall be paid by the responsible customer.

7. Customers receiving service from the Utility for the transportation of customer-owned gas shall pay any costs incurred by the Utility because of any failure by third parties to perform their obligations related to providing such service.

E. Interruption of Service

1. The customer's transportation service priority shall be established in accordance with the definitions of Core and Noncore service, as set forth in Rule No. 1, and the provisions of Rule No. 23, Continuity of Service and Interruption of Delivery. If the customer's gas use is classified in more than one service priority, it is the customer's responsibility to inform the Utility of such priorities applicable to the customer's service. Once established, such priorities cannot be changed during a curtailment period.

2. The Utility shall have the right, without liability (except for the express provisions of the Utility's Service Interruption Credit as set forth in Rule No. 23), to interrupt the acceptance or redelivery of gas whenever it becomes necessary to test, alter, modify, enlarge or repair any facility or property comprising the Utility's system or otherwise related to its operation. When doing so, the Utility will try to cause a minimum of inconvenience to the customer. Except in cases of unforeseen emergency, the Utility shall give a minimum of ten (10) days advance written notice of such activity.

F. Nominations in Excess of System Capacity

1. In the event the Utility determines that the transportation nominations received for a specific date of gas flow ("flow date") exceed its expected system capacity (including storage) on such flow date, the Utility shall apply Buy-Back service under Schedule No. G-IMB separately for each flow date that is overnominated. In such event, the Utility shall follow the procedure set forth below. This procedure and the resulting periods of excess nominations shall apply only to (1) all noncore transportation customers, and (2) all customers with usage exceeding 250,000 therms per year at each facility served under Schedule Nos. GT-10 and GT-NGV. D

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 36319-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 30587-G

Rule No. 30 Sheet 5
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

F. Nominations in Excess of System Capacity (Continued)

2. If the Utility determines that transportation nominations received for a specific flow date will result in a period of excess nominations, the Utility shall effectuate at such time a reduction of Hub services that would contribute to the overnomination event and as-available storage injection nominations made for service under Schedule No. G-AUC. Such reductions shall be made in the order of the as-available service queue.

3. If such reductions in nominations are inadequate in resolving the excess transportation nominations problem, Utility shall notify all applicable customers that an excess nominations period shall be instituted. The Utility shall provide such notice via its EBB system. T

4. The excess nominations period shall begin on the flow date(s) indicated by the Utility. Nominations for customers without automated meter reading devices will be reduced to the maximum daily quantity specified for the customer. Customers shall be allowed to reduce their nominations in response to the Utility's notification. Such nominations reductions must be received by the Utility within two (2) business hours from the Utility's notification. If such voluntary reductions are adequate to bring the system into balance, the overnomination flow date will be canceled. Nomination reductions received after this deadline shall be considered received for the next day's nominations.

5. In the event customers fail to adequately reduce their transportation nominations, the Utility shall reduce the nominations of those customers that the Utility believes are causing the excess nominations problem. In making such nominations reductions, the Utility shall utilize the most recent and best available operating data at its disposal.

6. In cases where the Utility reduces a customer's nomination under the above procedure and, as a result of such reduction, the customer uses Standby Procurement service under Schedule No. G-IMB in excess of the 10% tolerance band, the customer shall be allowed to additionally carry over the lesser of (1) the negative imbalance for the month in excess of the tolerance band, or (2) the amount of the customer's total involuntary nominations reductions for the month. Such additional carryover shall be applied to the customer's imbalance account at the conclusion of the imbalance trading period for the month in which the involuntary reduction occurred.

7. In accordance with the provisions of Schedule No. G-IMB, Buy-Back service shall be applied separately to each excess nominations day. Customer meters subject to maximum daily quantity limitations will use the maximum daily quantity as a proxy for daily usage. For each such day, the Utility shall apply the applicable Buy-Back rate to all of the customer's deliveries, less any firm storage injections made on behalf of the customer, for the designated flow date that are in excess of 110% of the customer's actual usage.

(Continued)

(TO BE INSERTED BY UTILITY)
ADVICE LETTER NO. 3235
DECISION NO.
5C14

ISSUED BY
Lee Schavrien
Vice President
Regulatory Affairs

(TO BE INSERTED BY CAL. PUC)
DATE FILED Feb 7, 2003
EFFECTIVE Mar 30, 2003
RESOLUTION NO.

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 30588-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29535-G
29596-G

Rule No. 30 Sheet 6
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

F. Nominations in Excess of System Capacity (Continued)

8. Consistent with the requirements of Decision No. 92-07-025, the Utility's Gas Supply Department shall limit its deliveries into its system on behalf of its core sales market to no more than 110% of actual gas usage for the core (including firm storage injections on behalf of the core) during periods of excess transportation nominations.

G. Winter Deliveries

The Utility requires that customers deliver (using a combination of flowing supply and firm storage withdrawal) at least 50% of burn over a five day period from November through March. As the Utility's total storage inventory declines through the winter, the delivery requirement becomes daily and increases to 70% or 90% depending on the level of inventory relative to peak day minimums.

1. From November 1 through March 31 customers are required to deliver (flowing supply and firm storage withdrawal) at a minimum of 50% of burn over a 5-day period. In other words, for each 5-day period, the Utility will calculate the total burn and the total delivery. If the total delivery is less than 50% of the total burn, a daily balancing standby charge is applied. The daily balancing standby rate is 150% of the highest Southern California Border price during the five day period as published by Natural Gas Intelligence in "NGI's *Daily* Gas Price Index," including authorized franchise fees and uncollectible expenses (F&U) and brokerage fees. Imbalance trading and as-available withdrawals may not be used to offset the delivery minimums. As an additional requirement, retail core and core aggregation will deliver a volume no less than 50% of their allocated firm interstate pipeline rights.

   a. "Burn" means usage and is defined as metered throughput or an estimated quantity such as Minimum Daily Quantity (MinDQ), as defined in Rule No. 1, for customers without automated meters.

   b. Example five-day periods are: Nov. 1 through Nov. 5, Nov. 6 through Nov. 10, Nov. 11 through Nov. 15 and so on. November with 30 days has six 5-day periods. December, January and March with 31 days have a 6-day period at the end of the month. February has a shortened 3 or 4-day period at the end of the month. The current 5-day period will run its course fully before the implementation of the 70% daily requirement. In the event that inventories rise above the 70% daily trigger levels by 1 Bcf, then a new, 5-day period will be implemented on the following day.

   c. Example calculations for determining volumes subject to the daily balancing standby rate are: if over 5 days, total burn is 500,000 therms and total deliveries (including firm withdrawal) are 240,000 therms, then 10,000 therms is subject to daily balancing standby rate. (50% times 500,000 minus 240,000 equals 10,000).

(Continued)

(TO BE INSERTED BY UTILITY)
ADVICE LETTER NO. 2734
DECISION NO.
6C3

ISSUED BY
Paul J. Cardenas
Vice President

(TO BE INSERTED BY CAL. PUC)
DATE FILED Aug 7, 1998
EFFECTIVE Sep 16, 1998
RESOLUTION NO.

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 30589-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29596-G
29597-G

Rule No. 30 Sheet 7

TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

G. Winter Deliveries (Continued)

1. (continued)

   d. Example calculations in using NGI's Daily Gas Price Index for determining the daily balancing standby rate are: If for Jan. 6 through Jan. 10 the NGI Southern California Border quoted price ranges are $2.36- 2.39, $2.36-2.44, $2.38-2.47, $2.36-2.42, and $2.37- 2.45, respectively, then the daily balancing standby rate becomes $3.71 ($2.47 times 150%). L | | L

   e. With the exception of weekends and holidays, the Utility will use quotes from the NGI publication dated on the same day as the flow date. Weekend or holiday flow dates will use the first available publication date after the weekend or holiday.

   f. Under current capacity assignments, 50% of core (retail core plus core aggregation) interstate pipeline rights translates to 522 MMcfd. For aggregators this translates to 50% of the Daily Contract Quantity (DCQ) as defined in Rule No. 1.

2. When total inventory declines to the "peak day minimum + 20 Bcf trigger," the minimum daily delivery requirement increases to 70%. Customers are then required to be balanced (flowing supply plus firm storage withdrawal) at a minimum of 70% of burn on a daily basis. The 5-day period no longer applies since the system can no longer provide added flexibility. The daily balancing standby rate is 150% of the highest Southern California Border price per NGI's *Daily* Gas Price Index for the day (including authorized F&U and brokerage fees) and is applied to each day's deliveries which are less than the 70% requirement. In this regime as-available storage withdrawal is cut in half. All Hub activity contributing to the underdelivery situation (i.e., Hub deliveries greater than Hub receipts) is suspended.

   a. Peak day minimums are calculated annually before November 1 as part of normal winter operations planning. The peak day minimum is that level of total inventory that must be in storage to provide deliverability for the core 1-in-35 year peak day event, firm withdrawal commitments and noncore balancing requirement.

   b. Example calculations in this regime for determining volumes subject to the daily balancing standby rates are: If on January 6 total burn is 500,000 therms, and total deliveries (including firm withdrawal) are 300,000 therms then 50,000 therms is subject to the daily balancing standby charge (70% times 500,000 minus 300,000 equals 50,000).

   c. Example calculations in using NGI's Daily Gas Price Index for daily balancing standby rates in this regime are: if for January 6 and January 7, the NGI Southern California Border quoted price ranges are $2.36-2.39 and $2.36-2.44, then the daily balancing standby rates become $3.59 (150% of 2.39) for January 6, and $3.66 (150% times 2.44) for January 7, respectively.

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 36320-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29598-G*

Rule No. 30 Sheet 8

TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

G. Winter Deliveries (Continued)

3. When total inventories decline to the "peak day minimum + 5 Bcf trigger," the minimum daily delivery requirement increases to 90%. Customers are required to be balanced (flowing supply plus firm storage withdrawal) at a minimum of 90% of burn on a daily basis. Similar to the 70% regime the 5 day period no longer applies. The daily balancing standby rate is charged daily and is 150% of the highest Southern California Border price per NGI's *Daily* Gas Price Index for the day (including authorized F&U and brokerage fees). In this regime there are no as-available storage withdrawals. All Hub activity contributing to the underdelivery situation (i.e., Hub deliveries greater than Hub receipts) is suspended.

4. Information regarding the established peak day minimums, daily balancing trigger levels and total storage inventory levels will be made available to customers on a daily basis via EBB and other customer notification media. T

5. If a wholesale customer so requests, the Utility will nominate firm storage withdrawal volumes on behalf of the customer to match 100% of actual usage assuming the customer has sufficient firm storage withdrawal and inventory rights to match the customer's supply and demand.

6. The Utility will accept intra-day nominations to increase deliveries.

7. In all cases, current BCAP rules for monthly balancing and monthly imbalance trading continue to apply. Volumes not in compliance with the 50%, 70% and 90% minimum delivery requirements, purchased at the daily balancing standby rate, are credited toward the monthly 90% delivery requirements. Daily balancing charges remain independent of monthly balancing charges. Daily balancing and monthly balancing charges go to the Purchased Gas Account (PGA). Schedule No. G-IMB provides details on monthly and daily balancing charges.

H. Accounting and Billing

1. The customer and the Utility acknowledge that on any operating day during the customer's applicable term of transportation service, the Utility may be redelivering quantities of gas to the customer pursuant to other present or future service arrangements. In such an event, the Utility and customer agree that the total quantities of gas shall be accounted for in accordance with the provisions of Rule No. 23. If there is no conflict with Rule No. 23, the quantities of gas shall be accounted for in the following order:

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 41166-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29787-G

Rule No. 30 Sheet 9
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

H. Accounting and Billing (Continued)

1. (Continued)

   a. First, to satisfy any minimum quantities under existing agreements.

   b. Second, after complete satisfaction of (a), then to any supply or exchange service arrangements with the customer.

   c. Third, after the satisfaction of (a) and (b), then to any subsequently executed service agreement.

2. The customer agrees that it shall accept and the Utility can rely upon, for purposes of accounting and billing, the allocation made by customer's shipper as to the quality and quantity of gas, expressed both in Mcf and therms, delivered at each point of receipt during the preceding billing period for the customer's account. If the shipper does not make such an allocation, the customer agrees to accept the quality and quantity as determined by the Utility. All quality and measurement calculations are subject to subsequent adjustment as provided in the Utility's tariff schedules or applicable CPUC rules and regulations. Any other billing correction or adjustment made by the customer or third party for any prior period shall be based on the rates or costs in effect when the event occurred and accounted for in the period they are reconciled.

3. The Utility shall render to the customer an invoice for the services hereunder showing the quantities of gas, expressed in therms, delivered to the Utility for the customer's account, at each point of receipt and the quantities of gas, expressed in therms, redelivered by Utility for the customer's account at each point of delivery during the preceding billing period. The Customer shall pay such amounts due hereunder within nineteen (19) calendar days following the date such bill is mailed.

4. Both the Utility and the customer shall have the right at all reasonable times to examine, at its expense, the books and records of the other to the extent necessary to verify the accuracy of any statement, charge, computation, or demand made under or pursuant to service hereunder. The Utility and the customer agree to keep records and books of account in accordance with generally accepted accounting principles and practices in the industry.

I. Gas Delivery Specifications T

1. The natural gas stream delivered into the Utility's system shall conform to the gas quality specifications as provided in any applicable agreements and contracts currently in place between the entity delivering such natural gas and the Utility at the time of the delivery. If no such agreement is in place, the natural gas shall conform to the gas specifications as defined below. T T N N

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 41167-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29788-G

Rule No. 30 Sheet 10
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

I. Gas Delivery Specifications (Continued) T

2. Gas delivered into the Utility's system for the account of a customer for which there is no existing contract between the delivering pipeline and the Utility shall be at a pressure such that the gas can be integrated into the Utility's system at the point(s) of receipt. T D

3. Gas delivered, except as defined in I.1 above, shall conform to the following quality specifications at the time of delivery: T T

a. Heating Value: The minimum heating value is nine hundred and ninety (990) Btu (gross) per standard cubic foot on a dry basis. The maximum heating value is one thousand one hundred fifty (1150) Btu (gross) per standard cubic foot on a dry basis. T

b. Moisture Content or Water Content: For gas delivered at or below a pressure of eight hundred (800) psig, the gas shall have a water content not in excess of seven (7) pounds per million standard cubic feet. For gas delivered at a pressure exceeding of eight hundred (800) psig, the gas shall have a water dew point not exceeding 20 degrees F at delivery pressure. T

c. Hydrogen Sulfide: The gas shall not contain more than twenty-five hundredths (0.25) of one (1) grain of hydrogen sulfide, measured as hydrogen sulfide, per one hundred (100) standard cubic feet (4 ppm). The gas shall not contain any entrained hydrogen sulfide treatment chemical (solvent) or its by-products in the gas stream. T

d. Mercaptan Sulfur: The gas shall not contain more than three tenths (0.3) grains of mercaptan sulfur, measured as sulfur, per hundred standard cubic feet (5 ppm). T T

e. Total Sulfur: The gas shall not contain more than seventy-five hundredths (0.75) of a grain of total sulfur compounds, measured as sulfur, per one hundred (100) standard cubic feet (12.6 ppm). This includes COS and CS2, hydrogen sulfide, mercaptans and mono, di and poly sulfides. T

f. Carbon Dioxide: The gas shall not have a total carbon dioxide content in excess of three percent (3%) by volume.

g. Oxygen: The gas shall not have an oxygen content in excess of two-tenths of one percent (0.2%) by volume, and customer will make every reasonable effort to keep the gas free of oxygen. T

h. Inerts: The gas shall not contain in excess of four percent (4%) total inerts (the total combined carbon dioxide, nitrogen, oxygen and any other inert compound) by volume. T

i. Hydrocarbons: For gas delivered at a pressure of 800 psig or less, the gas hydrocarbon dew point is not to exceed 45 degrees F at 400 psig or at the delivery pressure if the delivery pressure is below 400 psig. For gas delivered at a pressure higher than 800 psig, the gas hydrocarbon dew point is not to exceed 20 degrees F measured at a pressure of 400 psig. T T

(Continued)

(TO BE INSERTED BY UTILITY)
ADVICE LETTER NO. 3675
DECISION NO. 06-09-039
10C13

ISSUED BY
Lee Schavrien
Vice President
Regulatory Affairs

(TO BE INSERTED BY CAL. PUC)
DATE FILED Nov 1, 2006
EFFECTIVE Jun 7, 2007
RESOLUTION NO.

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 41168-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 29789-G

Rule No. 30 Sheet 11
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

I. Gas Delivery Specifications (Continued) T

3. (Continued) T

j. Merchantability: The gas shall not contain dust, sand, dirt, gums, oils and other substances injurious to Utility facilities or that would cause gas to be unmarketable. T N

k. Hazardous Substances: The gas must not contain hazardous substances (including but not limited to toxic and/or carcinogenic substances and/or reproductive toxins) concentrations which would prevent or restrict the normal marketing of gas, be injurious to pipeline facilities, or which would present a health and/or safety hazard to Utility employees and/or the general public.

l. Delivery Temperature: The gas delivery temperature is not to be below 50 degrees F or above 105 degrees F. T T

m. Interchangeability: The gas shall have a minimum Wobbe Number of 1279 and shall not have a maximum Wobbe Number greater than 1385. The gas shall meet American Gas Association's Lifting Index, Flashback Index and Yellow Tip Index interchangeability indices for high methane gas relative to a typical composition of gas in the Utility system serving the area. N N D T

Acceptable specification ranges are: D

* Lifting Index (IL)
  IL <= 1.06

* Flashback Index (IF)
  IF <= 1.2

* Yellow Tip Index (IY)
  IY >= 0.8

n. Liquids: The gas shall contain no liquids at or immediately downstream of the receipt point. D N

o. Landfill Gas: Gas from landfills will not be accepted or transported. |

p. Biogas: Biogas refers to a gas made from anaerobic digestion of agriculture and/or animal waste. The gas is primarily a mixture of methane and carbon dioxide. Biogas must be free from bacteria, pathogens and any other substances injurious to utility facilities or that would cause the gas to be unmarketable and it shall conform to all gas quality specifications identified in this Rule. | | | | | | N

L

(Continued)

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 41994-G
LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 41169-G
29602-G*

Rule No. 30 Sheet 12
TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

I. Gas Delivery Specifications (Continued) T

4. The Utility, at its option, may refuse to accept any gas tendered for transportation by the customer or on his behalf if such gas does not meet the specifications at the time of delivery as set out in I. 2 and I. 3 above, as applicable. T,L T,L L

5. A generic deviation from the minimum gas quality specifications set forth in Paragraph I.3 is granted for "Historical California Production." Quality specifications for Historical California Production will be governed by SoCalGas Rule No. 30 in effect as of September 21, 2006, or, to the extent that production had a deviation in place at that time, pursuant to the agreement governing that deviation. "Historical California Production" is defined as follows: Onshore or offshore California-produced natural gas delivered at points of interconnection existing as of January 1, 2006, up to the maximum historical deliveries or Maximum Daily Volume effective on that date as specified in any agreement permitting supply delivery at those points. If a producer moves its deliveries of Historical California Production from a point of interconnection existing as of January 1, 2006, to another existing or a new point on the system, or if one or more producers consolidate two or more existing points of interconnection existing as of January 1, 2006, to another existing or a new point on the system, the deviation granted under this provision will follow the Historical California Production provided that (a) the Utility has required or approved the change in receipt point location and (b) the continuing deviation shall not exceed the Maximum Daily Volume stated in the access agreement(s) governing deliveries at the producer's original point of interconnection and (c) specifically, the quality of the gas should not lessen to the point that it falls outside the grandfathered Rule No. 30 specifications. N

6. In addition to the generic deviation provided in paragraph 5, the Utility will grant other specific deviations to California production from the gas quality specifications defined in Paragraph I.3 above, if such gas will not have a negative impact on system operations. Any such deviation will be required to be filed through Advice Letter for approval prior to gas actually flowing in the Utility system.

7. The Utility will grant a deviation to existing interstate supplies consistent with prior gas quality specifications if requested by the interconnecting interstate pipeline for a period of not more than 12 months from the date of D.06-09-039.

8. The Utility will post on its EBB and/or general website information regarding the available real-time Wobbe Number of gas at identified operational locations on its system. N

(Continued)

(TO BE INSERTED BY UTILITY)
ADVICE LETTER NO. 3675-A
DECISION NO. 06-09-039
12C10

ISSUED BY
Lee Schavrien
Senior Vice President
Regulatory Affairs

(TO BE INSERTED BY CAL. PUC)
DATE FILED Jun 12, 2007
EFFECTIVE Jun 7, 2007
RESOLUTION NO. G-3397

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 29602-G*
LOS ANGELES, CALIFORNIA CANCELING Original CAL. P.U.C. SHEET NO. 29542-G

Rule No. 30 Sheet 13 T

TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

J. Termination or Modification L

1. If the customer breaches any terms and conditions of service of the customer's service agreement or the applicable tariff schedules and does not correct the situation within thirty (30) days of notice, the Utility shall have the right to cease service and immediately terminate the customer's applicable service agreement.

2. If the contract is terminated, either party has the right to collect any quantities of gas or money due them for transportation service provided prior to the termination.

K. Regulatory Requirements

1. Any gas transported by the Utility for the customer which was first transported outside the State of California shall have first been authorized under Federal Energy Regulatory Commission (FERC) regulations, as amended. Both parties recognize that such regulations only apply to pipelines subject to FERC jurisdiction, and do not apply to the Utility. The customer shall not take any action which would subject the Utility to the jurisdiction of the FERC, the Economic Regulatory Administration or any succeeding agency. Any such action shall be cause for immediate termination of the service arrangement between the customer and the Utility.

2. Transportation service shall not begin until both parties have received and accepted any and all regulatory authorizations necessary for such service. L

L. Warranty and Indemnification

1. The customer warrants to the Utility that the customer has the right to deliver gas hereunder and that such gas is free from all liens and adverse claims of every kind. Customer will indemnify, defend and save Utility harmless against all loss, damage, injury, liability and expense of any character where such loss, damage, injury, liability or expense arises directly or indirectly out of any demand, claim, action, cause of action or suit brought by any person, association or entity asserting ownership of or any interest in the gas tendered for transportation hereunder, or on account of royalties, payments or other charges applicable before or upon delivery of gas hereunder.

2. The customer shall indemnify, defend and save harmless Utility, its officers, agents, and employees from and against any and all loss, costs (including reasonable attorneys' fees), damage, injury, liability, and claims for injury or death of persons (including any employee of the customer or the Utility), or for loss or damage to property (including the property of the customer or the Utility), which occurs or is based upon an act or acts which occur while the gas is deemed to be in the customer's control and possession or which results directly or indirectly from the customer's performance of its obligations arising pursuant to the provisions of its service agreement and the Utility's applicable tariff schedules, or occurs based on the customer-owned gas not meeting the specifications of Section I of this rule.

Total Emissions Summary Report

Report 5/18/06 3:52 pm

Southern California Gas Company

Legend
Blue = required
Orange = optional

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 2212-Natural Gas Distribution
SIC Code:
Description: The Southern California Gas Company is the nation's largest natural gas distribution utility, serving 19 million people through 5.4 million gas meters in more than 530 communities. The service area encompasses 23,000 square miles of diverse terrain throughout most of central and southern California, from Visalia to the Mexican border.

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2004
Reporting Scope: CA
Reporting Protocol: General Reporting Protocol, Version 1 (October 2002)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**35,929.61**	35,929.61	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**254,102.58**	254,102.58	0.00	0.00	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	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT	**290,032.19**	290,032.19	0.00	0.00	0.00	0.00	0.00	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	CO2e	CO2	CH4	N2O	Unit
Energy Imports	**9,227.23**	9,227.23	0.00	0.00	metric ton
Energy Exports	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**9,227.23**	9,227.23	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company: Ryerson, Master & Associates, Inc.
Certifier Name: Ryerson, Master and Associates, Inc.
Lead Certifier Name: Ivor John

Comments: General Reporting Protocol, Version 1 (October 2002)

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.

Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Modeled Small Combustion Equipr	**3,395.65**	3,395.65	0.00	0.00	0.00	0.00	0.00	metric ton
Oxidation from natural gas pipline	**14.07**	14.07	0.00	0.00	0.00	0.00	0.00	metric ton
Telecomm	**91.00**	91.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**3,500.72**	3,500.72	0.00	0.00	0.00	0.00	0.00	-

Total Emissions Summary Report

Report 5/18/06 3:52 pm

Southern California Gas Company

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	-

Emissions Efficiency metric:

Emissions Management Programs:

Emissions Reduction Projects:

Emissions Reduction Goals:

Source	Emission Category	Calc Method	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Electricity Purchased and Consumed	Purchased Electricity	Pre-Calc				CO2	9,227.23	metric ton	General Reporting Protocol, Chapter 5 "Indirect Emissions from Electricity Use." 	
Fleet Operations	Mobile Combustion	Pre-Calc				CO2	35,929.61	metric ton	General Reporting Protocol, Capter 6 "Direct Emissions from Mobile Sources." 	
Modeled Small Combustion Equipment	Stationary Combustion	Pre-Calc				CO2	3,395.65	metric ton	Small, non permitted combustion equipment was modeled to determine greenhouses gas emissions from all sources. 	
Natural Gas T & D Activities	Stationary Combustion	Pre-Calc				CO2	254,102.58	metric ton	General Reporting Protocol, Chapter 7 "Direct Emissions from Stationary Combustion." 	
Oxidation from natural gas pipline	Fugitive Emissions	Pre-Calc				CO2	14.07	metric ton		
Telecomm	Stationary Combustion	Pre-Calc				CO2	91.00	metric ton	ICE Combustion 	

REFERENCE DOCUMENTS

Title	Author	Publish Date
SoCal Gas Company Certification Activities Log	Ivor John	6/6/2005 12:00:00AM

* 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.

Total Emissions Summary Report

Report 4/30/07 9:43 am

Southern California Gas Company

Legend
Blue = required
Orange = optional

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 2212-Natural Gas Distribution
SIC Code:
Description: The Southern California Gas Company is the nation's largest natural gas distribution utility, serving 19 million people through 5.4 million gas meters in more than 530 communities. The service area encompasses 23,000 square miles of diverse terrain throughout most of central and southern California, from Visalia to the Mexican border.

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2005
Reporting Scope: CA
Reporting Protocol: General Reporting Protocol, Version 2.1 (June 2006)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**37,216.02**	37,216.02	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**215,371.37**	215,371.37	0.00	0.00	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	**31,612.06**	31,612.06	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT	**284,199.45**	284,199.45	0.00	0.00	0.00	0.00	0.00	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	CO2e	CO2	CH4	N2O	Unit
Energy Imports	**12,407.64**	12,407.64	0.00	0.00	metric ton
Energy Exports	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**12,407.64**	12,407.64	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company: Ryerson, Master & Associates, Inc.
Certifier Name: Ryerson, Master and Associates, Inc.
Lead Certifier Name: Derek Markolf

Comments: General Reporting Protocol, Version 2.1 (June 2006)

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.

Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Modeled Small Combustion Equipr	**4,672.00**	4,672.00	0.00	0.00	0.00	0.00	0.00	metric ton
Telecomm	**263.98**	263.98	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**4,935.98**	4,935.98	0.00	0.00	0.00	0.00	0.00	-

Total Emissions Summary Report

Report 4/30/07 9:43 am

Southern California Gas Company

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	-

Emissions Efficiency metric:

Emissions Management Programs:

? US EPA's Natural Gas Star Program (voluntary effort)
? US EPA's Energy Star Program (voluntary effort)
? Rideshare Program (voluntary effort)
? Corporate Green Building Policy (voluntary effort)

Emissions Reduction Projects:

? SoCalGas: Green building projects:

In April 2004, the new Murrieta Base for SoCalGas became Riverside County's first "green building". In July 2004, the SoCalGas Yukon Base set the new Silver LEED standard for the City of Hawthorne. The Yukon facility includes a photovoltaic solar panel system. Our Green Buildings provide the benefits of: a "clean", chemical-free, bright, healthy environment for workers and guests; reduction of energy usage by more than 20 percent annually, lowering the greenhouse gas indirect emissions footprint for the facility; reduction of water usage by more than 50 percent annually; and establishes SoCalGas as a leader in providing efficient, environmentally friendly work places in our communities.

? SoCalGas Energy Reduction:

SoCalGas has made efforts to reduce energy usage in its buildings through employee education and facility improvements. We have established 'Energy Champions' in all our workgroups. These individuals help to promote energy conservation and provide employee outreach materials. We developed an "Energy Champion Toolkit" that includes flyers, notes to employees to communicate when lights were left on and energy conservation signs. We have developed a 10-year strategy to reduce our energy consumption on a square foot basis. Results of energy consumption are provided to all facilities on a monthly basis and to executives in quarterly reports. Energy conservation ice cream socials are scheduled to reach out to employees on importance of conservation with summer heating up and all the options available to them. The components of our energy conservation strategy vary from putting UV protective film on windows, adjusting thermostats, identifying zone heating/cooling opportunities to gain efficiencies, installing updated motion sensors and just asking employees to turn the lights off before they leave. For 2004, SoCalGas achieved a 2.53% reduction in energy usage (kWh/sq ft) compared to 2003.

Total Emissions Summary Report

Report 4/30/07 9:43 am

Southern California Gas Company

Emissions Reduction Goals: Customer Energy Efficiency Programs:
SoCalGas Over the past 10 years, SoCalGas has actively promoted energy efficiency programs. During this time, we have helped customers save over 165 million therms of natural gas--enough to supply 300,000 homes for a year, invested $342 million in energy efficiency—over $28 million just last year and our energy efficiency programs have produced over $200 million cost savings to customers.

1. SoCalGas Green Building Policy: SoCalGas has a Green Building Policy to design new company buildings and large remodel projects to Silver or better Leadership in Energy and Environmental Design (LEED) standards for energy efficient and environmentally friendly design, construction and operation.

2. SoCalGas Corporate Energy Reduction Strategy:

The time to conserve energy is now. A new 10-year goal to reduce electricity consumption by 10 percent per square foot by the year 2010 and 20 percent by 2015 is now in place at all SoCalGas facilities. This electric energy conservation goal is consistent with how the State of California is measuring its energy conservation performance and is a critical step toward ensuring an adequate supply of electricity for our peak summer load. While investments in new technology and energy efficient equipment will help reduce our usage in the future, our employees conservation efforts to turn lights out whenever possible, eliminate portable heaters/fans and adjust to new thermostat settings are extremely important to ensure our success.

Source	Emission Category	Calc Method	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Electricity Purchased and Consumed	Purchased Electricity	Pre-Calc				CO2	12,407.64	metric ton	General Reporting Protocol, Chapter 6 "Indirect Emissions from Electricity Use." 	
Fleet Operations	Mobile Combustion	Pre-Calc				CO2	37,216.02	metric ton	General Reporting Protocol, Chapter 7 "Direct Emissions from Mobile Sources." 	
Modeled Small Combustion Equipment	Stationary Combustion	Pre-Calc				CO2	4,672.00	metric ton	Small, non permitted combustion equipment was modeled to determine greenhouses gas emissions from all sources. Gas burned was used, as it proved to be a more conservative approximation. 	
Natural Gas Pipline	Fugitive Emissions	Pre-Calc				CO2	31,612.06	metric ton		
Natural Gas T & D Activities	Stationary Combustion	Pre-Calc				CO2	215,371.37	metric ton	General Reporting Protocol, Chapter 8 "Direct Emissions from Stationary Combustion." 	
Telecomm	Stationary Combustion	Pre-Calc				CO2	263.98	metric ton	ICE Combustion 	

Total Emissions Summary Report

Report 4/30/07 9:43 am

Southern California Gas Company

REFERENCE DOCUMENTS

Title	Author	Publish Date
05-SCG-CertificationActivityLog.doc	Derek Markolf	3/8/2007 12:00:00AM

* 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.

Total Emissions Summary Report

Report Date: 08/31/2007 04:56 pm PT

Southern California Gas Company

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Legend
Blue = required
Orange = optional

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 2212-Natural Gas Distribution
SIC Code:
Description: The Southern California Gas Company is the nation's largest natural gas distribution utility, serving 19 million people through 5.4 million gas meters in more than 530 communities. The service area encompasses 23,000 square miles of diverse terrain throughout most of central and southern California, from Visalia to the Mexican border.

Primary Calculation Methodologies:

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2006
Reporting Scope: CA
Reporting Protocol: General Reporting Protocol, Version 2.2 (March 2007)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**7,396.64**	7,396.64	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**228,413.55**	228,413.55	0.00	0.00	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	**32,033.76**	32,033.76	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT	**267,843.95**	267,843.95	0.00	0.00	0.00	0.00	0.00	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	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**12,332.39**	12,332.39	0.00	0.00	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	**12,332.39**	12,332.39	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company:
Certifier Name:
Lead Certifier Name:
Basis of Certification Opinion:
Certifier Comments:

This report includes emissions from California sources

Total Emissions Summary Report

Report Date: 08/31/2007 04:56 pm PT

Southern California Gas Company

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.

Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Small Combustion Sources	**4,222.09**	4,222.09	0.00	0.00	0.00	0.00	0.00	metric ton
Telecomm	**450.00**	450.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**4,672.09**	4,672.09	0.00	0.00	0.00	0.00	0.00	-

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.

Movement Report

Factor	Details	Amount (CO2e)	Unit

Emissions Efficiency metric:

Emissions Management Programs:
US EPA's Natural Gas Star Program (voluntary effort)
US EPA's Energy Star Program (voluntary effort)
Rideshare Program (voluntary effort)
Corporate Green Building Policy (voluntary effort)

Emissions Reduction Projects:
SoCalGas has made efforts to reduce energy usage in its buildings through employee education and facility improvements.

Emissions Reduction Goals:
Customer Energy Effiency Programs:
SoCalGas over the past 10 years has actively promoted energy efficiency programs. During this time, we have helped customers save over 165 million therms of natural gas - enough to supply 300,00 homes for a year, invested $342 million in energy efficiency - $28 million recently, and our energy effiency programs have produced over $200 million in cost savings to our customers.

This report includes emissions from California sources

Total Emissions Summary Report

Report Date: 08/31/2007 04:56 pm PT

Southern California Gas Company

Source	Emission Category	Calc Method	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Electricity purchased and consumed.	Purchased Electricity	Pre-Calc				CO2	12,332.39	metric ton	Reporting Protocol "Indirect Emissions from Electricity. 	
Fleet Emissions	Mobile Combustion	Pre-Calc				CO2	7,396.64	metric ton	Fuel used times protocol emission factors 	
Pipeline Oxy & CO2 Fugitives	Fugitive Emissions	Pre-Calc				CO2	32,033.76	metric ton	Miles of pipe times times emission factors 	
Small Combustion Sources	Stationary Combustion	Pre-Calc				CO2	4,222.09	metric ton	Based on total fuel consumed times emissions factors. 	
Source Operations	Stationary Combustion	Pre-Calc				CO2	228,413.55	metric ton	Fuel consumption times protocol emission factors. 	
Telecomm	Stationary Combustion	Pre-Calc				CO2	450.00	metric ton	Fuel used, hours operated times specific fuel emission factors. 	

REFERENCE DOCUMENTS

Title	Author	Publish Date

This report includes emissions from California sources

Total Emissions Summary Report

Report 5/18/06 3:55 pm

San Diego Gas & Electric

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 221-Utilities
SIC Code:
Description: San Diego Gas & Electric is a regulated public utility providing electric service to 3 million consumers through 1.3 million electric meters and 800,000 natural gas meters in San Diego and southern Orange counties. SDG&E's service area encompasses 4,100 square miles, covering two counties and 25 cities. Exceptional customer service is a priority of SDG&E as it seeks to enhance the region's quality of life. SDG&E, is a Fortune 500 energy services holding company. To learn more, go to WWW.sdge.com

Legend
Blue = required
Orange = optional

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2004
Reporting Scope: CA
Reporting Protocol: General Reporting Protocol, Version 1 (October 2002); Power/Utility Reporting Protocol, Version 1 (April 2005)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**19,594.81**	19,594.81	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**8,452.63**	8,452.63	0.00	0.00	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	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT	**28,047.44**	28,047.44	0.00	0.00	0.00	0.00	0.00	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	CO2e	CO2	CH4	N2O	Unit
Energy Imports	**381,845.13**	381,845.13	0.00	0.00	metric ton
Energy Exports	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**381,845.13**	381,845.13	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company: Ryerson, Master & Associates, Inc.
Certifier Name: Ryerson, Master and Associates, Inc.
Lead Certifier Name: Ivor John

Comments: Power/Utility Reporting Protocol, Version 1 (October 2004)

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.

Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Modeled Permit Exempt Source Cc	**632.32**	632.32	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**632.32**	632.32	0.00	0.00	0.00	0.00	0.00	-

Total Emissions Summary Report

Report 5/18/06 3:55 pm

San Diego Gas & Electric

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	-

Emissions Efficiency metric:

Emissions Management Programs: US EPA's Energy Star Program (voluntary effort)

Corporate Green Building Policy (voluntary effort)

Emissions Reduction Projects: Over the last 10 years, SDG&E has actively promoted energy efficiency programs. We have:

Helped customers save over 1.9 million MWh--enough electricity to power 300,000 homes for a year, reduced the electric peak load by over 400 MWs--the equivalent of a mid-size power plant, and invested almost $460 million in energy efficiency—over $41 million just last year, and implemented programs that have helped customers save almost 29 million therms of natural gas--enough to supply energy to over 53,000 homes for a year.

During this time, our energy efficiency programs have produced over $200 million cost savings to customers that we serve.

2. SDG&E Green Building Policy: SDG&E has a Green Building Policy to design new company buildings and large remodel projects to Silver or better Leadership in Energy and Environmental Design (LEED) standards for energy efficient and environmentally friendly design, construction and operation.

3. SDG&E Corporate Energy Reduction Strategy:

The time to conserve energy is now.

A new 10-year goal to reduce electricity consumption by 10 percent per square foot by the year 2010 and 20 percent by 2015 is now in place at all SDG&E facilities. This electric energy conservation goal is consistent with how the State of California is measuring its energy conservation performance and is a critical step toward ensuring an adequate supply of electricity for our peak summer load. While investments in new technology and energy efficient equipment will help reduce our usage in the future, our employees conservation efforts to turn lights out whenever possible, eliminate portable heaters/fans and adjust to new thermostat settings are extremely important to ensure our success.

Total Emissions Summary Report

Report 5/18/06 3:55 pm

San Diego Gas & Electric

Emissions Reduction Goals: Renewable Portfolio Standard:

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These purchases continue to demonstrate SDG&E's commitment to creating a balanced mix of renewable and fossil energy resources for the region.

Source	Emission Category	Calc Method	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Electricity Purchased and Consumed	Purchased Electricity	Pre-Calc				CO2	4,124.48	metric ton	General Reporting Protocol, Chapter 5 "Indirect Emissions From Electricity Use." 	
Fleet Operations	Mobile Combustion	Pre-Calc				CO2	19,594.81	metric ton	General Reporting Protocol, Chapter 6 "Direct Emissions from Mobile Combustion." 	
General Operations, T&D Activities	Stationary Combustion	Pre-Calc				CO2	8,452.63	metric ton	Power/Utility Protocol, Chapter 5 "Direct Emission from Stationary Combustion." 	
Modeled Permit Exempt Source Combustion	Stationary Combustion	Pre-Calc				CO2	632.32	metric ton	Emissions calculated from modeling permit exempt combustion equipment at representative facilities throughout the organization. 	
T & D Losses Direct Access Power	Purchased Electricity	Pre-Calc				CO2	81,319.07	metric ton	PUP Protocol for Direct Access 	
T & D Losses from Purchased Power	Purchased Electricity	Pre-Calc				CO2	280,908.18	metric ton		
T & D Losses from Wheeled	Purchased Electricity	Pre-Calc				CO2	15,493.40	metric ton	PUP Protocol fro Wheeled Energy. 	

REFERENCE DOCUMENTS

Title	Author	Publish Date
GHG Emissions Report	Darrell Johnson	3/16/2006 12:00:00AM
Certification Activities Checklist, San Diego Ga:	Ivor John	3/17/2006 12:00:00AM

Total Emissions Summary Report

Report 5/18/06 3:55 pm

San Diego Gas & Electric

* 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.

Total Emissions Summary Report

Report 4/30/07 9:41 am

San Diego Gas & Electric

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 221-Utilities
SIC Code:
Description: San Diego Gas & Electric is a regulated public utility providing electric service to 3 million consumers through 1.3 million electric meters and 800,000 natural gas meters in San Diego and southern Orange counties. SDG&E's service area encompasses 4,100 square miles, covering two counties and 25 cities. Exceptional customer service is a priority of SDG&E as it seeks to enhance the region's quality of life. SDG&E, is a Fortune 500 energy services holding company. To learn more, go to WWW.sdge.com

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)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**18,087.17**	18,087.17	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**14,685.65**	14,685.65	0.00	0.00	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	**5,475.64**	5,475.64	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT	**38,248.46**	38,248.46	0.00	0.00	0.00	0.00	0.00	metric ton

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Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Energy Imports	**384,090.50**	384,090.50	0.00	0.00	metric ton
Energy Exports	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**384,090.50**	384,090.50	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company: Ryerson, Master & Associates, Inc.
Certifier Name: Ryerson, Master and Associates, Inc.
Lead Certifier Name: Derek Markolf

Comments: Power/Utility Reporting Protocol, Version 2.1 (June 2006)

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.

Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Modeled Permit Exempt Source C	**893.00**	893.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**893.00**	893.00	0.00	0.00	0.00	0.00	0.00	-

Total Emissions Summary Report

Report 4/30/07 9:41 am

San Diego Gas & Electric

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	-

Emissions Efficiency metric:

Emissions Management Programs: US EPA's Energy Star Program (voluntary effort)

Corporate Green Building Policy (voluntary effort)

Emissions Reduction Projects: Over the last 10 years, SDG&E has actively promoted energy efficiency programs. We have:

Helped customers save over 1.9 million MWh--enough electricity to power 300,000 homes for a year, reduced the electric peak load by over 400 MWs--the equivalent of a mid-size power plant, and invested almost $460 million in energy efficiency—over $41 million just last year, and implemented programs that have helped customers save almost 29 million therms of natural gas--enough to supply energy to over 53,000 homes for a year.

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Total Emissions Summary Report

Report 4/30/07 9:41 am

San Diego Gas & Electric

Emissions Reduction Goals: Renewable Portfolio Standard:

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Total Emissions Summary Report

Report 4/30/07 9:41 am

San Diego Gas & Electric

Source:	Emission Category	Calc Method	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source:	General Info
Electricity Purchased and Consumed	Purchased Electricity	Pre-Calc				CO2	8,390.97	metric ton	General Reporting Protocol, Chapter 6 "Indirect Emissions From Electricity Use." 	
Fleet Operations	Mobile Combustion	Pre-Calc				CO2	18,087.17	metric ton	General Reporting Protocol, Chapter 7 "Direct Emissions from Mobile Combustion." 	
General Operations, Generation & T&D Activities	Stationary Combustion	Pre-Calc				CO2	14,685.65	metric ton	Power/Utility Protocol, Chapter 5 "Direct Emission from Stationary Combustion." 	
Modeled Permit Exempt Source Combustion	Stationary Combustion	Pre-Calc				CO2	893.00	metric ton	Emissions calculated from modeling permit exempt combustion equipment at representative facilities throughout the organization. In addition, Telecomm and M&R station elcetricity use and Telecomm Generators combustion emissions. 	
Natural Gas Pipeline Fugitive Emissions	Fugitive Emissions	Pre-Calc				CO2	5,475.64	metric ton		
T & D Losses Direct Access Power	Purchased Electricity	Pre-Calc				CO2	73,859.40	metric ton	PUP Protocol for Direct Access 	
T & D Losses from Purchased Power	Purchased Electricity	Pre-Calc				CO2	274,383.25	metric ton		
T & D Losses from Wheeled	Purchased Electricity	Pre-Calc				CO2	27,456.88	metric ton	PUP Protocol fro Wheeled Energy. 	

REFERENCE DOCUMENTS

Title	Author	Publish Date
GHG Emissions Report 2005	Darrell Johnson	3/7/2007 12:00:00AM
05-SDG&E-CertificationActivityLog	Derek Markolf	3/8/2007 12:00:00AM

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Total Emissions Summary Report

Report Date: 08/31/2007 05:22 pm PT

San Diego Gas & Electric

San Diego, CA 92101-3017 United States

213 244-2142
djohnson@semprautilities.com

Legend
Blue = required
Orange = optional

Contact: Darrell Johnson
Industry Type: Utility
NAIC Code: 221-Utilities
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Description: San Diego Gas & Electric is a regulated public utility providing electric service to 3 million consumers through 1.3 million electric meters and 800,000 natural gas meters in San Diego and southern Orange counties. SDG&E's service area encompasses 4,100 square miles, covering two counties and 25 cities. Exceptional customer service is a priority of SDG&E as it seeks to enhance the region's quality of life. SDG&E, is a Fortune 500 energy services holding company. To learn more, go to WWW.sdge.com

Primary Calculation Methodologies: Power/Utility Reporting Protocol, Version 2.1 (June 2006)

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2006
Reporting Scope: CA
Reporting Protocol: General Reporting Protocol, Version 2.2 (March 2007); Power/Utility Reporting Protocol, Version 1 (April 2005)
Direct Baseline Year 2004
Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**17,575.80**	17,575.80	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**917,943.52**	917,943.52	0.00	0.00	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	**5,521.83**	5,521.83	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT	**941,041.15**	941,041.15	0.00	0.00	0.00	0.00	0.00	metric ton

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Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**209,802.18**	209,802.18	0.00	0.00	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	**209,802.18**	209,802.18	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company:
Certifier Name:
Lead Certifier Name:
Basis of Certification Opinion:
Certifier Comments:

This report includes emissions from California sources

Total Emissions Summary Report

Report Date: 08/31/2007 05:22 pm PT

San Diego Gas & Electric

OPTIONAL INFORMATION

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Deminimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Small Source Combustion	**421.99**	421.99	0.00	0.00	0.00	0.00	0.00	metric ton
Telecomm	**254.97**	254.97	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**676.96**	676.96	0.00	0.00	0.00	0.00	0.00	-

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	-

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Movement Report

Factor	Details	Amount (CO2e)	Unit

Emissions Efficiency metric:

Emissions Management Programs: US EPA's Energy Star Program (voluntary effort)

Corporate Green Building Policy (voluntary effort)

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Total Emissions Summary Report

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Total Emissions Summary Report

Report Date: 08/31/2007 05:22 pm PT

San Diego Gas & Electric

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Fleet Operations	Mobile Combustion	Pre-Calc				CO2	17,575.80	metric ton	General Reporting Protocol, Chapter 7 "Direct Emissions from Mobile Combustion." 	
General Operations, Generation & T&D Activities	Stationary Combustion	Pre-Calc				CO2	917,943.52	metric ton	Power/Utility Protocol, Chapter 5 "Direct Emission from Stationary Combustion." 	
Natural Gas Pipeline Fugitive Emissions	Fugitive Emissions	Pre-Calc				CO2	5,521.83	metric ton		
Small Source Combustion	Stationary Combustion	Pre-Calc				CO2	421.99	metric ton	Emissions calculated from fuels used at each small source facility. Fuels bills time specific fuel emission factors from CCAR protocols. 	
T & D Losses Direct Access Power	Purchased Electricity	Pre-Calc				CO2	77,931.26	metric ton	PUP Protocol for Direct Access 	
T & D Losses from Purchased Power	Purchased Electricity	Pre-Calc				CO2	95,646.44	metric ton		
T & D Losses from Wheeled	Purchased Electricity	Pre-Calc				CO2	27,456.88	metric ton	PUP Protocol fro Wheeled Energy. 	
Telecomm	Stationary Combustion	Pre-Calc				CO2	254.97	metric ton	Fuels used, hours of operation times specific fuel emission factors from CCAR protocols. 	

REFERENCE DOCUMENTS

Title	Author	Publish Date

This report includes emissions from California sources

Southern California Gas Company
2006 California Gas Report Workpapers - Redacted

2006 CALIFORNIA GAS REPORT

WEATHER: HEATING DEGREE DAYS – AVERAGE AND "COLD" YEAR DESIGNS; AND WINTER PEAK DAY DESIGN TEMPERATURES

JULY 2006

Southern California Gas Company
2006 California Gas Report Workpapers - Redacted

Weather

I. Overview

Southern California Gas Company's service area extends from Fresno County to the Mexican border. To quantify the overall temperature experienced within this region, SoCalGas aggregates daily temperature recordings from fifteen U.S. Weather Bureau weather stations first into six temperature zones and then into one system average heating degree-day ("HDD") figure. The table below lists weather station locations by temperature zones.

Table 1

Weather Stations by Temperature Zones

Temperature Zone	Weight	Station Location
1. High mountain	0.0062	Lake Arrowhead
2. Low desert	0.0332	Palm Springs
		Brawley
3. Coastal	0.1998	Los Angeles Airport
		Newport Beach Harbor
		Santa Barbara Airport
4. High desert	0.0662	Bakersfield Airport
		Palmdale
		Visalia
5. Interior valleys	0.3807	Burbank
		Pasadena
		Pomona Cal Poly
		Redlands
6. Basin	0.3139	Los Angeles Civic Center
		Santa Ana

Southern California Gas Company
2006 California Gas Report Workpapers - Redacted

Weather

SoCalGas uses 65° Fahrenheit to calculate the number of HDDs. One heating degree day is accumulated for each degree that the daily average is below 65° Fahrenheit. To arrive at the HDD figure for each temperature zone, SoCalGas uses the simple average of the weather station HDDs in that temperature zone. To arrive at the system average HDDs figure for its entire service area, SoCalGas weights the HDD figure for each zone using the proportion of gas customers within each temperature zone based on calendar year 2002 customer counts. These weights are used for the dataset from January 1983 to December 2002.

Daily weather temperatures are from the National Climatic Data Center or from preliminary data that SoCalGas captures each day and posts on its web-site: http://www.socalgas.com/business/weather/ for various individual weather stations as well as for its system average values of HDD. Annual HDDs for the entire service area from 1983 to 2002 are listed in Table 2, below.

Table 2

Calendar Month Heating Degree-Days (Jan. 1983 through Dec. 2002)

Year	Month Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total "Cal-Year"
1983	264	200	200	173	59	18	1	0	3	9	179	281	1387
1984	239	205	117	117	19	6	0	0	0	45	218	367	1333
1985	354	256	280	91	65	13	1	2	6	30	238	254	1590
1986	154	201	157	109	50	9	2	3	31	31	81	267	1095
1987	350	227	213	61	43	13	7	2	3	18	160	406	1503
1988	301	160	143	121	65	32	2	3	12	16	176	342	1373
1989	366	316	155	62	55	19	1	4	9	41	105	234	1367
1990	297	299	208	73	58	10	1	1	1	11	121	368	1448
1991	283	118	316	120	102	27	4	3	4	45	114	276	1412
1992	282	182	202	41	15	15	1	1	1	11	127	371	1249
1993	337	258	117	52	17	11	0	0	3	11	128	275	1209
1994	231	259	131	113	81	6	3	0	2	42	292	309	1469
1995	317	136	180	130	111	41	2	2	2	15	69	245	1250
1996	263	201	171	58	14	3	1	0	1	68	144	261	1185
1997	282	205	115	98	5	4	1	0	0	27	120	295	1152
1998	268	282	187	186	88	21	0	0	5	44	167	320	1568
1999	264	245	285	235	79	40	1	2	6	9	128	244	1538
2000	246	243	210	82	27	5	2	1	3	65	247	241	1372
2001	379	338	197	210	28	7	4	3	4	22	146	358	1696
2002	333	203	227	151	81	11	2	4	8	79	96	318	1513
20-Yr-Avg (Jan1983-Dec2002)													
Avg.	290.5	226.7	190.6	114.2	53.1	15.6	1.8	1.6	5.2	32.0	152.8	301.6	1385.5
St.Dev.	54.1	57.2	56.5	54.1	31.4	11.4	1.7	1.4	6.8	21.2	58.3	52.1	160.121
Min.	154.0	118.0	115.0	41.0	5.0	3.0	0.0	0.0	0.0	9.0	69.0	234.0	1095.0
Max.	379.0	338.0	316.0	235.0	111.0	41.0	7.0	4.0	31.0	79.0	292.0	406.0	1696.0

Southern California Gas Company
2006 California Gas Report Workpapers - Redacted

Weather

II. Calculating the Average-Temperature Year

The simple average of the 20-year period (January 1983 through December 2002) was used to represent the Average Year Hdd total and the individual monthly values. The standard deviation of these 20 years of annual Hdd was used to design the two Cold Years based on a "1-in-10" and "1-in-35" chance that the respective annual "Cold Year" hdd value would be exceeded.

III. Calculating the Cold-Temperature Year Weather Designs

For SoCalGas cold-temperature-year weather designs are traditionally developed with a 1-in-35 year chance of occurrence. In terms of probabilities this can be expressed as the following for a "1-in-35" cold-year HDD value in equation 1 and a "1-in-10" cold-year HDD value in equation 2, with Annual HDD as the random variable:

(1) Prob { Annual HDD > "1-in-35" Cold-Yr HDD } = 1/35 = 0.0286

(2) Prob { Annual HDD > "1-in-10" Cold-Yr HDD } = 1/10 = 0.1000

An area of 0.0286 under one tail of the T-Distribution translates to 2.025 standard deviations away from an average-year based on a t-statistic with 19 degrees of freedom. Using the standard deviation of 160.1 HDD from the last 20 years of data, these equations yield values of about 1,708 HDD for a "1-in-35" cold year and 1,598 as the number of HDDs for a "1-in-10" cold year (an area of 0.1000 under one tail of the T-Distribution translates to 1.328 standard deviations away from an average-year based on a t-statistic with 19 degrees of freedom). For example, the "1-in-35" cold-year HDD is calculated as follows:

(3) Cold-year HDD = 1,708 which equals approximately 1,386 average-year HDDs + 2.025 * 160.1

Southern California Gas Company
2006 California Gas Report Workpapers - Redacted

Weather

Table 3 shows monthly HDD figures for "1-in-35" cold year, "1-in-10" cold year and, average year temperature designs. The monthly average-temperature-year HDDs are calculated from weighted monthly HDDs from 1983 to 2002, as shown as the bottom of Table 2, above. For example, the average-year December value of 302 HDD equals the simple average of the 20 December HDD figures from 1983 to 2002, and represents 21.8 percent of the HDDs in an average-year. SoCalGas calculates the cold--temperature-year monthly HDD values using the same shape of the average-year HDDs. For example, since 21.8 percent of average-temperature-year HDDs occurred in December, the expected number of HDDs during December for a cold-year is equal to 1,708 HDDs multiplied by 21.8 percent, or 372 HDDs.

Table 3

Calendar Month Heating Degree-Day Designs

SoCalGas Heating Degree Day (HDD) Weather Designs

(Calendar Based)

	Cold		Average
	1-in-35 exceedance	1-in-10 exceedance	
January	358	335	290
February	280	261	227
March	235	220	190
April	141	132	114
May	66	61	53
June	19	18	16
July	2	2	2
August	2	2	2
September	6	6	5
October	39	37	32
November	188	176	153
December	372	348	302
	1708	1598	1386

Weather

IV. Calculating the Peak-Day Design Temperature

SoCalGas' Peak-Day design temperature of 38 degrees Fahrenheit, denoted "Deg-F," is determined from a statistical analysis of observed daily system average heating degree-days constructed from daily temperature recordings from fifteen U.S. Weather Bureau weather stations. Since the data are daily we really have a time series of data that measure heating degree-days per day, or heating degrees. The following notation will be used for the remainder of this discussion:

(1) $HD_{y,d}$ = system average value of Heating Degrees for calendar year "y" and day "d".

The calendar year, y, can range from 1950 through 2002, while the day, d, can range from 1 to 365, for non leap years, or from 1 to 366 for leap years. The "upper" value for the day, d, thus depends on the calendar year, y, and will be denoted by n(y)=365, or 366, respectively, when y is a non-leap year or a leap year.

For each calendar year, we calculate the following statistic from our series of daily system average heating degrees defined in equation (1) above:

(2) $MaxHD_y = \max_{d=1}^{n(y)}\{ HD_{y,d} \}$, for y=1950, 1951, ..., 2002.

The statistical tools we use to analyze this data are implemented in a DOS-based executable-only computer code that was developed by Richard L. Lehman and described in a paper published in the Proceedings of the Eighth Conference on Applied Climatology, January 17-22, 1993, Anaheim, California, pp. 270-273, by the Americal Meteorological Society, Boston, MA., with the title "Two Software Products for Extreme Value Analysis: System Overviews of ANYEX and DDEX." At the time he wrote

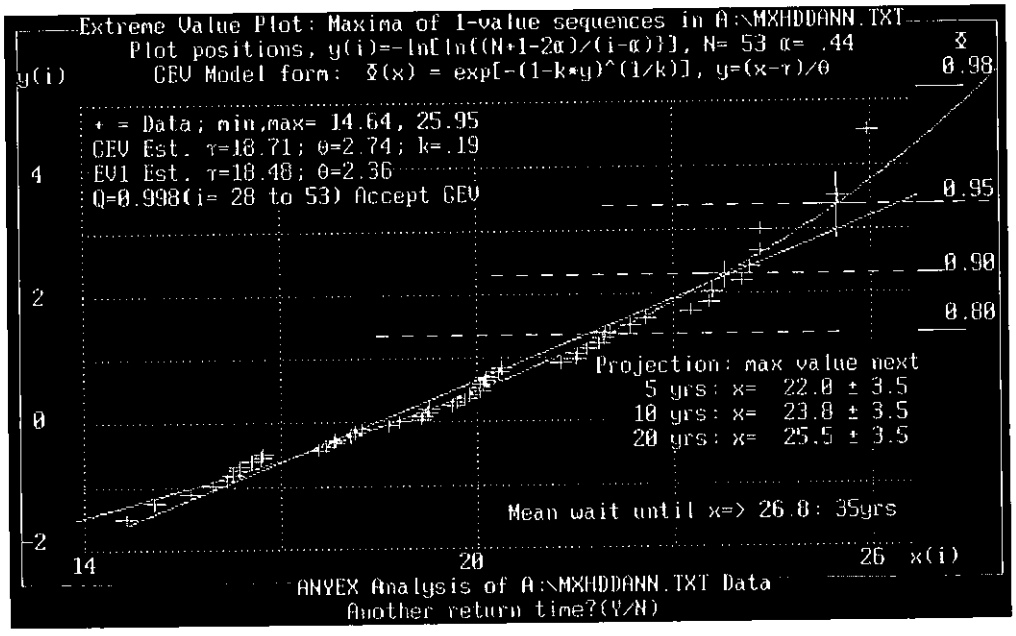
the paper, Dr. Lehman was with the Climate Analysis Center, National Weather Service/NOAA in Washington, D.C., zip code 20233.

Dr. Lehman's ANYEX software programs not only "fit" an extreme value probability model (labeled GEV or EV1 in Dr. Lehman's software) to a specified set of data, but they also perform calculations using the fitted model. For example, the software will calculate the value "hd", for a specified probability, δ, in the equation below:

(3) $\delta = \text{Prob}\{ \text{MaxHD}_y \leq \text{hd} \}$,

where the cumulative distribution function, CDF, for the random variable MaxHD_y is the fitted extreme value probability model. Figure 4 below is an example of the output "window" provided by Dr. Lehman's program based on our 53 observations of the variable MaxHD_y that we used for our 2005 BCAP work. The data analyzed are shown in Table 4, below.

Figure 4



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In terms of our random variable $MaxHD_y$, the Generalized Extreme Value (GEV) model can be written as the following equation:

(4) $\text{Prob}\{ MaxHD_y \leq hd \} = \exp[-((1- k \cdot z)^{(1/k)})]$,

where "exp[.]" is the exponential function and

(5) $z = (hd - \gamma) / \theta$,

with the parameters "k", "γ" and "θ" are the parameters estimated for the GEV model. The Complementary Cumulative Distribution function, CCDF, is obtained from the following probability statement with the GEV probability model:

(6) $\text{Prob}\{ MaxHD_y > hd \} = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$,

where "z" is given in equation (5), above.

A plot of the CCDF for $MaxHD_y$, is shown as Figure 5 (below) and is based on the estimated GEV parameter values of "k", "γ" and "θ" shown in Figure 4 (above).

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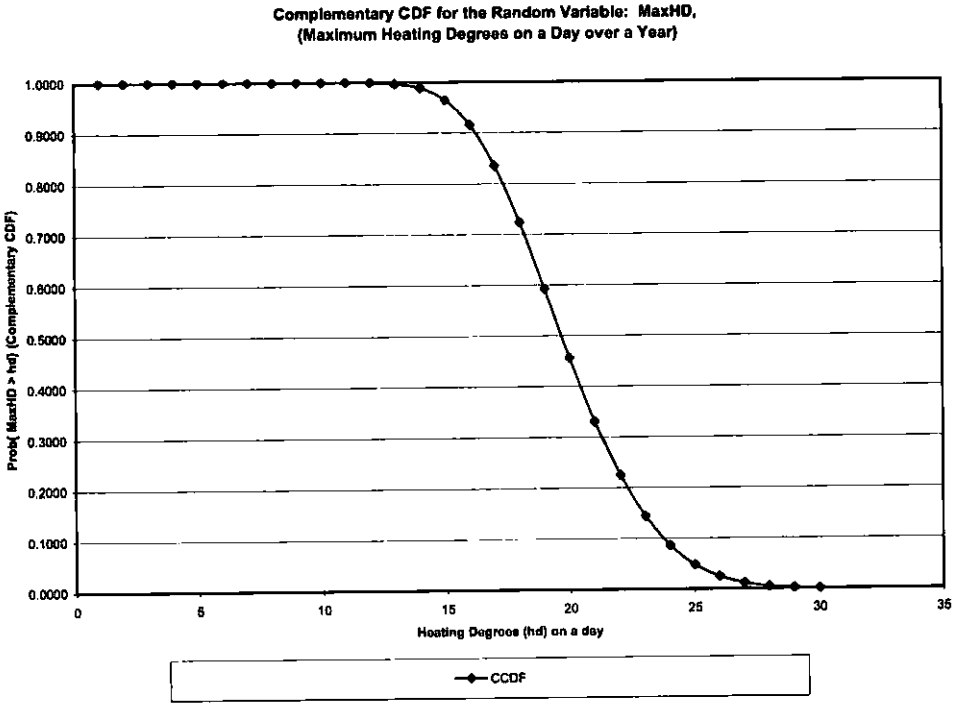
Figure 5



To calculate the minimum daily (system average) temperature to define our extreme weather event (i.e., COLDEST-Day of a calendar year), we start with the fitted probability model for the variable $MaxHD_y$. We specify that this COLDEST-Day be one where the temperature, MinT=65 – hd, where the value of hd would be exceeded only "1-in-35" years. This criteria translates into two equations to be solved based on equations (5) and (6) above:

(7) solve for "z" from $1/35 = 0.029 = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$, which

equals $Prob\{ MaxHD_y > hd \}$, and since

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(8) $z = (hd - \gamma) / \theta$,

(9) solve for "hd" from $hd = \gamma + \theta \cdot z$.

The value of $z = 2.95$ and $hd = \gamma + \theta \cdot z = 27$, with values for "k", "γ" and "θ" for the GEV estimates shown in Figure 4, above. The corresponding minimum daily temperature is MinT=65 – 27=38 Deg-F.

SoCalGas' Peak-Day design temperature of 41 degrees Fahrenheit, is calculated in a methodologically similar way as for the 38 degree peak day temperature. The criteria specified in equation (7) above for a "1-in-35" likelihood would be replaced by a "1-in-10" likelihood.

(7') solve for "z" from $1/10 = 0.100 = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$, which yields

a "z" value of $z = 1.86$ and $hd = \gamma + \theta \cdot z = 24$, approximately, with values for "k", "γ" and "θ" for the GEV estimates shown in Figure 4, above. The corresponding minimum daily temperature is MinT=65 – 24=41 Deg-F.

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Table 4

YEAR	MX_HD	Month(MxHdd)
1950	24.04	Jan
1951	20.38	Dec
1952	21.86	Jan
1953	19.26	Feb
1954	19.25	Dec
1955	19.16	Dec
1956	20.05	Feb
1957	25.48	Jan
1958	18.64	Nov
1959	16.70	Feb
1960	22.58	Jan
1961	17.69	Dec
1962	21.51	Jan
1963	22.32	Jan
1964	19.69	Nov
1965	20.14	Jan
1966	18.24	Jan
1967	24.16	Dec
1968	24.32	Dec
1969	20.13	Jan
1970	18.14	Dec
1971	21.96	Jan
1972	23.54	Dec
1973	19.87	Jan
1974	21.93	Jan
1975	20.34	Jan
1976	20.09	Jan
1977	16.55	Jan
1978	23.25	Dec
1979	23.60	Jan
1980	14.64	Jan
1981	15.62	Jan
1982	19.62	Jan
1983	16.27	Jan
1984	18.07	Dec
1985	19.81	Feb
1986	16.35	Feb
1987	21.49	Dec
1988	21.66	Dec
1989	24.34	Feb
1990	25.95	Dec
1991	16.36	Mar
1992	17.57	Dec
1993	18.82	Jan
1994	17.82	Nov
1995	15.07	Dec
1996	20.04	Feb
1997	16.71	Jan
1998	21.29	Dec
1999	15.95	Jan
2000	16.17	Mar
2001	17.84	Feb
2002	19.17	Jan

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2006 CALIFORNIA GAS REPORT

WEATHER: HEATING DEGREE DAYS – AVERAGE AND "COLD" YEAR DESIGNS; AND WINTER PEAK DAY DESIGN TEMPERATURES

JULY 2006

SDGE
A Sempra Energy utility

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I. Overview

San Diego Gas and Electric Company's service area for natural gas extends from southern Orange County throughout San Diego County to the Mexican border. To quantify the overall temperature experienced within this region, SDGandE aggregates daily temperature recordings from three U.S. Weather Bureau weather stations into one system average heating degree-day ("HDD") figure. The table below lists weather station locations along with a designated temperature zone as a mnemonic.

Table 1

Temperature Zones with Representative Weather Stations

Temperature Zone	Weight	Station Location
1. Inland (East)	0.3500	El Cajon
2. Coastal	0.3000	San Diego's Lindberg Field
3. Inland (North)	0.3500	Miramar Naval Air Station

SDGandE uses 65° Fahrenheit to calculate the number of HDDs. One heating degree-day is accumulated for each degree that the daily average is *below* 65° Fahrenheit. To arrive at the system average HDDs figure for its entire service area, SDGandE weights the HDD figure for each zone using the weights shown in Table 1. These weights are used in calculating the data shown from January 1983 to December 2002.

Daily maximum and minimum temperatures, for each individual weather station in the table above, are compiled from National Weather Service data. The web-site:

http://newweb.wrh.noaa.gov/sgx/obs/rtp/rtpmap.php?wfo=sgx

provides easy access to temperature data for San Diego and parts of surrounding counties. For each station, the average temperature is computed as the (maximum + minimum)/2 and this value is used to compute the heating degrees (i.e., the *daily* HDD) for each station as well. System average values of HDD are then computed using the weights for each respective station. Annual

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and monthly HDDs for the entire SDGandE service area from 1983 to 2002 are listed in Table 2, below.

Table 2

Calendar Month Heating Degree-Days (Jan. 1983 through Dec. 2002)

Year	Month Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total "Cal-Year"
1983	207	185	171	163	47	13	0	0	0	0	137	227	1151
1984	210	207	112	78	11	2	0	0	0	27	178	325	1151
1985	320	275	261	74	44	7	0	0	1	9	193	237	1421
1986	142	198	161	115	46	0	0	0	20	26	87	244	1039
1987	330	227	203	75	40	4	2	1	0	4	134	395	1414
1988	289	164	136	101	61	30	0	0	7	9	174	309	1280
1989	362	281	169	60	45	17	0	0	3	24	84	225	1271
1990	275	302	205	66	54	5	0	0	0	1	107	312	1327
1991	259	148	283	121	95	25	0	0	1	32	109	248	1321
1992	243	118	161	14	1	0	0	0	0	3	115	353	1008
1993	269	227	132	65	16	9	0	0	2	7	123	266	1117
1994	229	233	160	125	91	2	0	0	0	31	291	310	1472
1995	267	117	165	128	108	23	0	0	0	7	43	223	1080
1996	237	190	177	73	18	3	0	0	1	75	143	244	1161
1997	258	253	145	103	2	2	0	0	0	17	96	292	1170
1998	256	260	207	197	95	23	1	0	5	32	172	342	1590
1999	279	271	285	225	112	49	3	0	4	4	146	245	1622
2000	249	219	224	94	28	3	0	0	0	51	241	228	1336
2001	355	300	199	197	28	5	0	0	0	9	128	328	1549
2002	318	226	248	156	88	12	0	0	2	54	82	298	1483
20-Yr-Avg (Jan1983-Dec2002)													
Avg.	267.8	219.9	190.2	111.5	51.6	11.7	0.3	0.0	2.3	21.1	139.1	282.5	1298.0
St.Dev.	52.7	55.1	49.5	53.8	35.4	12.7	0.8	0.1	4.6	20.5	57.7	50.4	186.331
Min.	142.2	117.0	112.4	13.8	1.4	0.0	0.0	0.0	0.0	0.0	42.7	223.0	1007.5
Max.	362.0	302.0	285.2	225.2	111.5	48.6	3.2	0.7	20.1	75.3	290.6	394.9	1621.9

II. Calculations to Define Our Average-Temperature Year

The simple average of the 20-year period (January 1983 through December 2002) was used to represent the Average Year total and the individual monthly values for HDD. The standard deviation of these 20 years of annual HDDs was used to design the two Cold Years based on a "1-in-10" and "1-in-35" chance, ***c***, that the respective annual "Cold Year" hdd_c value would be exceeded.

Our model for the annual HDD data is essentially a regression model where the only "explanatory" variable is the constant term. For example, the annual HDDs are modeled by the equation below:

$HDD_y = \beta_0 + e_y$; where β_0 represents the mean and the e_y is an error term.

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It turns out (e.g., see *Econometrics*, Wonnacott and Wonnacott, 1970, Wiley & Sons, Inc., 1970, p. 254) that the average of the annual HDD_y estimates β_0 and that the standard deviation of these HDDs about the mean, β_0, estimates the standard deviation, s_e, of the error term, e_y. Further, a probability model for the annual HDD is based on a T-Distribution with N-1 degrees of freedom, where, N is the number of years of HDD data we use:

$U = (HDD_y - \beta_0)/s_e$, has a T-Distribution with N-1 degrees of freedom.

III. Calculating the Cold-Temperature Year Weather Designs

Cold Year HDD Weather Designs

For SDGandE, cold-temperature-year HDD weather designs are developed with a 1-in-35 year chance of occurrence. In terms of probabilities this can be expressed as the following for a "1-in-35" cold-year HDD value in equation 1 and a "1-in-10" cold-year HDD value in equation 2, with Annual HDD as the random variable:

(1) Prob { Annual HDD > "1-in-35" Cold-Yr HDD } = 1/35 = 0.0286

(2) Prob { Annual HDD > "1-in-10" Cold-Yr HDD } = 1/10 = 0.1000

An area of 0.0286 under one tail of the T-Distribution translates to 2.025 standard deviations *above* an average-year based on a t-statistic with 19 degrees of freedom. Using the standard deviation of 186.3 HDD from the last 20 years of data, these equations yield values of about 1,675 HDD for a "1-in-35" cold year and 1,545 as the number of HDDs for a "1-in-10" cold year (an area of 0.1000 under one tail of the T-Distribution translates to 1.328 standard deviations *above* an average-year based on a t-statistic with 19 degrees of freedom). For example, the "1-in-35" cold-year HDD is calculated as follows:

(3) Cold-year HDD = 1,675 which equals approximately 1,298 average-year HDDs + 2.025 * 186.3

Table 3 shows monthly HDD figures for "1-in-35" cold year, "1-in-10" cold year and, average year temperature designs. The monthly average-temperature-year HDDs are calculated from weighted monthly HDDs from 1983 to 2002, as shown as the bottom of Table 2, above. For example, the average-year December value of 282.5 HDD equals the simple average of the 20 December

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HDD figures from 1983 to 2002, and represents 21.8 percent of the HDDs in an average-year. SDGandE calculates the cold--temperature-year monthly HDD values using the same shape of the average-year HDDs. For example, since 21.8 percent of average-temperature-year HDDs occurred in December, the estimated number of HDDs during December for a cold-year is equal to 1,675 HDDs multiplied by 21.8 percent, or 364.5 HDDs.

Table 3

Calendar Month Heating Degree-Day Designs

SDGandE Heating Degree Day (HDD) Weather Designs

(Calendar Based)

	Cold		Average
	1-in-35 exceedance	1-in-10 exceedance	
January	345.5	318.7	267.7
February	283.8	261.8	219.9
March	245.5	226.4	190.2
April	143.9	132.7	111.5
May	66.5	61.4	51.5
June	15.1	13.9	11.7
July	0.4	0.4	0.3
August	0.0	0.0	0.0
September	2.9	2.7	2.3
October	27.2	25.1	21.1
November	179.5	165.6	139.1
December	364.5	336.2	282.5
	1675	1545	1298

IV. Calculating the Peak-Day Design Temperature

SDGandE's Peak-Day design temperature of 41.4 degrees Fahrenheit, denoted "Deg-F," is determined from a statistical analysis of observed annual minimum daily system average temperatures constructed from daily temperature recordings from the three U.S. Weather Bureau weather stations discussed above. Since we have a time series of daily data by year, the following notation will be used for the remainder of this discussion:

(1) $AVG_{y,d}$ = system average value of Temperature for calendar year "y" and day "d".

The calendar year, y, can range from 1972 through 2002, while the day, d, can range from 1 to 365, for non leap years, or from 1 to 366 for leap years. The "upper" value for the day, d, thus depends on the calendar year, y, and will

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be denoted by n(y)=365, or 366, respectively, when y is a non-leap year or a leap year.

For each calendar year, we calculate the following statistic from our series of daily system average temperatures defined in equation (1) above:

$$(2) \quad \text{MinAVG}_y = \min_{d=1}^{n(y)}\{ \text{AVG}_{y,d} \}, \text{ for y=1972, 1973, ..., 2002.}$$

(The notation used in equation 2 means "For a particular year, y, list all the daily values of system average temperature for that year, then pick the smallest one.")

The resulting minimum annual temperatures are shown in Table 4, below. Note that most of the minimum temperatures occur in the months of December or January; however, for some calendar years the minimums occurred in other months (the minimum for 1999 was observed in April).

The statistical methods we use to analyze this data employ software developed to fit three generic probability models: the Generalized Extreme Value (GEV) model, the Double-Exponential or GUMBEL (EV1) model and a 2-Parameter Students' T-Distribution (T-Dist) model. [The GEV and EV1 models have the same mathematical specification as those implemented in a DOS-based executable-only computer code that was developed by Richard L. Lehman and described in a paper published in the Proceedings of the Eighth Conference on Applied Climatology, January 17-22, 1993, Anaheim, California, pp. 270-273, by the American Meteorological Society, Boston, MA., with the title "Two Software Products for Extreme Value Analysis: System Overviews of ANYEX and DDEX." At the time he wrote the paper, Dr. Lehman was with the Climate Analysis Center, National Weather Service/NOAA in Washington, D.C., zip code 20233.] The Statistical Analysis Software (SAS) procedure for nonlinear statistical model estimation (PROC MODEL, from SAS V6.12) was used to do the calculations. Further, the calculation procedures were implemented to fit the probability models to observed *maximums* of data, like heating degrees. By recognizing that:

$$- \text{MinAVG}_y = - \min_{d=1}^{n(y)}\{\text{AVG}_{y,d}\} = \max_{d=1}^{n(y)}\{ -\text{AVG}_{y,d}\}, \text{ for y=1972, ..., 2002;}$$

this same software, when applied to the *negative* of the minimum temperature data, yields appropriate probability model estimation results.

The calculations done to fit any one of the three probability models chooses the parameter values that provide the "best fit" of the parametric probability model's calculated cumulative distribution function (CDF) to the empirical cumulative distribution function (ECDF). Note that the ECDF is constructed based on the variable "-MinAVG$_y$" (which is a *maximum* over a set of

negative temperatures) with values of the variable $MinAVG_y$ that are the same as shown in Table 4.

In Table 5, the data for $-MinAVG_y$ are shown after they have been sorted from "lowest" to "highest" value. The ascending *ordinal* value is shown in the column labeled "RANK" and the empirical cumulative distribution function is calculated and shown in the next column. The formula used to calculate this function is:

$$ECDF = (RANK - \alpha)/[MaxRANK + (1 - 2\,\alpha)],$$

where the parameter "α" (shown as *alpha* in Table 5) is a "small" positive value (usually less than ½) that is used to bound the ECDF away from 0 and 1.

Of the three probability models considered (GEV, EV1, and T_Dist) the results obtained for the T_Dist model were selected since the fit to the ECDF was better than that of the EV1 model and essentially the same as that for the GEV model. (Convergence to stable parameter estimates was often a problem with fitting a GEV model to the ECDF.) A (random) variable that has a T_Dist probability model, for specified degrees of freedom *df*, has and expected value of zero and a standard deviation of one. The degrees of freedom, *df*, depends on the number of data points we have for analysis and the number of parameters in our model. The following mathematical expression specifies the T_Dist model we fit to the data for "$-MinAVG_y$" shown in Table 5.

(3) $ECDF(-MinAVG_y) = T\_Dist(z; df)$,

where T_Dist is the cumulative distribution function for the Students-T distribution with degrees of freedom, *df*, and

(4) $z = (-MinAVG_y - \gamma) / \theta$, for each year, y, and

for parameters γ ("Gamma") and θ ("Theta") to be estimated. The estimated values for γ and θ are shown in Table 5 along with the fitted values of the model CDF (the column: "Fitted" Model CDF).

Now, to calculate a *peak-day design temperature*, $TPDD_\delta$, with a specified likelihood, δ, that a value less than $TPDD_\delta$ would be observed, we use the equation below:

(5) $\delta = Prob\{ MinAVG_y \leq TPDD_\delta \}$, which is equivalent to

(6) $\delta = Prob\{ [(-MinAVG_y - \gamma) / \theta] \geq [(-TPDD_\delta - \gamma) / \theta] \}$,

and in terms of our probability model,

(7) $\delta = 1 - T\_Dist(z_\delta; df)$, or $(1 - \delta) = T\_Dist(z_\delta; df)$,

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where $z_\delta = [(-TPDD_\delta - \gamma) / \theta]$. The implied equation for $TPDD_\delta$ is:

(8) $TPDD_\delta = - [\gamma + (z_\delta \cdot \theta)]$.

To calculate the minimum daily (system average) temperature to define our extreme weather event, we specify that this COLDEST-Day be one where the temperature would be lower with a "1-in-35" likelihood. This criterion translates into two equations to be solved based on equations (7) and (8) above:

(9) solve for "z_δ" from $(1-\delta) = (1 - 1/35) = 1 - 0.029 = T\_Dist(z_\delta ; df)$,

(10) solve for "$TPDD_\delta$" from $TPDD_\delta = - [\gamma + (z_\delta \cdot \theta)]$.

The value of $z_\delta = 1.981$ and $TPDD_\delta = - [\gamma + (z_\delta \cdot \theta)] = 41.4$ degrees Fahrenheit, with values for "γ" and "θ" in Table 5, below.

SDG&E's Peak-Day design temperature of 43.1 degrees Fahrenheit, is calculated in a methodologically similar way as for the 41.4 degree peak day temperature. The criteria specified in equation (9) above for a "1-in-35" likelihood would be replaced by a "1-in-10" likelihood.

(9') solve for "z_δ" from $(1-\delta) = (1 - 1/10) = 1 - 0.100 = T\_Dist(z_\delta ; df)$,

a "z_δ" value of $z_\delta = 1.311$ and, $TPDD_\delta = - [\gamma + (z_\delta \cdot \theta)] = 43.1$, with values for "$\gamma$" and "$\theta$" in Table 5, below.

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Table 4

YEAR	MINAVG	Month(MinAvg)
1972	46.5625	Dec
1973	46.1375	Jan
1974	43.8000	Dec
1975	44.1375	Jan
1976	44.5875	Jan
1977	50.6625	Mar
1978	42.6375	Dec
1979	44.8500	Jan
1980	53.3750	Jan
1981	49.5000	Jan
1982	48.3500	Dec
1983	50.7000	Jan
1984	47.8500	Dec
1985	45.4000	Dec
1986	49.7250	Feb
1987	41.1750	Dec
1988	45.0750	Dec
1989	44.8750	Jan
1990	43.3750	Feb
1991	48.2500	Mar
1992	46.8750	Dec
1993	46.7500	Jan
1994	47.7500	Nov
1995	51.0000	Dec
1996	48.5250	Feb
1997	48.7250	Dec
1998	46.6750	Dec
1999	48.4250	Apr
2000	50.2500	Mar
2001	47.4250	Jan
2002	45.4000	Jan

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Table 5

alpha= 0.375

YEAR	Month(-MinAvg)	Days/Yr	-MinAvg	"RANK"	Empirical CDF	"Fitted" Model CDF
1980	Jan	366	-53.3750	1	0.0200	0.0150
1995	Dec	365	-51.0000	2	0.0520	0.0824
1983	Jan	365	-50.7000	3	0.0840	0.0992
1977	Mar	365	-50.6625	4	0.1160	0.1014
2000	Mar	366	-50.2500	5	0.1480	0.1290
1986	Feb	365	-49.7250	6	0.1800	0.1715
1981	Jan	365	-49.5000	7	0.2120	0.1924
1997	Dec	365	-48.7250	8	0.2440	0.2758
1996	Feb	366	-48.5250	9	0.2760	0.3000
1999	Apr	365	-48.4250	10	0.3080	0.3125
1982	Dec	365	-48.3500	11	0.3400	0.3221
1991	Mar	365	-48.2500	12	0.3720	0.3350
1984	Dec	366	-47.8500	13	0.4040	0.3884
1994	Nov	365	-47.7500	14	0.4360	0.4022
2001	Jan	365	-47.4250	15	0.4680	0.4478
1992	Dec	366	-46.8750	16	0.5000	0.5263
1993	Jan	365	-46.7500	17	0.5320	0.5441
1998	Dec	365	-46.6750	18	0.5640	0.5547
1972	Dec	366	-46.5625	19	0.5960	0.5706
1973	Jan	365	-46.1375	20	0.6280	0.6293
1985	Dec	365	-45.4000	21	0.6600	0.7233
2002	Jan	365	-45.4000	22	0.6920	0.7233
1988	Dec	366	-45.0750	23	0.7240	0.7605
1989	Jan	365	-44.8750	24	0.7560	0.7819
1979	Jan	365	-44.8500	25	0.7880	0.7845
1976	Jan	366	-44.5875	26	0.8200	0.8105
1975	Jan	365	-44.1375	27	0.8520	0.8502
1974	Dec	365	-43.8000	28	0.8840	0.8759
1990	Feb	365	-43.3750	29	0.9160	0.9034
1978	Dec	365	-42.6375	30	0.9480	0.9396
1987	Dec	365	-41.1750	31	0.9800	0.9790

Mean{-MinAvg}=	-47.06
St.Dev{-MinAvg}=	2.77
"Gamma" (Fitted) =	**-47.05**
"Theta" (Fitted) =	**2.85**
Deg. Freedom=	**29**

(END OF ATTACHMENT C)