ATTACHMENT B

240-001

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-I:

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.

(Continued on Page 2)

Response to ED-I: *(Continued)*

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). 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 CO2 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.

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).

Respondent: State Regulatory Affairs

Response:

No response is required.

240-002

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-II:

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

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

a) Residential end users.

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).

(Continued on Page 2)

Response to ED-II: *(Continued)*

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.

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.

(Continued on Page 3)

Response to ED-II: *(Continued)*

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.

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).

(Continued on Page 4)

Response to ED-II: *(Continued)*

Respondent: Demand Planning

Response:

1) a) Please see the attached worksheets. The tariff rate schedules associated with the residential classes of customers in the Southern California rate jurisdiction are: GS-10, Residential Gas Service; GS-11, Residential Gas Air Conditioning; GS-12, CARE Residential Gas Service; and GS-15, Secondary Residential Gas Service. The tariff rate schedules associated with the residential classes of customers in the Northern California rate jurisdiction are: GN-10, Residential Gas Service; GN-12, CARE Residential Gas Service; and GN-15, Secondary Residential Gas Service. The residential tariff rate schedules for the South Lake Tahoe district, which are included in the Northern California rate jurisdiction are: GT-211, Residential Gas Service and GLT-212, Limited Income Residential Gas Service. Southwest Gas acquired the South Lake Tahoe area from Avista Utilities in May 2005. There is no available data before that time period for South Lake Tahoe.

1) b) Please see the attached worksheets for responses to i) through iv).

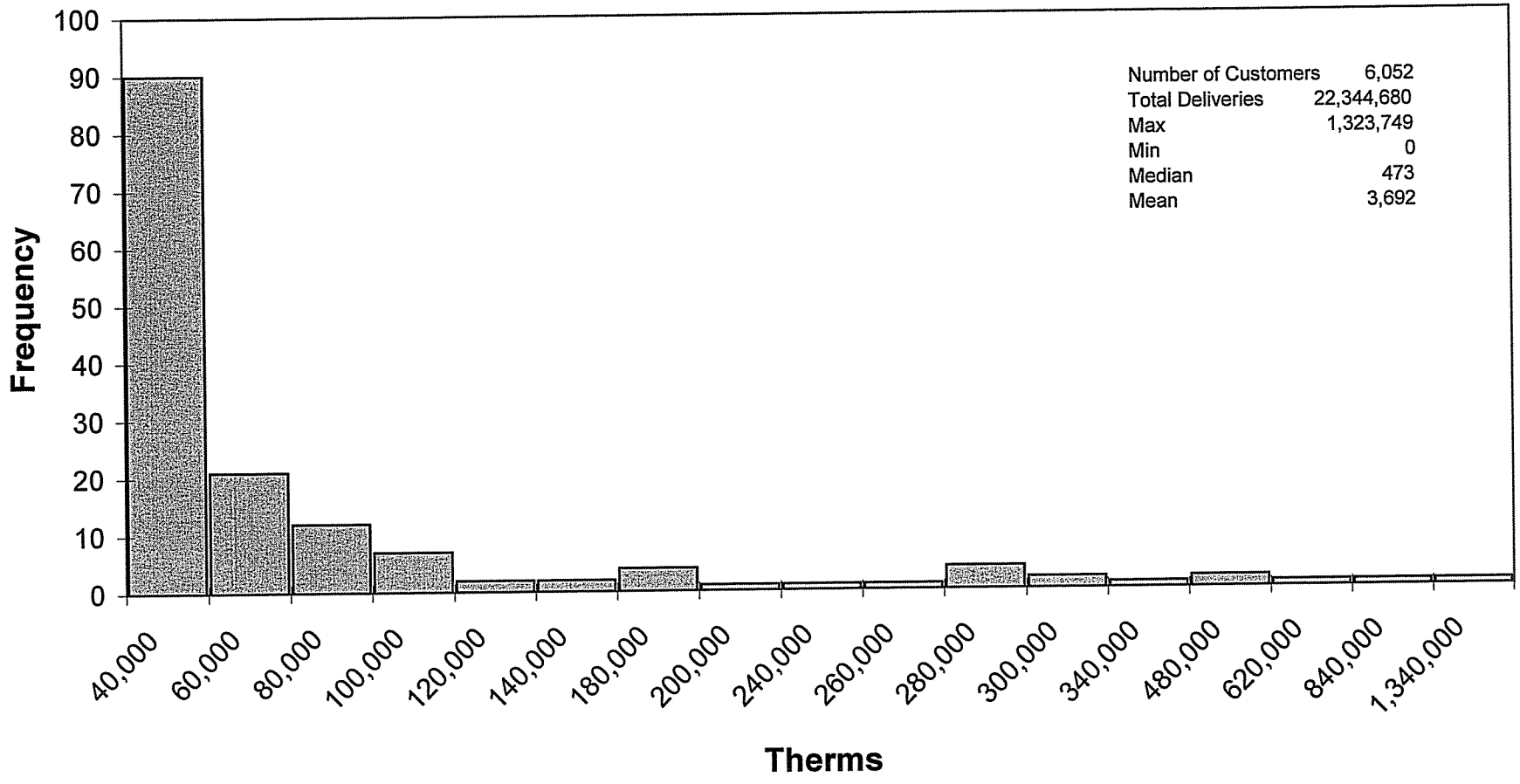
SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
CUSTOMERS AND DELIVERIES (MDth)

	2004	2005	2006
SOUTHERN CALIFORNIA			
Residential			
Deliveries	5,893	5,914	6,135
Customers	114,596	119,966	126,440
Non-Residential Tier 1 (< 2 Million Therms)			
Deliveries	2,234	2,217	2,440
Customers			
Non-CNG	6,052	6,118	6,200
CNG	6	6	6
Non-Residential Tier 2 (2 Million to < 3 Million Therms)			
Deliveries	222	524	0
Customers	1	2	0
Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)			
Deliveries	436	0	675
Customers	1	0	2
Non-Residential Tier 4 (4.5 Million or < Therms)			
Deliveries	1,914	1,492	1,488
Customers	2	1	1
NORTHERN CALIFORNIA			
Residential			
Deliveries	1,568	2,252	3,016
Customers	21,231	39,143	39,782
Non-Residential Tier 1 (< 2 Million Therms)			
Deliveries	376	1,120	1,255
Customers			
Non-CNG	1,299	2,896	2,936
CNG	1	2	2
Non-Residential Tier 2 (2 Million to < 3 Million Therms)			
Deliveries	0	0	0
Customers	0	0	0
Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)			
Deliveries	0	0	0
Customers	0	0	0
Non-Residential Tier 4 (4.5 Million or < Therms)			
Deliveries	0	0	0
Customers	0	0	0

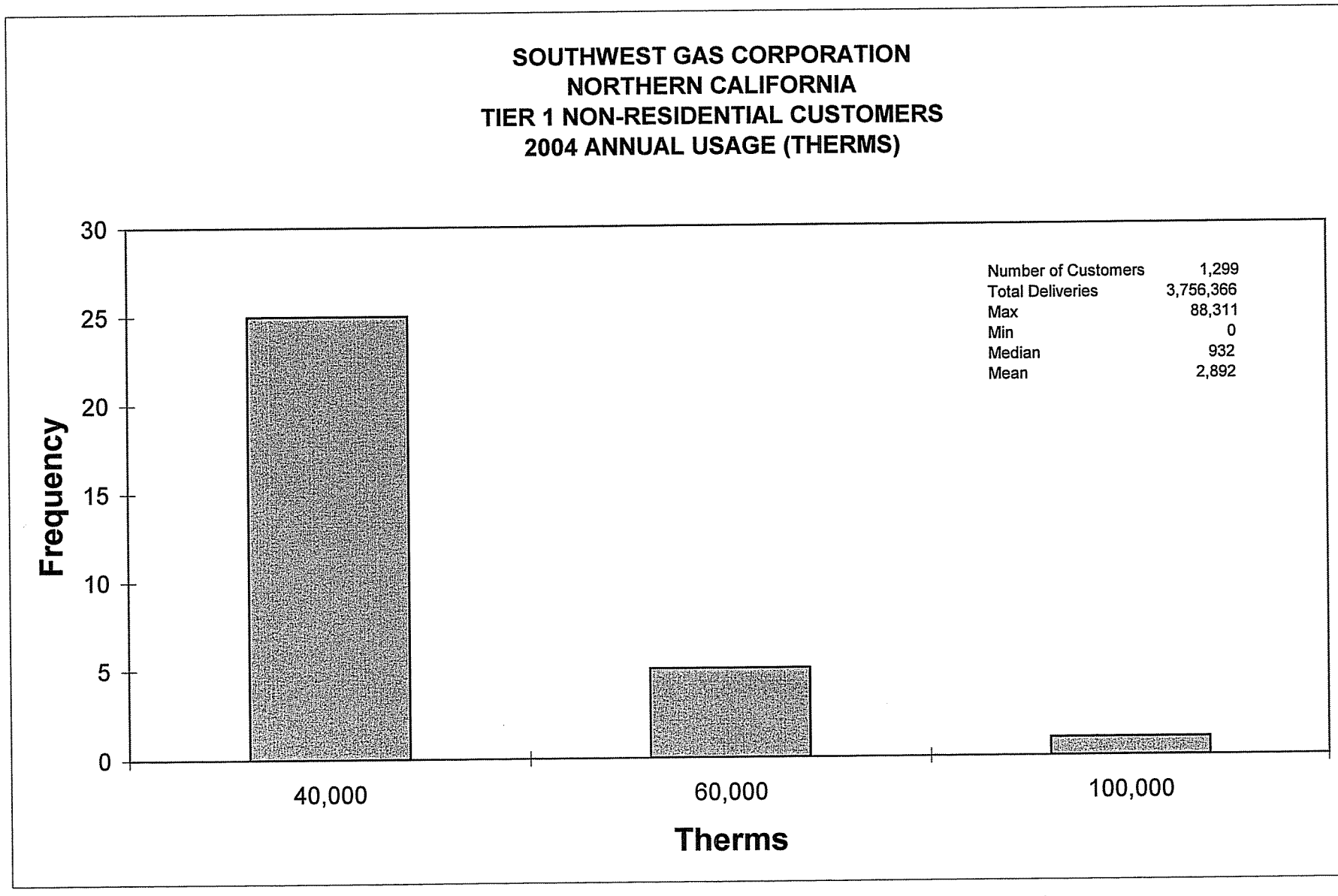
SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
NON-RESIDENTIAL DELIVERIES (MDth)

	2004	2005	2006
SOUTHERN CALIFORNIA			
Non-Residential Tier 1 (< 2 Million Therms)			
Non-CNG	2,171	2,155	2,386
CNG	64	62	55
Non-Residential Tier 2 (2 Million to < 3 Million Therms)			
Non-CNG			
541710	222	0	0
221112	0	258	0
221112	0	266	0
CNG	0	0	0
Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)			
Non-CNG			
221112	436	0	344
221112	0	0	331
CNG	0	0	0
Non-Residential Tier 4 (4.5 Million or < Therms)			
Non-CNG			
221112	521	0	0
327211	1,393	1,492	1,488
CNG	0	0	0
NORTHERN CALIFORNIA			
Non-Residential Tier 1 (< 2 Million Therms)			
Non-CNG	372	1,106	1,239
CNG	4	15	16
Non-Residential Tier 2 (2 Million to < 3 Million Therms)			
Non-CNG	0	0	0
CNG	0	0	0
Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)			
Non-CNG	0	0	0
CNG	0	0	0
Non-Residential Tier 4 (4.5 Million or < Therms)			
Non-CNG	0	0	0
CNG	0	0	0

SOUTHWEST GAS CORPORATION
SOUTHERN CALIFORNIA
TIER 1 NON-RESIDENTIAL CUSTOMERS
2004 ANNUAL DELIVERIES (THERMS)



Note: There are 5,899 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.



Note: There are 1,268 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2004 GREENHOUSE GAS EMISSIONS

Residential									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	5,893	MDth	5,893,000	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	311,562.91
CH4	5,893	MDth	5,893,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	5.30
N2O	5,893	MDth	5,893,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.59
Northern California									
CO2	1,568	MDth	1,568,000	MMBtu	53.02	kg CO2/MMBtu	0.0530200	Metric Tons	83,135.36
CH4	1,568	MDth	1,568,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.41
N2O	1,568	MDth	1,568,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.16

Non-Residential Tier 1 (< 2 Million Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2 (Non CNG)	2,171	MDth	2,170,581	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	114,758.62
CO2 (CNG)	64	MDth	63,887	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.34
CH4	2,234	MDth	2,234,468	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	2.01
N2O	2,234	MDth	2,234,468	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.22
Northern California									
CO2 (Non CNG)	372	MDth	371,829	MMBtu	53.02	kg CO2/MMBtu	0.0530200	Metric Tons	19,714.36
CO2 (CNG)	4	MDth	3,808	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.02
CH4	376	MDth	375,637	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.34
N2O	376	MDth	375,637	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.04

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2004 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 2 (2 Million to < 3 Million Therms)

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	222	MDth	221,711	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	11,721.84
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	222	MDth	221,711	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.20
N2O	222	MDth	221,711	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.02
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.02	kg CO2/MMBtu	0.0530200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	436	MDth	435,734	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	23,037.25
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	436	MDth	435,734	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.39
N2O	436	MDth	435,734	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.04
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.02	kg CO2/MMBtu	0.0530200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

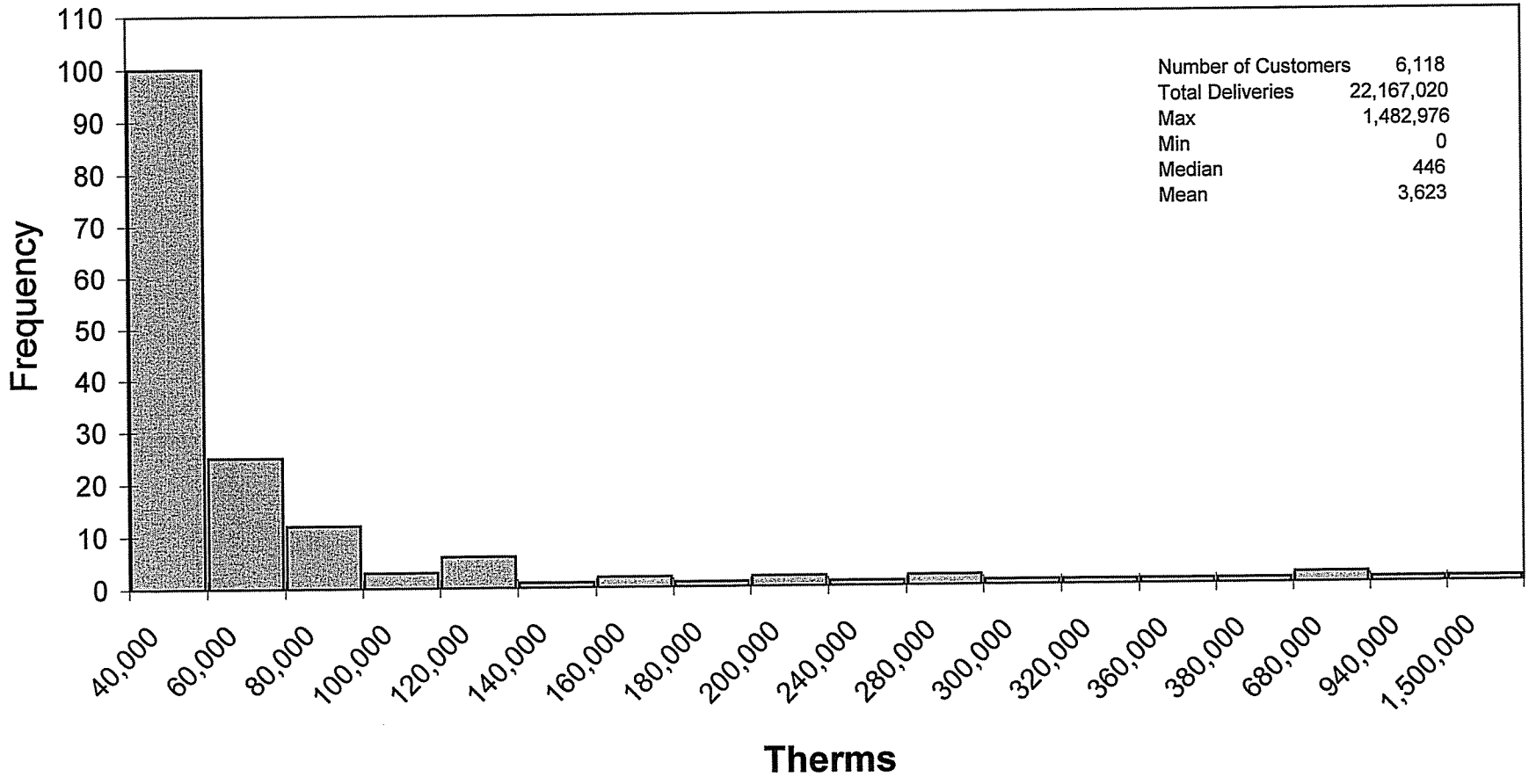
[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2004 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 4 (4.5 Million or < Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2 (Non CNG)	1,914	MDth	1,914,330	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	101,210.62
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	1,914	MDth	1,914,330	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.72
N2O	1,914	MDth	1,914,330	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.19
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.02	kg CO2/MMBtu	0.0530200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

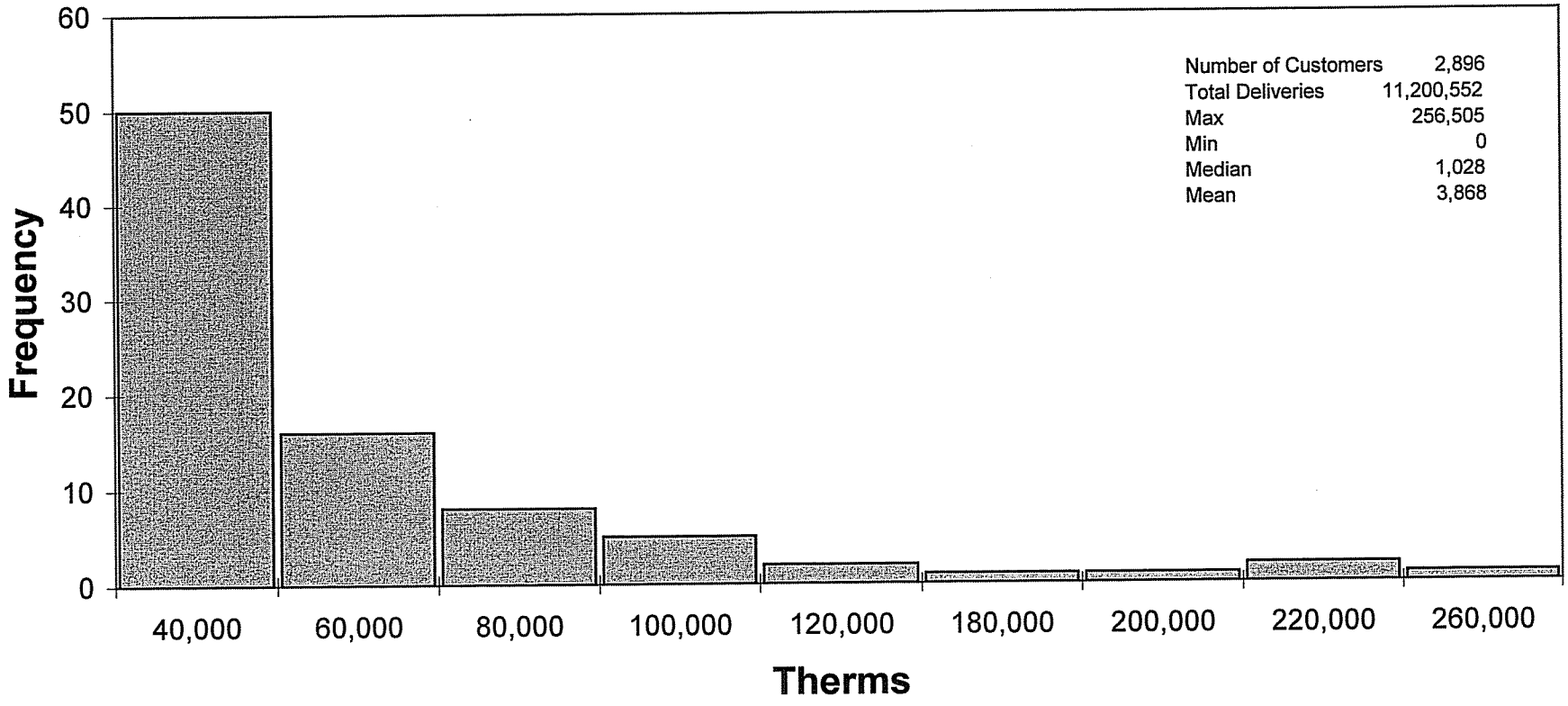
[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
SOUTHERN CALIFORNIA
TIER 1 NON-RESIDENTIAL CUSTOMERS
2005 ANNUAL DELIVERIES (THERMS)



Note: There are 5,955 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.

SOUTHWEST GAS CORPORATION
NORTHERN CALIFORNIA
TIER 1 NON-RESIDENTIAL CUSTOMERS
2005 ANNUAL USAGE (THERMS)



Note: There are 2,810 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2005 GREENHOUSE GAS EMISSIONS

Residential									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	5,914	MDth	5,914,000	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	312,673.18
CH4	5,914	MDth	5,914,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	5.32
N2O	5,914	MDth	5,914,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.59
Northern California									
CO2	2,252	MDth	2,252,000	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	120,301.84
CH4	2,252	MDth	2,252,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	2.03
N2O	2,252	MDth	2,252,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.23

Non-Residential Tier 1 (< 2 Million Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2 (Non CNG)	2,155	MDth	2,155,163	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	113,943.48
CO2 (CNG)	62	MDth	61,539	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.32
CH4	2,217	MDth	2,216,702	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	2.00
N2O	2,217	MDth	2,216,702	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.22
Northern California									
CO2 (Non CNG)	1,106	MDth	1,105,520	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	59,056.86
CO2 (CNG)	15	MDth	14,536	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.08
CH4	1,120	MDth	1,120,055	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.01
N2O	1,120	MDth	1,120,055	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.11

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2005 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 2 (2 Million to < 3 Million Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	524	MDth	524,295	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	27,719.47
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	524	MDth	524,295	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.47
N2O	524	MDth	524,295	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.05
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
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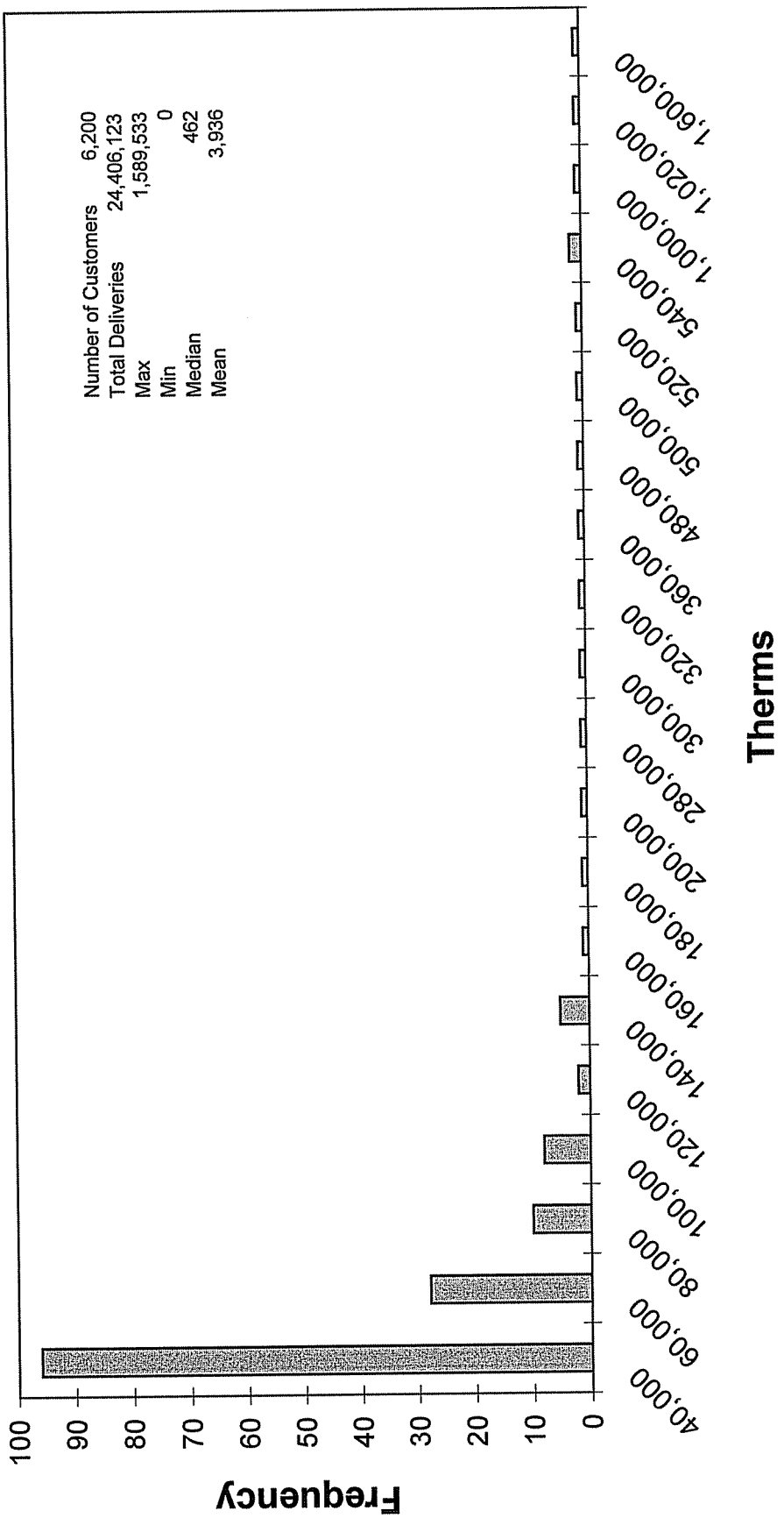
2005 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 4 (4.5 Million or < Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	1,492	MDth	1,491,587	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	78,860.18
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	1,492	MDth	1,491,587	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.34
N2O	1,492	MDth	1,491,587	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.15
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

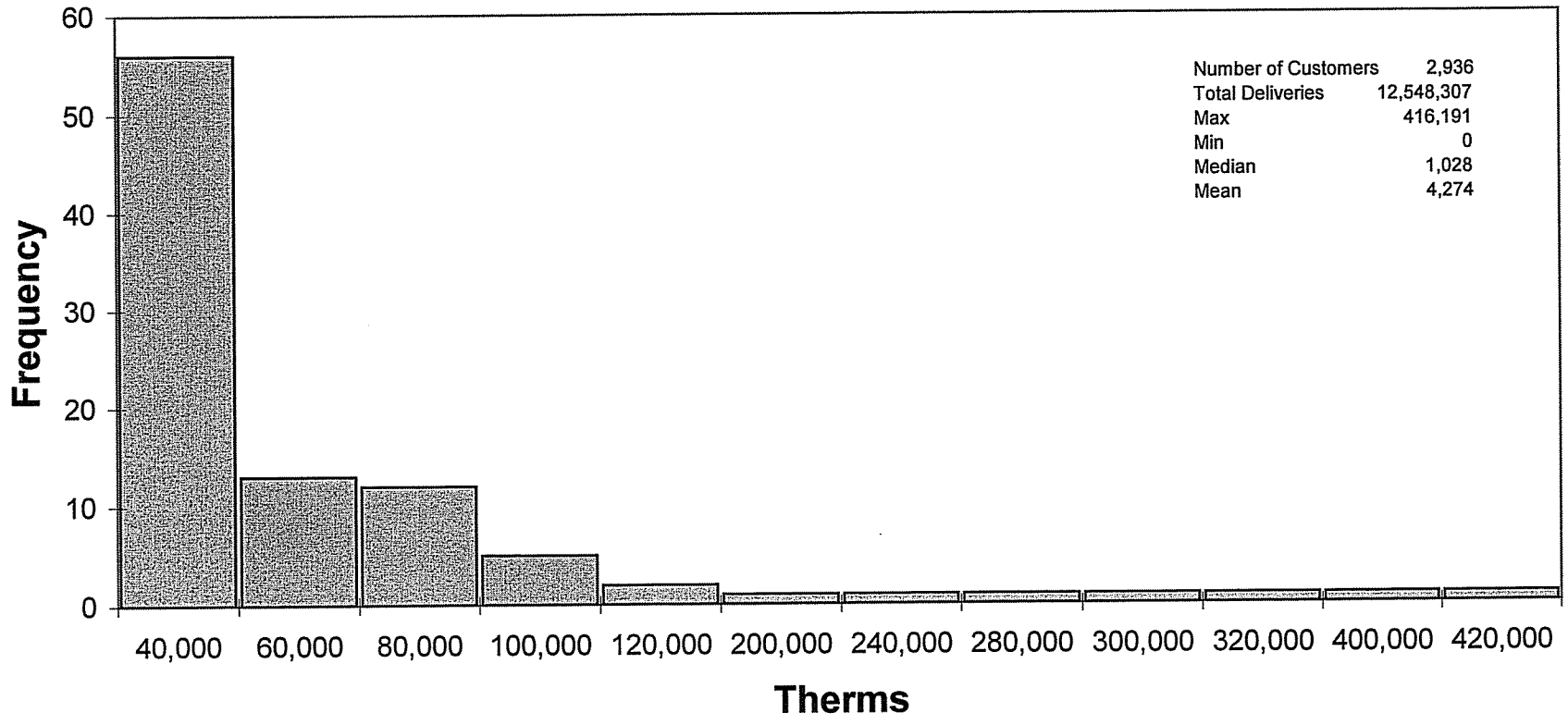
[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
SOUTHERN CALIFORNIA
TIER 1 NON-RESIDENTIAL CUSTOMERS
2006 ANNUAL DELIVERIES (THERMS)



Note: There are 6,036 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.

SOUTHWEST GAS CORPORATION
NORTHERN CALIFORNIA
TIER 1 NON-RESIDENTIAL CUSTOMERS
2006 ANNUAL USAGE (THERMS)



Note: There are 2,841 customers whose usage falls into the 0 - 20,000 therm category not represented on the chart.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2006 GREENHOUSE GAS EMISSIONS

Residential									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	6,135	MDth	6,135,000	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	324,357.45
CH4	6,135	MDth	6,135,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	5.52
N2O	6,135	MDth	6,135,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.61
Northern California									
CO2	3,016	MDth	3,016,000	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	161,114.72
CH4	3,016	MDth	3,016,000	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	2.71
N2O	3,016	MDth	3,016,000	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.30

Non-Residential Tier 1 (< 2 Million Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2 (Non CNG)	2,386	MDth	2,385,573	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	126,125.22
CO2 (CNG)	55	MDth	54,840	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.29
CH4	2,440	MDth	2,440,412	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	2.20
N2O	2,440	MDth	2,440,412	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.24
Northern California									
CO2 (Non CNG)	1,239	MDth	1,239,271	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	66,201.85
CO2 (CNG)	16	MDth	15,560	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.08
CH4	1,255	MDth	1,254,831	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.13
N2O	1,255	MDth	1,254,831	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.13

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2006 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 2 (2 Million to < 3 Million Therms)

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

Non-Residential Tier 3 (3 Million to < 4.5 Million Therms)

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			(b) x 1,000				(f) / 1,000		(d) x (h)
							[(f) / 1,000] / 1,000		
Southern California									
CO2 (Non CNG)	675	MDth	674,806	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	35,677.01
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	675	MDth	674,806	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.61
N2O	675	MDth	674,806	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.07
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-II
2006 GREENHOUSE GAS EMISSIONS

Non-Residential Tier 4 (4.5 Million or < Therms)									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor [1]	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2 (Non CNG)	1,488	MDth	1,488,012	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	78,671.18
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	1,488	MDth	1,488,012	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	1.34
N2O	1,488	MDth	1,488,012	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.15
Northern California									
CO2 (Non CNG)	0	MDth	0	MMBtu	53.42	kg CO2/MMBtu	0.0534200	Metric Tons	0.00
CO2 (CNG)	0	MDth	0	MMBtu	0.00528	kg CO2/MMBtu	0.0000053	Metric Tons	0.00
CH4	0	MDth	0	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.00
N2O	0	MDth	0	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The Carbon Dioxide Emission Factor for Transportation Fuels (CNG) has been converted from kg CO2/Therm to kg CO2/MMBtu.

240-003

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-III:

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

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

(Continued on Page 2)

Response to ED-III: (Continued)

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.

Respondent: Key Account Management

Response:

Please see the attached worksheets for the natural gas deliveries and estimated emissions for Southwest's Cogeneration/CHP customers. As the three customers are all topping-cycle generators, it is assumed all natural gas consumed was for electric generation.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-III
DELIVERIES TO COGENERATION CUSTOMERS AND ASSOCIATED GREENHOUSE GAS EMISSIONS

2004

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	35	MDth	35,110	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	1,856.27
CH4	35	MDth	35,110	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.03
N2O	35	MDth	35,110	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

2005

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	60	MDth	59,646	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	3,153.49
CH4	60	MDth	59,646	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.05
N2O	60	MDth	59,646	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.01

2006

Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
Southern California									
CO2	215	MDth	214,590	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	11,345.37
CH4	215	MDth	214,590	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.19
N2O	215	MDth	214,590	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.02

Note: There are no Cogeneration customers in the Northern California rate jurisdiction.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-III

CPUC Natural Gas Sector Data Request

ACCOUNT NUMBER	CUSTOMER	2004 VOLUMES	2005 VOLUMES	2006 VOLUMES
12018	CITY OF VIC-ASPEN	271,772	500,061	578,197
12020	CITY OF VIC-FOX			1,424,859
12022	DESERT VALLEY HOSPITAL		96,400	142,833
11001	RIMROCK VILLAGE APTS	79,328	0	10

For all customers listed above natural gas is used as a topping cycle to produce electricity.

240-004

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-IV:

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

Report volumes of natural gas deliveries to wholesale customers for each year 2004, 2005 and 2006. Wholesale customers are those entities that provide service to end users with natural gas received through connections with other California utilities. Wholesale customers may include investor or publicly owned utilities. Identify the wholesale customer and provide the volume of natural gas deliveries and associated GHG emissions assuming all the delivered natural gas is combusted.

Respondent: Demand Planning

Response:

Please see the attached worksheet. Southwest has only one customer under the GS-R, Sale for Resale tariff rate schedule, in the Southern California rate jurisdiction. This customer was reclassified from Transportation Service to Sale for Resale Service in August 2006. There are no customers with Sale for Resale Service in the Northern California rate jurisdiction.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-IV
DELIVERIES TO WHOLESALE CUSTOMERS AND ASSOCIATED GREENHOUSE GAS EMISSIONS

2006									
Pollutant	Deliveries/ Combustion	Combustion Unit	Conversion	Conversion Unit	Emission Factor	Emission Unit	Emission Conversion	Emission Conversion Unit	Annual Emissions
(a)	(b)	(c)	(d) (b) x 1,000	(e)	(f)	(g)	(h) (f) / 1,000 [(f) / 1,000] / 1,000	(i)	(j) (d) x (h)
City of Victorville-SCLA [1]									
CO2	14	MDth	13,618	MMBtu	52.87	kg CO2/MMBtu	0.0528700	Metric Tons	719.99
CH4	14	MDth	13,618	MMBtu	0.9	g CH4/MMBtu	0.0000009	Metric Tons	0.01
N2O	14	MDth	13,618	MMBtu	0.1	g N2O/MMBtu	0.0000001	Metric Tons	0.00

[1] The City of Victorville-SCLA was reclassified from Transportation Service to Sale for Resale Service in August of 2006.

240-005

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-V:

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

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

Respondent: Demand Planning

Response:

Southwest does not have any customers who use natural gas as a feedstock in either its Southern or Northern California rate jurisdictions.

240-006

SOUTHWEST GAS CORPORATION
(U 905 G)
* * *
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
* * *
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-VI:

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

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

(Continued on Page 2)

Response to ED-VI: *(Continued)*

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.

Respondent: Engineering Staff

Response:

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

Source Type	CO_2 Equivalents (lbs. per year) 2004 (preliminary)	2005 (preliminary)	2006 (being certified)
Mobile Combustion	7,650,340	2,518,034	3,009,261
Fugitive & Vented	79,169,807	84,851,339	118,712,387
Refrigerant usage	204,826	152,665	394,898
Stationary Combustion	518,430	490,887	520,058
Electricity Usage	583,526	561,691	707,739

In the spring of 2005, Southwest Gas Corporation (Southwest) initiated a program to quantify and track emissions of greenhouse gases (GHGs) attributed to their operations in the state of California. A Greenhouse Gas Inventory Management Plan (GHGIMP) was developed to guide the process of data collection, emissions calculations, and verification of a GHG inventory. The GHGIMP makes use of existing electronic reporting tools allowing for efficient implementation of the GHG emission inventory process in the first year of the program and in subsequent inventory years. Upon completion of Southwest's first California GHG inventory in 2005 for 2004 emissions, improvements were made in activity data collection methods and subsequent changes to the GHGIMP became necessary. The second California GHG inventory in 2006, for 2005 emissions, resulted in further improvements in data collection methods. The inventory for calendar year 2006 was completed using the updated data collection and calculation methodologies.

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Response to ED-VI: *(Continued)*

Calendar year 2006 is the first GHG inventory to be submitted to California Climate Action Registry (CCAR) and certified. GHG emissions were calculated and reported for sources within California based on operational control, as defined by the CCAR General Reporting Protocol Version 2.2 (GRP). Emissions from subcontractors and other Southwest entities in the state of California not under direct operational control of Southwest were not included in the inventory.

All six Kyoto gases (per the CCAR GRP) were evaluated in the GHG inventory; however, missions relevant to Southwest's operation only include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and hydro fluorocarbons (HFCs). Southwest's California operations do not use or emit per fluorocarbons (PFCs) and sulfur hexafluoride (SF6). Emissions were calculated and reported as carbon dioxide equivalent (CO2e).

The GHGIMP is Southwest's protocol for producing a greenhouse gas (GHG) emission inventory that meets the standards and requirements of the California Climate Action Registry (CCAR).

The methodology in this protocol is based on CCAR's General Reporting Protocol Version 2.2 (GRP) and supporting documentation from the Gas Research Institute (GRI), the Interstate Natural Gas Association of America, the International Petroleum Industry Environmental Conservation Association, EPA Climate Leaders, the World Resources Institute/World Business Council for Sustainable Development and the Draft AGA Greenhouse Gas Emission Estimation Methodologies; Procedures, and Guidelines for the Natural Gas Distribution Sector (Guidelines). Other guidance documents were used as needed when the CCAR GRP lacked sufficient detail. The source of emission factors used for calculating emissions is listed in the table below.

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Response to ED-VI: *(Continued)*

Emission Source Type	Emission Factors Source
Mobile Combustion Fleet Vehicles	CCAR General Reporting Protocol, Appendix C, Tables C.3 & C.4
Mobile Combustion Small Portable	DRAFT AGA Greenhouse Gas Emission Estimation Methodologies, Procedures, and Guidelines for the Natural Gas Distribution Sector (February 16, 2007), Ch. 6, pg. 74, Table 6.6.
Fugitive	Draft "Greenhouse Gas Emissions Estimation Methodologies, Procedures, and Guidelines for the Natural Gas Distribution Sector" (February 16, 2007) Ch. 4, Table
Vented	For Distribution: Draft "Greenhouse Gas Emissions Estimation Methodologies, Procedures, and Guidelines for the Natural Gas Distribution Sector" (February 16, 2007) Ch. 4, Table 4-2. For Transmission: GRI-Tier 3.
Refrigerant Usage	Alliance for Responsible Atmospheric Policy, Global comparative analysis of HFC and Alternative Technologies for Refrigeration, Air Conditioning, Foam, Solvent, Aerosol Propellant, and Fire protection Applications, Final Report (March 2002), at http://www.arap.org/adlittle/toc.html.
Stationary Combustion	CCAR General Reporting Protocol, Version 2.2 (March 2007), Appendix C, Tables C.1 & C.2.
Electricity Usage	CCAR Adjusted Average Electricity Emission Factors - California

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Response to ED-VI: *(Continued)*

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:

Source Type	Volume of Combusted Natural Gas 2004 (non certified)	2005 (non certified)	2006 (being certified)
Fuel Compressors	0	0	0
Other Equipment	0	0	0
Fleet Vehicles	14,291	19,461	17,559
Flared	0	0	0

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:

Source Type	Non CO_2 Gas Released in 2006 (in lbs.) Methane (CH_4)	Nitrous Oxide (N_2O)	Hydro fluorocarbons (HFCs)
Mobile Combustion	1,333	465	150
Fugitive	4,910.088	0	0
Vented	730,169	0	0
Refrigerant usage	0	0	116
Stationary Combustion	58	1	0
Electricity Usage	6	3	0

240-007

SOUTHWEST GAS CORPORATION
(U 905 G)
*** * ***
CALIFORNIA PUBLIC UTILITIES COMMISSION
ORDER INSTITUTING RULEMAKING 06-04-009
TO IMPLEMENT THE COMMISSION'S PROCUREMENT INCENTIVE FRAMEWORK AND TO EXAMINE THE INTEGRATION OF GREENHOUSE GAS EMISSIONS STANDARDS INTO PROCUREMENT POLICIES
AND
CALIFORNIA ENERGY COMMISSION
DOCKET NO. 07-OIIP-1
IN THE MATTER OF:
AB 32 IMPLEMENTATION: GREENHOUSE GASES
*** * ***
NATURAL GAS SECTOR DATA REQUEST
DATA REQUEST NO. ED-1
(ED-I THROUGH ED-VII)

DOCKET NO.: N/A
COMMISSION: CALIFORNIA PUBLIC UTILITIES COMMISSION
DATE OF REQUEST: NOVEMBER 6, 2007

Request No. ED-VII:

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

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

Respondent: Demand Planning

Response:

Please see the attached worksheet. Since weather conditions can be different between the districts of a single rate jurisdiction, the impact of weather on natural gas usage is best represented by the district with the largest number of customers and, therefore, the largest volume of deliveries. Comparing actual Heating Degree

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Response to ED-VII: *(Continued)*

Days (HDDs) to 20-Year Normal HDDs in the Southern California rate jurisdiction, the district with the largest number of customers, Victorville, experienced a warmer than normal twelve-month period for each of the years of 2004, 2005 and 2006. It is therefore expected that natural gas usage by customers during those years was less than that of a normal year. In the Northern California rate jurisdiction, all districts experienced colder than normal weather for each of the years of 2004, 2005 and 2006. Therefore, it is expected that natural gas usage by customers during these years was greater than that of a normal year. It should be noted that a 20-Year Normal was used for purposes of this data request only, and that, as a rule, Southwest uses a 10-Year Weather Normal in other regulatory proceedings, including general rate cases.

SOUTHWEST GAS CORPORATION
CPUC RULEMAKING 06-04-009
CEC DOCKET NO. 07-OIIIP-01
RESPONSE TO CPUC DATA REQUEST NO. ED-VII
ACTUAL VS. 20-YEAR NORMAL WEATHER

	2004				2005				2006			
Month	Customers	Actual HDDs	20 - Year Normal [1]	(Warmer)/ Colder Than Normal	Customers	Actual HDDs	20 - Year Normal	(Warmer)/ Colder Than Normal	Customers	Actual HDDs	20 - Year Normal [1]	(Warmer)/ Colder Than Normal
Southern California												
District 11 - Barstow	11,220	2,445.5	2,252.0	193.5	11,311	2,315.0	2,225.5	89.5	11,383	2,438.5	2,241.0	197.5
District 12 - Victorville	88,368	2,778.5	2,837.5	(59.0)	93,425	2,631.0	2,806.5	(175.5)	99,621	2,746.0	2,807.0	(61.0)
District 13 - Big Bear	19,253	6,281.5	6,381.0	(99.5)	19,522	6,235.0	6,360.0	(125.0)	19,769	6,067.5	6,359.5	(292.0)
District 19 - Needles	1,782	1,202.0	1,141.0	61.0	1,816	848.0	1,112.5	(264.5)	1,862	912.5	1,117.0	(204.5)
Northern California												
District 14 - No. California	11,266	7,524.0	7,445.0	79.0	11,350	7,802.0	7,425.0	377.0	11,424	7,667.0	7,448.5	218.5
District 15 - Truckee	11,265	7,821.5	7,498.0	323.5	11,785	7,812.5	7,484.0	328.5	12,239	7,736.5	7,514.0	222.5
District 16 - South Lake Tahoe	0	8,076.0	7,810.0	266.0	18,896	8,001.0	7,819.0	182.0	19,054	7,854.5	7,846.0	8.5

[1] Southwest Gas does not use a 20-Year Normal to weather normalize data in General Rate Case proceedings. A 10-Year Normal is used.

(END OF ATTACHMENT B)