2004 California Gas Report

PREPARED BY THE CALIFORNIA GAS UTILITIES

2004 CALIFORNIA GAS REPORT

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FOREWORD

The 2004 California Gas Report presents a comprehensive outlook for natural gas requirements and supplies for California through the year 2025. This report is prepared in even-numbered years, followed by a supplemental report in odd-numbered years, in compliance with California Public Utilities Commission Decision D.95-01-039. The projections in the California Gas Report are for long-term planning and do not necessarily reflect the day-to-day operational plans of the utilities.

The report is organized into three sections: Executive Summary, Northern California, and Southern California. The Executive Summary provides statewide highlights and consolidated tables on supply and demand. The Northern California section provides detail on requirements and supplies of natural gas for Pacific Gas and Electric Company (PG&E) the Sacramento Municipal Utility District (SMUD) and Wild Goose Storage, Inc. The Southern California section shows similar detail for Southern California Gas Company (SoCalGas), the City of Long Beach Energy Department, San Diego Gas & Electric Company, and the City of Los Angeles Department of Water and Power.

Each participating utility has provided a narrative explaining its assumptions and outlook for natural gas requirements and supplies, including tables showing data on natural gas availability by source, with corresponding tables showing data on natural gas requirements (demand) by customer class. Separate sets of these tables are presented for average cold and hot temperature year conditions. Any forecast, however, is subject to considerable uncertainty. Changes in the economy, energy and environmental policies, natural resource availability, and the continually evolving restructuring of the gas and electric industries can significantly affect the reliability of these forecasts. The further into the future a forecast extends, the more susceptible it is to inaccuracy. This report should not be used by readers as a substitute for full, detailed analysis of their own specific energy requirements.

A Working Committee, comprised of representatives from each utility, was responsible for compiling the report. The membership of this Committee is listed in the Respondents section at the end of this report.

2004 California Gas Report

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Demand Outlook

California natural gas demand, including volumes bypassing utility systems, is expected to grow at an annual average rate of 0.6 percent from 2004 to 2025. Forecast growth is a combination of strong growth in the electric generation (EG) market segment tempered by slower growth in the residential and commercial markets and virtually no growth in the industrial sector.

EG gas demand is expected to increase at an annual average rate of 1.4 percent due to the assumptions that gas-fired generation continues to be the technology of choice to meet the ever-growing demand for electric power. Residential and commercial sector consumption is expected to increase by an average of 0.9 percent per year over the forecast period. This rate of growth is roughly two-thirds the rate of growth in underlying drivers such as household and employment growth and reflects increasing penetration of energy efficient homes and appliances. Demand in the industrial sector is estimated to decline by 0.1 percent annually as California continues its transition from a manufacturing based to a service based economy.

Focus On Efficiency and Environmental Quality

California utilities continue to focus on Customer Energy Efficiency (CEE) and other Demand-Side Management (DSM) programs in their utility electric and gas resource plans. The recent "energy crisis" in California was not limited to electricity. Gas resources were also severely constrained with gas prices at the Southern California border reaching levels nearly ten times greater than experienced in recent history. California utilities are committed to helping their customers make the best possible choices regarding use of this increasingly valuable resource.

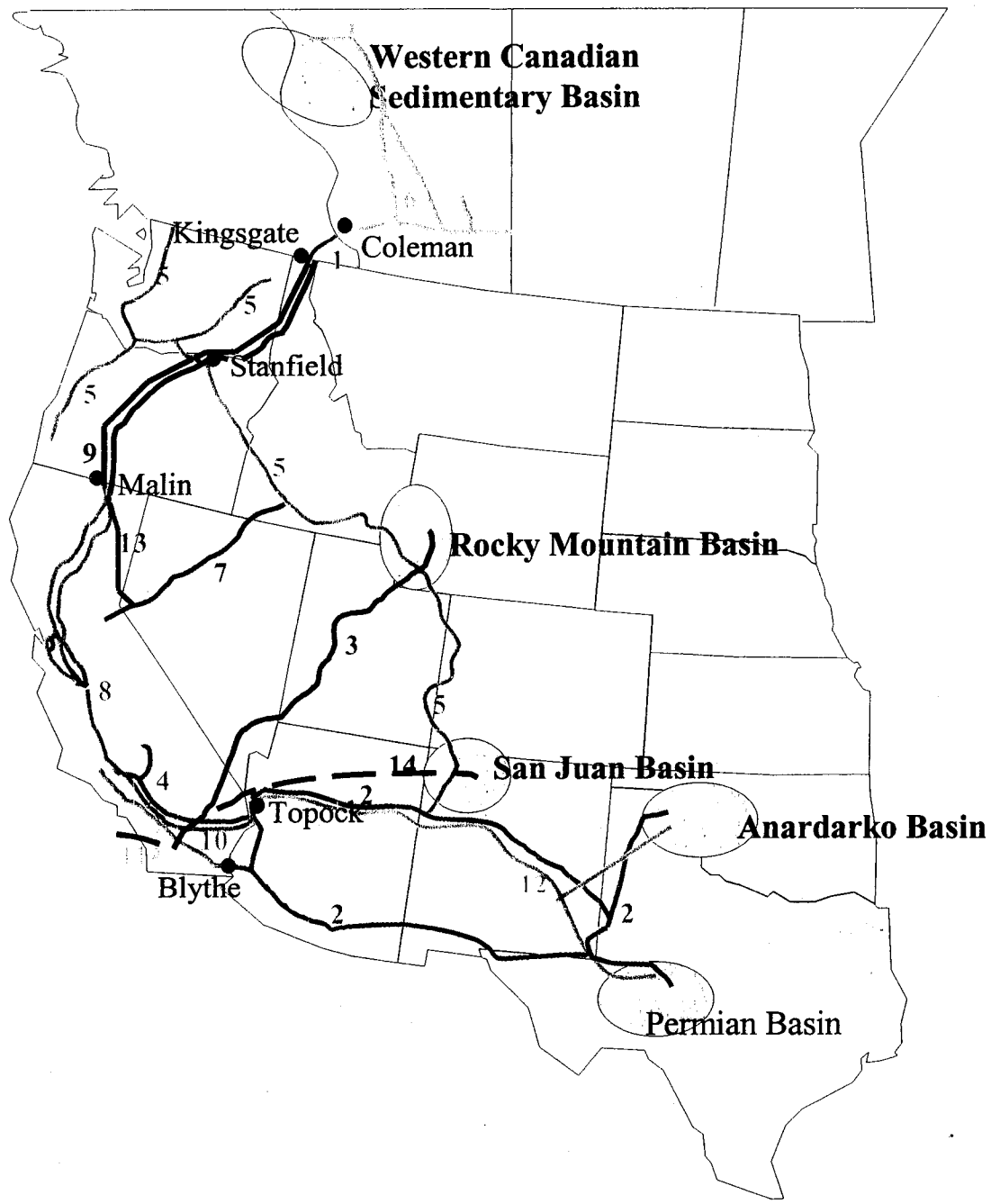
Supply Outlook/ Pipeline Capacity

California's existing gas supply portfolio is regionally diverse and includes supplies from California sources (onshore and offshore), Southwestern U.S. supply sources (the Permian, Anadarko, and San Juan Basins), the Rocky Mountains, and Canada. The map provided on page 7 shows the locations of these supply sources and the natural gas pipelines serving California.

Additional pipeline capacity and open access have contributed to long-term supply availability and gas-on-gas competition. Interstate pipelines currently serving California include El Paso Natural Gas Company (El Paso), Kern River Transmission Company (Kern River), Mojave Pipeline Company (Mojave), Gas Transmission-Northwest, Transwestern Pipeline Company (Transwestern), Southern Trails Pipeline, and Tuscarora Pipeline.

Natural Gas Projects: Proposals, Completions, and Liquefied Natural Gas

Over the past three years, California natural gas utilities, interstate pipelines, and instate natural gas storage facilities have increased their delivery and receipt capacity to meet natural gas demand growth. In addition, more projects have been proposed and some are under construction. The California Energy Commission (Energy Commission) posts a list of natural gas projects on their website, which track both completed projects and ones that are being developed or in the proposal stage, along with proposed LNG projects. To review these project lists check the Energy Commission's website at www.energy.ca.gov, "completed projects", "pending projects", and "LNG projects".



WESTERN NORTH AMERICAN NATURAL GAS PIPELINES

(Not to scale)

1	ANG
2	El Paso
3	Kern River
4	Mojave
5	Northwest
6	NOVA
7	Paiute
8	PG&E
9	GT-NW
10	SoCalGas
11	SDG&E
12	Transwestern
13	Tuscarora
14	Southern Trails

Statewide Consolidated Summary Tables

The consolidated summary tables on the following pages show the statewide aggregations of gas supplies and gas requirements (demand).

Gas sales and transportation volumes are consolidated under the general category of system gas requirements. Details of gas transportation for individual utilities are given in the tabular data for northern California and southern California. The wholesale category includes the City of Long Beach Gas and Electric Department, San Diego Gas & Electric Company, Southwest Gas Corporation, Los Angeles Department of Water and Power, Alpine Natural Gas, Island Energy, West Coast Gas, Inc, and the municipalities of Coalinga and Palo Alto. Wholesale gas service to the City of Vernon is scheduled to commence during the forecast period.

Some columns may not sum precisely because of modeling accuracy and rounding differences, and do not imply curtailments.

STATEWIDE TOTAL SUPPLY SOURCES AND REQUIREMENTS
MMCF/DAY

Total California's Supply Sources	2004	2005	2008	2016	2020	2025
California Sources	660	660	660	660	660	660
Out-of-State	3,994	3,850	4,144	4,294	4,523	4,856
Net Withdrawal (Injection)	-	-	-	-	-	-
Utility Total	4,654	4,510	4,804	4,954	5,183	5,516
Pipeline Bypass (1)	1,228	1,278	1,374	1,432	1,422	1,405
Total	5,882	5,788	6,178	6,386	6,605	6,921

Total California's Requirements	2004	2005	2008	2016	2020	2025
Residential	1,249	1,265	1,291	1,399	1,448	1,510
Commercial	494	493	504	531	544	563
Natural Gas Vehicles	22	25	30	32	40	46
Industrial	770	750	749	744	740	738
Electric Generation (2)	1,201	1,115	1,197	1,224	1,378	1,617
Enhanced Oil Recovery	41	41	41	10	10	10
Wholesale/Resale	379	334	442	455	463	485
Company Use and Unaccounted for	85	83	88	91	96	102
Utility Total	4,241	4,106	4,342	4,486	4,729	5,071
Pipeline Bypass (1)	1,097	1,147	1,243	1,301	1,291	1,274
Total	5,338	5,253	5,585	5,787	6,010	6,345

NOTES:
(1) Bypass is defined in the Glossary.
(2) Includes utility and non-utility generation.

STATEWIDE TOTAL SUPPLY SOURCES - TAKEN
MMCF/DAY

Northern California	2004	2005	2008	2016	2020	2025
California Sources (1)	150	150	150	150	150	150
Out-of-State	2,148	2,138	2,303	2,439	2,587	2,773
Net Withdrawal/(Injection)	-	-	-	-	-	-
Utility Total	2,298	2,288	2,453	2,589	2,737	2,923
Pipeline Bypass (2)	440	440	440	440	440	440
Northern California Total	2,738	2,728	2,893	3,029	3,177	3,363

Southern California	2004	2005	2008	2016	2020	2025
California Sources (1)	510	510	510	510	510	510
Out-of-State	1,946	1,712	1,841	1,855	1,936	2,083
Net Withdrawal/(Injection)	-	-	-	-	-	-
Utility Total	2,356	2,222	2,351	2,365	2,446	2,593
Pipeline Bypass (2)	788	838	934	992	982	965
Southern California Total	3,144	3,060	3,285	3,357	3,428	3,558

NOTES:
(1) Includes utility purchases and exchange/transport gas.
(2) Bypass is defined in the Glossary.

STATEWIDE ANNUAL GAS REQUIREMENTS (1)
MMCF/DAY

Northern California	2004	2005	2008	2016	2020	2025
Residential	562	572	592	639	658	680
Commercial-Core	233	236	243	257	263	273
Natural Gas Vehicles-Core	3	4	5	6	6	7
Natura Gas Vehicles-Noncore	1	1	1	1	1	1
Industrial-Noncore	410	409	410	397	390	381
Wholesale/Resale	10	10	11	11	11	11
SMUD Electric Generation	59	82	128	128	128	128
Electric Generation (2)	632	623	702	784	911	1,070
Southwest Gas Exchange	-	-	7	9	9	9
Company Use and Unaccounted for	41	41	44	47	50	53
Utility Total	1,951	1,978	2,143	2,279	2,427	2,613
Pipeline Bypass (3)	440	440	440	440	440	440
Northern California Total	2,391	2,418	2,583	2,719	2,867	3,053

Southern California	2004	2005	2008	2016	2020	2025
Residential	687	693	697	760	790	830
Commercial-Core	200	202	206	217	223	231
Commercial-Noncore	57	55	55	57	58	59
Natural Gas Vehicles-Core	18	20	34	30	33	38
Industrial-Core	58	59	59	62	63	67
Industrial-Noncore	302	282	280	285	287	290
Wholesale/Resale	369	324	431	444	452	474
Electric Generation	569	492	495	440	467	527
Enchanced Oil Recovery - Steaming	41	41	41	10	10	10
Company Use and Unaccounted for	44	42	44	44	46	49
Utility Total	2,603	2,210	2,342	2,349	2,429	2,575
Pipeline Bypass (3)	788	838	934	992	982	965
Southern California Total	3,391	3,048	3,276	3,341	3,411	3,540

NOTES:

(1) Includes transportation gas.

(2) Electric Generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.

(3) Bypass is defined in the Glossary.

Statewide Sources and Disposition

The Statewide Sources and Disposition Summary is intended to complement the existing five-year recorded data tables included in the tabular data sections for each utility.

The information shown on the following tables shows by customer class the composition of supplies from both out-of-state and California sources and is based on the utilities' accounting records and on available gas nomination and preliminary gas transaction information obtained daily from customers or their appointed agents and representatives. It should be noted that data on daily gas nominations are frequently subject to reconciling adjustments. In addition, some of the data are based on allocations and assignments, which, by necessity, rely on estimated information. These tables have been updated to reflect the most current information.

Some columns may not sum exactly because of factored allocation and rounding differences, and do not imply curtailments.

2004 California Gas Report
Recorded 1999 Statewide Sources and Disposition Summary
MMcf/Day

	California Sources	El Paso	Trans western	PG&E	Kern River	Mojave	Other [1]	Total
Southern California Gas Company								
Core (2)	97	557	276	44	19	47	(23)	1,018
Noncore Commercial/Industrial	59	175	87	48	49	12	18	448
EG (3)	117	349	173	95	98	25	0	856
EOR	3	10	5	3	3	1	0	25
Wholesale/Resale/International (4)	55	164	81	45	46	12	11	413
Total	330	1,255	622	235	215	97	6	2,761
Pacific Gas and Electric Company (5)								
Core	8	134	76	595	62	0	0	875
Noncore Commercial/Industrial	134	196	52	824	28	0	31	1,265
EG (3)	6	19	12	46	16	0	3	103
Wholesale/Resale	3	4	3	5	4	0	0	19
Total	151	353	143	1,470	110	0	34	2,262
Other Northern California								
Core (5)	0	0	0	0	0	0	11	11
Non-Utilities								
Direct Sales/Bypass	508	0	0	0	296	294	0	1,098
TOTAL SUPPLIER	989	1,608	765	1,705	621	391	51	6,132

NOTES:

(1) Includes storage withdrawals.

(2) Includes NGV volumes.

(3) EG includes UEG, COGEN, and EOR Cogen.

(4) Includes DGN volumes and SDG&E data as shown.

San Diego Gas & Electric Company (6)							
Core	12	69	33	29	0	0	5	148
Noncore	7	120	57	14	0	0	3	201
Total	19	189	90	43	0	0	8	349

(5) Includes Southwest Gas Corp., Avista and Tuscarora data.

(6) SDG&E data revised from previous reports.

2004 California Gas Report
Recorded 2000 Statewide Sources and Disposition Summary
MMcf/Day

	California Sources	El Paso	Trans western	PG&E GT-NW	Kern River	Mojave	Other (1)	Total
Southern California Gas Company								
Core (2)	28	600	263	11	6	40	10	957
Noncore Commercial/Industrial	49	167	80	53	48	11	55	463
EG (3)	144	492	235	155	141	32	0	1,199
EOR	4	14	6	4	4	1	0	33
Wholesale/Resale/International (4)	52	178	85	56	51	12	13	446
Total	276	1,450	670	278	250	95	78	3,098
Pacific Gas and Electric Company								
Core	12	130	79	604	28	0	0	853
Noncore Commercial/Industrial	142	255	101	929	17	0	0	1,444
EG (3)	7	8	7	8	7	0	0	37
Wholesale/Resale	2	1	2	2	0	0	0	7
Total	163	394	189	1,543	52	0	0	2,341
Other Northern California								
Core (5)	0	0	0	0	0	0	11	11
Non-Utilities								
Direct Sales/Bypass	552	0	0	0	294	243	0	1,089
TOTAL SUPPLIER	991	1,844	859	1,821	596	338	87	6,536

NOTES:

(1) Includes storage withdrawals.

(2) Includes NGV volumes.

(3) EG includes UEG, COGEN, and EOR Cogen.

(4) Includes DGN volumes and SDG&E data as shown.

San Diego Gas & Electric Company (6)								
Core	9	63	25	36	0	0	5	139
Noncore Commercial/Industrial	1	171	70	6	0	0	1	250
Total	10	234	95	42	0	0	6	388

(5) Includes Southwest Gas Corp., Avista and Tuscarora data.

(6) SDG&E data revised from previous reports.

2004 California Gas Report
Recorded 2001 Statewide Sources and Disposition Summary
MMcf/Day

	California Sources	El Paso	Trans western	PG&E GT-NW	Kern River	Mojave	Other [1]	Total
Southern California Gas Company								
Core (2)	38	556	274	58	30	10	31	998
Noncore Commercial/Industrial	82	204	91	47	53	14	(93)	399
EG (3)	209	522	233	121	136	36	0	1,257
EOR	5	12	5	3	3	1	0	29
Wholesale/Resale/International (4)	80	201	90	47	52	14	(9)	475
Total	415	1,495	694	276	275	75	(70)	3,158
Pacific Gas and Electric Company								
Core	29	110	94	574	6	0	0	813
Noncore Commercial/Industrial/EG/Resale (3)	157	563	81	864	78	0	0	1,743
Total	186	673	175	1,438	84	0	0	2,556
Other Northern California								
Core (5)	0	0	0	0	0	0	11	11
Non-Utilities								
Direct Sales/Bypass	417	0	0	0	319	208	0	945
TOTAL SUPPLIER	1,018	2,168	869	1,714	678	283	(61)	6,668
San Diego Gas & Electric Company (6)								
Core	9	45	17	43	4	4	16	136
Noncore Commercial/Industrial	1	205	77	3	0	0	1	288
Total	9	250	94	46	4	4	17	424

NOTES:

(1) Includes storage activities.

(2) Includes NGV volumes.

(3) EG includes UEG, COGEN, and EOR Cogen.

(4) Includes DGN volumes and SDG&E data as shown.

(5) Includes Southwest Gas Corp., Avista and Tuscarora data.

(6) SDG&E data revised from previous reports.

2004 California Gas Report
Recorded 2002 Statewide Sources and Disposition Summary
MMcf/Day

	California Sources	El Paso	Trans western	PG&E GT-NW	Kern River	Mojave	Other (1)	Total
Southern California Gas Company								
Core (2)	73	588	251	49	29	6	(13)	984
Noncore Commercial/Industrial	78	125	71	51	74	18	6	433
EG (3)	161	259	148	107	153	38	11	869
EOR	6	10	6	4	6	2	1	39
Wholesale/Resale/International (4)	79	127	73	52	75	19	6	425
Total	398	1,109	550	264	336	83	11	2,750
Pacific Gas and Electric Company (5)								
Core	53	92	90	578	4	0	0	817
Noncore Commercial/Industrial/EG/Resale (3)	134	456	12	840	32	0	0	1,474
Total	187	548	102	1,418	36	0	0	2,291
Other Northern California								
Core (5)	0	0	0	0	0	0	12	12
Non-Utilities								
Direct Sales/Bypass	380	0	0	0	33	186	0	599
TOTAL SUPPLIER	965	1,657	652	1,682	405	269	23	5,653

NOTES:

(1) Includes storage activities.

(2) Includes NGV volumes.

(3) EG includes UEG, COGEN, and EOR Cogen.

(4) Includes DGN volumes and SDG&E data as shown.

San Diego Gas & Electric Company (8)								
Core	3	47	11	41	1	0	24	127
Noncore Commercial/Industrial	0	194	47	2	0	0	1	244
Total	3	241	59	43	1	0	24	371

(5) Includes Southwest Gas Corp., Avista and Tuscarora data.

(6) SDG&E data revised from previous reports.

2004 California Gas Report
Recorded 2003 Statewide Sources and Disposition Summary
MMcf/Day

	California Sources	El Paso	Trans western	PG&E GT-NW	Kern River	Mojave	Other (1)	Total
Southern California Gas Company								
Core (2)	57	575	245	23	26	5	6	938
Noncore Commercial/Industrial	63	102	65	55	103	27	(4)	411
EG (3)	121	195	125	105	198	52	(8)	789
EOR	7	10	7	6	11	3	(1)	42
Wholesale/Resale/International (4)	58	93	60	50	95	25	(4)	377
Total	306	976	503	238	432	112	(11)	2,557
Pacific Gas and Electric Company (5)								
Core	0	146	9	569	9	0	0	733
Noncore Commercial/Industrial/EG/Resale (3)	155	305	78	595	157	0	64	1,354
Total	155	451	87	1,164	166	0	64	2,087
Other Northern California								
Core (5)	0	0	0	0	0	0	12	12
Non-Utilities								
Direct Sales/Bypass	496	0	0	0	644	150	0	804
TOTAL SUPPLIER	957	1,427	590	1,402	1,242	262	65	5,965

NOTES:

(1) Includes storage activities. For PG&E, this includes volumes flowing over Kern River High Desert interconnect & Questar Southern Trails interconnect.

(2) Includes NGV volumes.

(3) EG includes UEG, COGEN, and EOR Cogen.

(4) Includes DGN volumes and SDG&E data as shown.

San Diego Gas & Electric Company								
Core	3	43	14	49	12	0	13	135
Noncore Commercial/Industrial	0	136	45	1	0	0	0	183
Total	3	179	60	50	12	0	13	317

(5) Includes Southwest Gas Corp., Avista and Tuscarora data.

2004 California Gas Report

NORTHERN CALIFORNIA

INTRODUCTION

Pacific Gas and Electric Company (PG&E) provides natural gas procurement, transportation, and storage services to 3.8 million residential customers and 214,000 businesses in northern and central California. In addition to serving residential, commercial, and industrial markets, PG&E provides gas transportation and storage services to a variety of gas-fired electric generation plants in its service area. Other wholesale distribution systems, which receive gas transportation service from PG&E, serve a small portion of the gas customers in the region. PG&E's customers are located in 37 counties from south of Bakersfield to north of Redding, with high concentrations in the San Francisco Bay Area and the Sacramento and San Joaquin valleys. In addition, customers also utilize the PG&E system to meet their gas needs in southern California.

The forecast in this report covers the years 2004 through 2025. However, as a matter of convenience, the tabular data at the end of the section show only the years 2004 through 2008 and the years 2010, 2013, 2016, 2020, and 2025.

The northern California section of the report begins with the demand forecast, including a discussion of economic conditions, forecast methodology, and other factors affecting demand in various markets. Following the gas demand forecast are discussions of gas supply and pipeline capacity. Abnormal peak day demands and supply resources, as well as gas balances, are discussed at the end of this section.

GAS DEMAND REQUIREMENTS

OVERVIEW

PG&E's 2004 California Gas Report (CGR) average year demand forecast projects total on-system demand growing at an annual average rate of 1.3 percent between 2004 and 2025. This overall growth rate is a combination of 0.9 percent annual growth in the core market and 1.6 percent annual growth in the noncore market. By comparison, the 2002 CGR estimated an annual average growth rate of 1.8 percent per year, based on growth of 0.9 percent per year for the core market and 2.4 percent per year for the noncore market.[1]

The projected rate of growth of the core market has not changed. Decreases in the projected rate of growth in the noncore market are largely due to changes in the electric generation gas consumption portion of that market in which projected annual average growth has fallen from 3.4 percent in the 2002 CGR to 2.5 percent in the current CGR. Due to the incorporation of more recent historic usage data and updated natural gas price forecasts, industrial gas demand is now estimated to decline at a 0.4 average annual rate, whereas that decrease was projected to be on average 0.2 percent in the 2002 CGR.

In the 2004 CGR, total gas demand by electric generators and cogenerators in Northern California is estimated to increase at a rate of about 2.5% per year from 2005 through 2025. This total gas demand includes gas demand by SMUD's gas-fired power plants but does not include gas delivered to power plants in PG&E's service area through third-party pipelines.

FORECAST METHOD

PG&E's gas demand forecasts for the residential, commercial, and industrial sectors are developed from econometric models. Forecasts for other sectors (NGV, wholesale) are developed from market information. Forecasts of gas demand by power plants are based on modeling of the electricity market in the Western Electricity Coordinating Council using the MarketBuilder model. While variation in short-term gas use depends mainly on prevailing weather conditions, longer-term trends in gas demand are driven primarily by underlying economic, demographic, and technological changes, such as growth in population and employment; changes in prevailing prices; growth in electricity demand and in electric generation by renewables; and changes in the efficiency profiles of residential and commercial buildings and the appliances within them.

[1] The period used for calculating the 2002 CGR growth rates is 2002-2022. The 2002 CGR did not include the 2023-2025 period in the forecast horizon.

MARKET SENSITIVITY

The average-year gas demand forecast presented here is a reasonable projection for an uncertain future. However, point forecasts cannot capture the uncertainty in the major determinants of gas demand (e.g., weather, economic activity, appliance saturation, and efficiencies). In order to give some flavor of the possible variation in gas demand, PG&E has developed an alternative forecast of gas demand under assumed high demand conditions. The assumptions for this alternative scenario are described below.

Temperature

Because space heating accounts for a high percentage of use, gas requirements for PG&E's residential and commercial customers are sensitive to prevailing temperature conditions. PG&E's average-year forecast assumes that temperatures in the forecast period will be equivalent to the average of observed temperatures during the past twenty years.

Of course, actual temperatures in the forecast period will be higher or lower than those assumed in the average-year scenario and gas use will vary accordingly. PG&E's high demand forecast assumes that winter temperatures in the forecast horizon will be two standard deviations below the twenty-year average.

Seasonal variations in temperature have relatively little effect on power plant gas demand and, consequently, PG&E's forecasts of yearly power plant gas demand in the 2004 CGR are based on average temperatures. (Each summer typically contains a few short heat waves with temperatures 10 or 15 degF above normal, which drive up power plant gas demand; however, on a seasonal basis, temperatures seldom deviate more than 2 degF from average.)

Hydro Conditions

In contrast to temperature deviations, annual runoff for hydroelectric plants has varied by 50% above and below the long-term annual average. The impact of dry conditions was demonstrated during the drought and electricity crisis in water year 2001 (October 2000 through September 2001). Total gas demand for electric generation during that water year increased about 200 MMcf/day over the roughly average water year 2000. For the 2004 CGR's high demand scenario, PG&E presents a case that approximates a 1-in-10 dry hydro year. The resulting dry-year increase in gas demand is 165 MDth/d. This increase is lower than that seen from 2000 to 2001 because new, more efficient power plants have largely replaced the steam-turbine power plants that ramped up in 2001.

MARKET SECTORS

Residential

Households in the PG&E service area are forecast to grow 1.2 percent annually from 2004 to 2025. However, gas use per household has been dropping in recent years due to improvements in appliance and building-shell efficiencies. This decline accelerated sharply in 2001 when gas prices spiked, causing temperature-adjusted residential gas demand to plunge by more than 8 percent. Gas use per household recovered very slightly in 2002 as prices returned to more moderate levels, and rose again in 2003 as customers continued to relax their recently-adopted conservation behavior. However, in 2004 and beyond, residential use per household is expected to revert to its long-term trend due to continuing upgrades in appliance and building efficiencies. As a result, PG&E forecasts residential demand to grow on average at 0.9 percent per year from 2004 to 2025, implying an average decrease in gas use per household of nearly 0.3 percent per year.

Commercial

The number of commercial customers in the PG&E service area is projected to grow on average by a little less than 1 percent per year from 2004 to 2025. The recent (2000-2001) noncore to core migration wave has caused this class to be less temperature sensitive than it had previously been and has also tended to stunt overall growth in both customer base and gas use per customer. Gas use per commercial customer is projected to remain flat over the forecast horizon. Over the next 20 years, sales for this sector are expected to grow by the rate at which the customer base is forecast to increase.

Industrial

Gas requirements for PG&E's industrial sector are affected by the level and type of industrial activity in the service area and changes in industrial processes. Gas demand from this sector plummeted by close to 20 percent in 2001 due to a combination of soaring gas prices, noncore to core migration and a manufacturing sector mired in a severe downturn. After a slight recovery in 2002, demand from this sector fell another 6 percent in 2003 and is expected to drop by somewhat over 1 percent in 2004 due to both continuing high real natural gas prices and to continuing structural problems in California's manufacturing sector. Industrial gas consumption is expected to slowly decline by about 0.4 percent annually over the next 20 years as California's manufacturing sector continues to gradually shrink.

Electric Generation

PG&E forecasts gas demand for most cogenerators by trending from historical data. Most cogenerators are not strongly affected by conditions in the electricity market because electricity is co-produced with some other product, usually steam, for an industrial process.

PG&E forecasts gas demand by power plants and market-sensitive cogenerators using the MarketBuilder model. MarketBuilder is an economic-equilibrium model that has been applied to various markets with geographically distributed supplies and

demands, such as the North American natural gas market. PG&E uses MarketBuilder to simulate the electricity market in the Western Electricity Coordinating Council, which encompasses the electric systems from Denver to the Pacific Coast, and from northern Mexico to British Columbia and Alberta.

PG&E's forecast for 2005 is that filed at the California Public Utilities Commission on March 19, 2004 in Application 04-03-021. PG&E's forecasts for 2006 and 2007 are those that will be filed at the CPUC in an upcoming Biennial Cost Allocation Proceeding (BCAP).

PG&E's forecast for 2008-2025 is based largely on CEC assumptions. For the electricity demand forecast, PG&E used the Low Demand case from the CEC's 2003 Integrated Energy Policy Report. The forecast is shown in Table 12 of the CEC document http://www.energy.ca.gov/reports/2003-08-08_100-03-002.PDF. The published forecast extends through 2013, but the CEC staff provided it through 2025. For 2008-2025, PG&E also used CEC assumptions on construction of new power plants, including general location, fuel, and efficiency.

In general, the CEC assumptions reflect aggressive pursuit of energy efficiency and development of renewable generation technologies, in keeping with recent policies at both the state government and regulatory levels. The CEC also assumes that the next generation of gas-fired power plants will be more efficient, with heat rates of 6,800 Btu/kWh for combined-cycle plants and 8,900 Btu/kWh for gas turbines. These assumptions reduce the growth rate of total gas demand by electric generators and cogenerators from 3.5% per year in the 2002 CGR to about 2.5% in the 2004 CGR.

SMUD EG

The Sacramento Municipal Utility District is the sixth largest community owned municipal utility in the United States and it provides electric service to over 550,000 customers within the greater Sacramento area. SMUD operates three cogeneration plants and a peaking turbine with a total capacity of approximately 500 MW. The peak gas load is approximately 100,000 Dth/d and the average load is typically about 60,000 Dth/d. SMUD is currently constructing a new 500 MW gas fired plant, which is scheduled to be online by September 2005.

SMUD owns and operates its own local pipeline, which connects the three cogen plants to PG&E's backbone system near Winters, Ca. This 51-mile pipeline is being extended 26 miles to serve the new Cosumnes plant. SMUD also owns an equity interest of approximately 3.6 percent in PG&E's Line 300 and approximately 4.2 percent in Line 401. SMUD also has 32 MDth/d of capacity on TransCanada's pipeline system from Calgary to Malin, 20 MDth/d on Transwestern from San Juan (Ignacio) to Topock, and 20 MDth/d on Kern River from Opal to Daggett. SMUD also purchased an interest in some gas reserves in the San Juan Basin to meet its gas requirements.

GAS SUPPLY SOURCES

California-Source Gas

Northern California-source gas supplies come primarily from gas fields in the Sacramento Valley. In 2004, PG&E's customers obtained on average 154 MMcf/day of California source-gas.

U. S. Southwest Gas

PG&E's customers have access to three major U.S. Southwest gas producing basins--Permian, San Juan, and Anadarko--via the El Paso, Southern Trails, and Transwestern pipeline systems.

PG&E's customers can purchase gas in the basins and transport it to California via interstate pipelines. Customers can also purchase gas at the California-Arizona border or at the PG&E Citygate from marketers who hold inter- or intra-state pipeline capacity.

Canadian Gas

PG&E's customers can purchase Canadian gas from various suppliers in Canada and transport it to California primarily through Gas Transmission Northwest Pipeline. Customers can also purchase these supplies at the California-Oregon border or at the PG&E Citygate from marketers who hold inter- or intra-state pipeline capacity.

Rocky Mountain Gas

PG&E's customers have access to gas supplies from the Rocky Mountain area via the Kern River Pipeline and via the Gas Transmission Northwest Pipeline interconnect at Stanfield, Oregon.

Storage

In addition to storage services offered by PG&E, Wild Goose Storage, Inc. and Lodi Gas Storage, LLC provide storage services from the Wild Goose and Lodi facilities, respectively.

Supplemental Gas Supplies

Supplemental gas supplies are included as needed in PG&E's forecast to meet customer's gas requirements and avoid curtailments.

PG&E anticipates that sufficient supplemental supplies will be available from a variety of sources at market-competitive prices to meet existing and projected market demands in its service area. The supplemental supplies could be delivered through a variety of sources, including new interstate pipeline facilities and expansion of PG&E's existing transmission facilities, or PG&E's or others' storage facilities.

INTERSTATE PIPELINE CAPACITY

OVERVIEW

Competition for gas supply, market share, and transportation access has increased significantly over the past few years. Implementation of PG&E's Gas Accord in March 1998 and the addition of interstate pipeline capacity have provided all customers with direct access to gas supplies, intra- and inter-state transportation, and related services.

Almost all of PG&E's noncore customers buy all or most of their gas supply needs directly from the market. They use PG&E's transportation and storage services to meet their gas supply needs.

INTERSTATE GAS PIPELINE CAPACITY

In recent years, the natural gas pipeline industry has taken significant steps to expand the nation's already extensive pipeline network. These efforts have allowed California utilities and end-users improved access to supply basins and enhanced gas-on-gas and pipeline-to-pipeline competition. Interstate pipelines serving northern and central California include the El Paso, Mojave, Transwestern, Gas Transmission Northwest, Southern Trails, and Kern River pipelines. These pipelines provide northern and central California with access to gas producing regions in the U. S. Southwest and Rocky Mountain areas, and in Western Canada.

U.S. Southwest and Rocky Mountains

PG&E's Baja Path (Line 300) is connected to U.S. Southwest and Rocky Mountain pipeline systems (Transwestern, El Paso, Southern Trails, and Kern River) at and west of Topock, Arizona. The Baja Path has a firm capacity of 1,140 MMcf/day.

Canada

PG&E's Redwood Path (Lines 400/401) is connected to Gas Transmission Northwest at Malin, Oregon. The Redwood Path has a firm capacity of 2,021 MMcf/day.

ABNORMAL PEAK DAY SUPPLY AND DEMAND

APD DEMAND FORECAST

The Abnormal Peak Day (APD) forecast is a projection of *core demand* under extremely adverse conditions. The design criteria for PG&E, as required under CPUC regulation, is a 29 degree Fahrenheit system-weighted mean temperature. This corresponds to a roughly 1 in 90 extreme temperature event. The APD core load demand forecast is estimated to be approximately 3.2 Bcf/day. The APD load forecast shown here excludes all noncore demand and, in particular, excludes all EG demand. PG&E estimates that total noncore demand during an APD event would be 1.5 Bcf/day, with EG demand comprising between one-half to two-thirds of the total noncore demand.

The APD forecast is developed using statistical tools to estimate the relationship of daily core gas usage to daily weather conditions during several recent winters. This relationship is then used to simulate what the core load would be under the adverse weather conditions that occurred on December 21, 1990, the coldest day on record in PG&E's service area.

FORECAST OF APD SUPPLY AVAILABILITY

For APD planning purposes, supplies will flow under core's firm capacity, any as-available capacity, and capacity made available pursuant to supply diversion arrangements. Also, a significant part of the APD demand will be met by storage withdrawals from PG&E's underground storage facilities located at McDonald Island, Los Medanos, and Pleasant Creek. Flowing supplies may come from Canada, the U.S. Southwest, the Rocky Mountain Region, SoCalGas, and California. Supplies could also be purchased from noncore customers once gas enters the PG&E system. PG&E's Gas Procurement Department is responsible for managing the flowing supplies to PG&E's core customers in the event of an APD occurrence. Core aggregators serving core transport customers on PG&E's system have the obligation to make and pay for all necessary arrangements to deliver gas to PG&E to match the use of their customers.

In previous extreme cold weather events PG&E has observed a drop in flowing pipeline supplies. Supply from Canada is affected as the cold weather front drops down from Canada with a two to three day lag before hitting PG&E's service territory. There is also impact on supply from the southwest. While prices can influence the availability of supply to our system, cold weather can affect producing wells in the basins, which, in turn, can affect the total supply to our system and others.

Under APD conditions, PG&E can, if necessary, divert gas from the noncore (including gas fired electric generators) to meet core demand. Diversion of noncore supply in lieu of expanding firm core supplies has been the basis for infrastructure system planning for years, based on the assumption that the noncore market would either shut down their use of gas or switch to an alternate fuel. However, little, if any, alternate fuel burn capability exists today, so supply diversions from the noncore would necessitate that noncore customers (including EG) shut down operations. The implication for the future is that under APD conditions a significant portion of the EG customers could be shut down with the impact on electric system reliability left as an uncertainty.

As mentioned above, PG&E projects that in the near term, noncore demand (including gas fired electric generation) on an APD would be 1.5 Bcf/day. With the recent additions of the Wild Goose and Lodi storage facilities, more noncore demand will be satisfied in the event of an APD. However, looking to the future, if gas fired electric generation grows as forecasted, supplemental supplies will eventually be needed if the goal is to serve the core load and most, if not all, noncore load. These supplemental supplies could be in the form of additional storage facilities or incremental pipeline capacity.

PACIFIC GAS AND ELECTRIC COMPANY
Forecast of Core Gas Demand and Supply on an Abnormal Peak Day (APD)
MMcf/Day

	2004-2005	2005-2006	20062007	2007-2008	2008-2009
APD Core Demand[1]	3,170	3,213	3,255	3,290	3,323
Firm Storage Withdrawal	1,006	1,006	1,006	1,006	1,006
Required Flowing Supplies[2]	2,164	2,207	2,249	2,284	2,317
Total APD Resources (to meet demands)	3,170	3,213	3,255	3,290	3,323

NOTES:

(1) Includes PG&E's Gas Procurement Department's and other Core Aggregator's core customer demands. APD planning criterion: system temperature on APD is 29 degrees F.

(2) Includes supplies flowing under firm and as-available capacity, and capacity made available pursuant to supply diversion arrangements.

2004 California Gas Report

PACIFIC GAS AND ELECTRIC COMPANY
TABULAR DATA

ANNUAL GAS SUPPLY AND REQUIREMENTS
RECORDED YEARS 1999-2003
MMCF/DAY

LINE		1999	2000	2001	2002	2003	LINE
GAS SUPPLY TAKEN							
	CALIFORNIA SOURCE GAS						
1	Core Purchases	8	12	29	53	0	1
2	Customer Gas Transport & Exchange	143	151	157	134	155	2
3	Total California Source Gas	151	163	186	187	155	3
	OUT-OF-STATE GAS						
	Core Purchases						
6	Rocky Mountain Gas	62	28	6	4	9	6
7	U.S. Southwest Gas	210	209	204	182	155	7
8	Canadian Gas	595	604	574	578	569	8
	Customer Gas Transport						
10	Rocky Mountain Gas	48	24	78	32	170	10
11	U.S. Southwest Gas	286	374	644	468	434	11
12	Canadian Gas	875	939	864	840	595	12
13	Total Out-of-State Gas	2,076	2,178	2,370	2,104	1,932	13
14	STORAGE WITHDRAWAL	128	228	142	303	327	14
15	Total Gas Supply Taken	2,355	2,569	2,698	2,594	2,414	15
GAS SENDOUT							
	CORE						
19	Residential	644	581	543	557	546	19
20	Commercial	232	218	244	249	244	20
21	NGV	1	2	2	2	5	21
22	Total Throughput-Core	877	801	789	808	795	22
	NONCORE						
24	Industrial	473	537	420	406	418	24
25	Electric Generation [1]	703	941	1100	830	739	25
26	EOR	0	0	1	0	0	26
27	NGV	1	1	1	1	1	27
28	Total Throughput-Noncore	1177	1479	1522	1237	1158	28
29	WHOLESALE	12	11	11	9	10	29
30	Total Throughput	2066	2291	2322	2054	1963	30
31	CALIFORNIA EXCHANGE GAS	3	2	1	1	1	31
32	STORAGE GAS[2]	162	149	252	316	341	32
33	SHRINKAGE Company Use / Unaccounted for	124	127	123	223	109	33
34	Total Gas Send Out [3]	2,355	2,569	2,698	2,594	2,414	34
CURTAILMENT / ALTERNATIVE FUEL BURNS[4]							
37	Residential, Commercial, Industrial	0	0	0	0	0	37
38	Utility Electric Generation	0	0	0	0	0	38
39	TOTAL CURTAILMENT	0	0	0	0	0	39

NOTES:

(1) Electric generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.
(2) Includes both PG&E and third party storage
(3) Total gas send-out excludes off-system transportation.
(4) UEG curtailments include voluntary oil burns due to economic, operational, and inventory reduction reasons as well as involuntary curtailments due to supply shortages and capacity constraints.

PACIFIC GAS AND ELECTRIC COMPANY

ANNUAL GAS SUPPLY
FORECAST YEARS 2004-2008
MMCF/DAY

AVERAGE DEMAND YEAR

LINE		2004	2005	2006	2007	2008	LINE
GAS SUPPLY AVAILABLE							
1	California Source Gas	150	150	150	150	150	1
	Out of State Gas						
2	Baja Path[1]	1140	1140	1140	1140	1140	2
3	Redwood Path[2]	2021	2021	2021	2021	2021	3
4	Supplemental[3]	0	0	0	0	0	4
5	Total Supplies Available[4]	3311	3311	3311	3311	3311	5
GAS SUPPLY TAKEN							
6	California Source Gas	150	150	150	150	150	6
7	Out of State Gas (via existing facilities)	2148	2138	2237	2271	2303	7
8	Supplemental	0	0	0	0	0	8
9	Total Supply Taken	2298	2288	2387	2421	2453	9
10	Net Underground Storage Withdrawal	0	0	0	0	0	10
11	Total Throughput[5]	2298	2288	2387	2421	2453	11
REQUIREMENTS FORECAST BY END USE							
	CORE						
12	Residential	562	572	580	587	592	12
13	Commercial	233	236	239	242	243	13
14	NGV	3	4	4	4	5	14
15	Total Core	798	812	823	833	840	15
	NONCORE						
16	Industrial	410	409	412	412	410	16
17	SMUD Electric Generation	59	82	128	128	128	17
18	PG&E Electric Generation[6]	632	623	661	683	702	18
19	NGV	1	1	1	1	1	19
20	Resale	10	10	10	11	11	20
21	Southwest Exchange Gas	0	0	0	0	7	21
22	California Exchange Gas	1	1	1	1	1	22
23	Total Noncore	1113	1126	1213	1236	1260	23
24	Off-System Deliveries[7]	346	309	309	309	309	24
	Shrinkage						
25	Company use and Unaccounted for	41	41	42	43	44	25
26	TOTAL END USE[8]	2298	2288	2387	2421	2453	26
27	System Curtailment	0	0	0	0	0	27

NOTES:

(1) PG&E's Baja Path receives gas from U. S. Southwest and Rocky Mountain producing regions via Kern River, Transwestern, El Paso and Southern Trails pipelines.
(2) PG&E's Redwood Path receives gas from Canadian and Rocky Mountain producing regions via Gas Transmission Northwest pipeline.
(3) May include interruptible supplies transported over existing facilities, displacement agreements, or modifications that expand existing facilities.
(4) Supplies available through utility system.
(5) Figures exclude pipeline bypass load losses of approximately 440 MMcf/d.
(6) Electric Generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.
(7) Deliveries to southern California. The 2004 forecast is a combination of actual (first quarter) and forecasted deliveries. The 2005 forecast, also used for later years, is consistent with PG&E's Gas Transmission and Storage 2005 Rate Case, A.04-03-021.
(8) Figures are net of pipeline bypass load losses to non-jurisdictional gas suppliers.

ANNUAL GAS SUPPLY
FORECAST YEARS 2010-2025
MMCF/DAY

AVERAGE DEMAND YEAR

LINE		2010	2013	2016	2020	2025	LINE
GAS SUPPLY AVAILABLE							
1	**California Source Gas**	150	150	150	150	150	1
	Out of State Gas						
2	Baja Path[1]	1140	1140	1140	1140	1140	2
3	Redwood Path[2]	2021	2021	2021	2021	2021	3
4	**Supplemental[3]**	0	0	0	0	0	4
5	**Total Supplies Available[4]**	3311	3311	3311	3311	3311	5
GAS SUPPLY TAKEN							
6	**California Source Gas**	150	150	150	150	150	6
7	**Out of State Gas (via existing facilities)**	2341	2376	2439	2587	2773	7
8	**Supplemental**	0	0	0	0	0	8
9	**Total Supply Taken**	2491	2526	2589	2737	2923	9
10	**Net Underground Storage Withdrawal**	0	0	0	0	0	10
11	**Total Throughput[5]**	2491	2526	2589	2737	2923	11
REQUIREMENTS FORECAST BY END USE							
	Core						
12	Residential	605	624	639	658	680	12
13	Commercial	247	252	257	263	273	13
14	NGV	5	5	6	6	7	14
15	**Total Core**	857	881	902	927	960	15
	Noncore						
16	Industrial	409	404	397	390	381	16
17	SMUD Electric Generation	128	128	128	128	128	17
18	PG&E Electric Generation[6]	722	737	784	911	1070	18
19	NGV	1	1	1	1	1	19
20	Resale	11	11	11	11	11	20
21	Southwest Exchange Gas	9	9	9	9	9	21
22	California Exchange Gas	1	1	1	1	1	22
23	**Total Noncore**	1281	1291	1331	1451	1601	23
24	**Off-System Deliveries[7]**	309	309	309	309	309	24
	Shrinkage						
25	Company use and Unaccounted for	44	45	47	50	53	25
26	**TOTAL END USE[8]**	2491	2526	2589	2737	2923	26
27	System Curtailment	0	0	0	0	0	27

NOTES:

(1) PG&E's Baja Path receives gas from U. S. Southwest and Rocky Mountain producing regions via Kern River, Transwestern, El Paso and Southern Trails pipelines.
(2) PG&E's Redwood Path receives gas from Canadian and Rocky Mountain producing regions via Gas Transmission Northwest pipeline.
(3) May include interruptible supplies transported over existing facilities, displacement agreements, or modifications that expand existing facilities.
(4) Supplies available through utility system.
(5) Figures exclude pipeline bypass load losses of approximately 440 MMcf/d.
(6) Electric Generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.
(7) Deliveries to southern California. The 2005 forecast, also used for later years, is consistent with PG&E's Gas Transmission and Storage 2005 Rate Case, A.04-03-021.
(8) Figures are net of pipeline bypass load losses to non-jurisdictional gas suppliers.

PACIFIC GAS AND ELECTRIC COMPANY

ANNUAL GAS SUPPLY
FORECAST YEARS 2004-2008
MMCF/DAY

HIGH DEMAND YEAR

LINE		2004	2005	2006	2007	2008	LINE
GAS SUPPLY AVAILABLE							
1	**California Source Gas**	150	150	150	150	150	1
	Out of State Gas						
2	Baja Path[1]	1140	1140	1140	1140	1140	2
3	Redwood Path[2]	2021	2021	2021	2021	2021	3
4	**Supplemental[3]**	0	0	0	0	0	4
5	**Total Supplies Available[4]**	3311	3311	3311	3311	3311	5
GAS SUPPLY TAKEN							
6	**California Source Gas**	150	150	150	150	150	6
7	**Out of State Gas (via existing facilities)**	2236	2397	2504	2539	2571	7
8	**Supplemental**	0	0	0	0	0	8
9	**Total Supply Taken**	2386	2547	2654	2689	2721	9
10	**Net Underground Storage Withdrawal**	0	0	0	0	0	10
11	**Total Throughput[5]**	2386	2547	2654	2689	2721	11
REQUIREMENTS FORECAST BY END USE							
	Core						
12	Residential	622	634	643	650	656	12
13	Commercial	255	258	261	265	266	13
14	NGV	3	4	4	4	5	14
15	**Total Core**	880	896	908	919	927	15
	Noncore						
16	Industrial	413	412	414	415	413	16
17	SMUD Electric Generation	59	85	138	138	138	17
18	PG&E Electric Generation[6]	632	785	823	845	864	18
19	NGV	1	1	1	1	1	19
20	Resale	11	11	12	12	12	20
21	Southwest Exchange Gas	0	0	0	0	7	21
22	California Exchange Gas	1	1	1	1	1	22
23	**Total Noncore**	1117	1295	1389	1412	1436	23
24	**Off-System Deliveries[7]**	346	309	309	309	309	24
	Shrinkage						
25	Company use and Unaccounted for	43	47	48	49	49	25
26	**TOTAL END USE[8]**	2386	2547	2654	2689	2721	26
27	System Curtailment	0	0	0	0	0	27

NOTES:

(1) PG&E's Baja Path receives gas from U. S. Southwest and Rocky Mountain producing regions via Kern River, Transwestern, El Paso and Southern Trails pipelines.
(2) PG&E's Redwood Path receives gas from Canadian and Rocky Mountain producing regions via Gas Transmission Northwest pipeline.
(3) May include interruptible supplies transported over existing facilities, displacement agreements, or modifications that expand existing facilities.
(4) Supplies available through utility system.
(5) Figures exclude pipeline bypass load losses of approximately 440 MMcf/d.
(6) Electric Generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.
(7) Deliveries to southern California. The 2004 forecast is a combination of actual (first quarter) and forecasted deliveries. The 2005 forecast, also used for later years, is consistent with PG&E's Gas Transmission and Storage 2005 Rate Case, A.04-03-021.
(8) Figures are net of pipeline bypass load losses to non-jurisdictional gas suppliers.

ANNUAL GAS SUPPLY
FORECAST YEARS 2010-2025
MMCF/DAY

HIGH DEMAND YEAR

LINE		2010	2013	2016	2020	2025	LINE
	GAS SUPPLY AVAILABLE						
1	California Source Gas	150	150	150	150	150	1
	Out of State Gas						
2	Baja Path[1]	1140	1140	1140	1140	1140	2
3	Redwood Path[2]	2021	2021	2021	2021	2021	3
4	Supplemental[3]	0	0	0	0	0	4
5	Total Supplies Available[4]	3311	3311	3311	3311	3311	5
	GAS SUPPLY TAKEN						
6	California Source Gas	150	150	150	150	150	6
7	Out of State Gas (via existing facilities)	2609	2647	2711	2864	3161	7
8	Supplemental	0	0	0	0	0	8
9	Total Supply Taken	2759	2797	2861	3014	3202	9
10	Net Underground Storage Withdrawal	0	0	0	0	0	10
11	Total Throughput[5]	2759	2797	2861	3014	3202	11
	REQUIREMENTS FORECAST BY END USE						
	Core						
12	Residential	670	691	707	729	753	12
13	Commercial	270	275	280	288	298	13
14	NGV	5	5	6	6	7	14
15	Total Core	945	971	993	1023	1058	15
	Noncore						
16	Industrial	411	406	400	392	383	16
17	SMUD Electric Generation	138	138	138	138	138	17
18	PG&E Electric Generation[6]	883	899	946	1073	1232	18
19	NGV	1	1	1	1	1	19
20	Resale	12	12	12	12	12	20
21	Southwest Exchange Gas	9	9	9	9	9	21
22	California Exchange Gas	1	1	1	1	1	22
23	Total Noncore	1455	1466	1507	1626	1776	23
24	Off-System Deliveries[7]	309	309	309	309	309	24
	Shrinkage						
25	Company use and Unaccounted for	50	51	52	56	59	25
26	TOTAL END USE[8]	2759	2797	2861	3014	3202	26
27	System Curtailment	0	0	0	0	0	27

NOTES:

(1) PG&E's Baja Path receives gas from U. S. Southwest and Rocky Mountain producing regions via Kern River, Transwestern, El Paso and Southern Trails pipelines.
(2) PG&E's Redwood Path receives gas from Canadian and Rocky Mountain producing regions via Gas Transmission Northwest pipeline.
(3) May include interruptible supplies transported over existing facilities, displacement agreements, or modifications that expand existing facilities.
(4) Supplies available through utility system.
(5) Figures exclude pipeline bypass load losses of approximately 440 MMcf/d.
(6) Electric Generation includes Non-EOR cogeneration, PG&E Utility Electric Generation, and other non-utility generation.
(7) Deliveries to southern California. The 2005 forecast, also used for later years, is consistent with PG&E's Gas Transmission and Storage 2005 Rate Case, A.04-03-021.
(8) Figures are net of pipeline bypass load losses to non-jurisdictional gas suppliers.

2004 California Gas Report

SOUTHERN CALIFORNIA

INTRODUCTION

Southern California Gas Company (SoCalGas) is the principal distributor of natural gas in southern California, providing retail and wholesale customers with procurement, transportation, exchange and storage services. SoCalGas is a gas-only utility and, in addition to serving the residential, commercial, and industrial markets, provides gas for enhanced oil recovery (EOR) and electric generation (EG) in southern California. San Diego Gas & Electric (SDG&E), Southwest Gas Corporation, and the City of Long Beach Energy Department are SoCalGas' three wholesale utility customers. Gas service at wholesale is expected to begin to the City of Vernon during the forecast period.

This report covers a 22-year forecast period, from 2004 through 2025; only the consecutive years 2004 through 2008 and the point years 2010, 2013, 2016, 2022 and 2025, however, are shown in the tabular data in the next sections. The single point forecasts are subject to uncertainty, but represents best estimates for the future, based upon the most current information available.

The Southern California section of the 2004 California Gas Report (CGR) begins with a discussion of the economic conditions and regulatory issues facing the utilities, followed by a discussion of the factors affecting gas demand in various market sectors. The outlook on gas supply availability, which continues to be favorable, is presented followed by a review of the peak day demand forecast. Summary tables and figures underlying the forecast are provided.

THE SOUTHERN CALIFORNIA ENVIRONMENT

Economics and Demographics

The gas demand projections are partly determined by the long-term economic outlook for the SoCalGas service territory. Southern California's economy enjoyed strong growth in the late 1990s before slowing from 2001 through 2003. After strong 2.7% growth in 2000, the area's non-farm jobs grew by a more modest 1.2% in 2001, then fell by 0.1% in 2002. After increasing by a slight 0.2% in 2003, the area's total non-farm employment should grow 1.1% in 2004 and surpass 7.8 million. Local industrial employment (manufacturing and mining) dropped by 4.8% in 2003 (about the same as the national average) and is expected to drop 0.1% in 2004—less severe than the expected drop of 1.6% across the U.S. However, after many years of declines, southern California's industrial jobs now stand nearly 30% below their 1989 peak of 1.3 million. Southern California's non-industrial employment is faring relatively better. In 2003, local commercial jobs (all jobs except industrial) saw 1.0% growth – slow, but much better than the anemic 0.3% national growth rate. In 2004, we expect local commercial jobs to grow by 1.3% -- faster than the forecasted 1.1% U.S. growth rate.

From 2003 through 2008, service-area non-farm jobs should see 1.4% average annual growth. Beyond 2008, we expect the service area population's average age to gradually increase, part of a national demographic trend of aging "baby boomers". As the population ages and as more people retire, we expect employment to grow at slower rates. From 2008 through 2025, local non-farm job growth should average approximately 1.1% per year—with annual growth gradually slowing from 1.2% in 2008 to 1.0% by 2025. Area industrial jobs should grow very slowly, averaging about 0.6% per year from 2003 through 2025. We expect the industrial share of non-farm employment to fall from 11.9% in 2003 to 10.4% by 2025. Commercial jobs should average nearly 1.3% annual growth from 2003 through 2025.

Mainly as a result of growing numbers of residents, SoCalGas expects its active meters to increase an average of about 1.3% per year from 2003 to 2025 – nearly the same as the current growth rate in 2004.

Regulatory Environment

The past year witnessed numerous developments at both the California Public Utilities Commission (CPUC) and Federal Energy Regulatory Commission (FERC) designed to make the natural gas industry more responsive to the changing needs of the marketplace.

State Regulatory Matters

In April 2004, the Commission issued D.04-04-015 adopting tariffs implementing D.01-12-018, which adopted a comprehensive settlement agreement that modified the market and regulatory framework for regulating the transportation and storage of natural gas on SoCalGas' system. Once fully implemented, D.01-12-018 would provide new unbundled service offerings for transportation, storage, and balancing, while creating firm tradable rights for SoCalGas' 3875 MMcf/day of firm backbone transmission capacity. After a set aside for core customers, receipt point rights would be awarded through an open season ensuring customer access and preventing market concentration. However, while the Commission adopted D.04-04-015, it stayed the order pending the issuance of a decision in Phase I of Order Instituting Rulemaking (OIR) (R.) 04-01-025.

R.04-01-025 was issued in January 2004 to establish policies and rules to ensure reliable, long-term supplies of natural gas to California. This Gas Market OIR was predicated by recent reports, FERC orders, and ongoing changes in the natural gas market, which indicated that in the long-term, there may not be sufficient natural gas supplies and/or infrastructure to meet the requirements of all California residential and business consumers. The Gas Market OIR further seeks to address a broad range of supply issues to increase demand reduction efforts, ensure sufficient interstate pipeline capacity to serve California, maximize the utilization and benefits of storage facilities, and enable access of imported liquefied natural gas (LNG) supplies.

Each of the California natural gas public utilities are respondents to R.04-01-025, which was bifurcated into two phase; Phase 1 to address proposals regarding interstate capacity and LNG access. Phase 2 will address issues including emergency reserves, utility backstopping, and ratemaking policies. A decision in Phase 1 is expected by the Summer 2004, while a Phase 2 decision is expected by the end of the year. In opening R.04-01-025, the Commission concurrently noted that in R.01-08-028, it was addressing natural gas energy efficiency programs and how best to increase demand reduction efforts.

Federal Regulatory Matters

Over the past few years, SoCalGas has been actively participating in numerous FERC proceedings relative to interstate capacity serving California, including Docket No. RP00-336, which is reviewing the basis for assigning capacity and receipt point rights on the El Paso Natural Gas Company pipeline system. SoCalGas has been actively advocating the need for the El Paso system to be fully pathed to ensure that contract demand shippers receive a level of firm transportation service consistent with their costs and with the 1996 El Paso global settlement. The changes proposed by SoCalGas for the El Paso system are similar to those advocated by the California Public Utilities Commission and would increase the reliability and certainty of supply deliveries to California from El Paso.

In May 2002, the FERC found El Paso to be in violation of Section 5 of the Natural Gas Act and ordered El Paso to change its current capacity allocation system because Contract Demand shippers, including SoCalGas, SDG&E and other California shippers, have not been getting the level of firm gas transportation service that they have been paying for since the 1996 El Paso global settlement. The FERC further ordered El Paso to convert Full Requirement contracts to Contract Demand contracts by November 1, 2002. The November 1, 2002 deadline was later delayed until May 1, 2003.

GAS DEMAND (REQUIREMENTS)

Overview

SoCalGas expects continued growth in the residential market, as well as, in associated service-oriented businesses in the commercial market. These markets, along with small- and medium-sized industrial customers, comprise the core market. The remaining large customers make up the noncore market.

The following table compares the composition of SoCalGas' throughput for recorded year 2003 and forecast year 2025.

Composition of SoCalGas Throughput – Bcf
(Average Temperature Year)

	2003	2025	Change
Residential	249	303	22%
Core Non-Residential	100	123	23%
Noncore C&I	150	127	-15%
EOR-Steaming	15	7	-53%
Electric Generation	288	189	-34%
Wholesale	135	173	28%
Other	21	24	14%
TOTAL	**958**	**946**	**-1%**

Notes:
1) "Core Non-Residential includes Natural Gas Vehicle (NGV) throughput.
2) "Other" includes international (Mexicali) throughput and Lost and Unaccounted for Gas (L&UAF) + Company-Use gas.

Residential, core non-residential, and wholesale requirements are expected to increase as southern California's economy continues through a gradual economic expansion. Requirements for EOR steaming operations, which have declined since the Kern/Mojave pipeline began offering direct service to California customers in 1992, are expected to continue to decline. The EG market is also expected to continue to decline from the unusually high level witnessed in 2001. Lastly, noncore commercial/industrial markets are expected to decline offsetting the expected growth from the core and wholesale markets.

MARKET SENSITIVITY

Temperature

Core demand forecasts are prepared for two design temperature conditions – average and cold – to quantify changes in space heating demand due to weather. Temperature variations can cause significant changes in winter gas demand due to space heating in the residential, core commercial and industrial markets. The largest demand variations due to temperature occur in the month of December. Degree-day differences between the three conditions are developed from a six-zone temperature monitoring procedure within SoCalGas' service territory. The cold design temperature conditions are based on a statistical recurrence factor of 1-in-35 years.

Pipeline Bypass

In 1992 Kern/Mojave Pipeline began California operations, which resulted in the bypass of local gas distribution systems. Aggregate bypass volumes were at 182 Bcf in 2003, and bypass to the Kern/Mojave mainline is expected to grow gradually to 342 Bcf per year by 2008, and crest at 373 Bcf in 2013, before a gradual decline.

By 2009, several long-term EOR customer transportation contracts will expire and bypass is expected to increase to 167 Bcf by the year 2016. Beyond 2016, bypass load is anticipated to decline slowly as total gas usage in the EOR market declines.

The California market continues to attract natural gas pipeline projects and expansions. Kern River Pipeline's 282 MMcfd High Desert Lateral was placed into service in 2002, and the 906 MMcfd mainline expansion to California was completed in 2003. Questar placed the Southern Trails Pipeline eastern segment into service in 2002, bringing 80 MMcfd of interstate transportation to California. The western leg of the Southern Trails Pipeline, within California, is not in service to date. In 2003, the FERC extended Southern Trail's construction certificate until mid-2005. However, Questar Corporation's 2003 Annual Report states Southern Trails still hopes to either sign transportation contracts, or sell the pipeline in 2004. Customer usage of the Southern Trails Pipeline is assumed to begin in 2006 and is forecast at 11 Bcf, increasing to 21 Bcf through the forecast period.

There are electric generating plants in operation within SoCalGas' service territory that take their gas transportation service from other providers. These off-system plants, which have never been serviced by SoCalGas, have a forecasted demand of 147 Bcf in 2004, gradually increasing to 179 Bcf by 2013, after which a slow decline is anticipated.

Market Sectors

Residential

Residential demand adjusted for temperature increased to 249.0 Bcf in 2003 from 245.0 Bcf in 2002. Unadjusted residential demand was 245.3 Bcf in 2003, 1.5% less than temperature adjusted demand primarily because of warmer than normal weather conditions in southern California.

Active residential meters averaged 4.99 million in 2003, an increase of 61,356 (or 1.3%) from the 2002 average. From 2003 through 2025, active residential meters are expected to grow at an average annual rate of 1.3%, reaching 6.71 million by 2025.

Residential demand is projected to grow from 249.0 Bcf in 2003 to 303.5 Bcf in 2025, an increase of 2.5 Bcf per year. This forecast reflects the savings from SoCalGas' Energy Efficiency program.

Commercial

On a temperature-adjusted basis, core commercial market demand in 2003 totaled 73.4 Bcf, up 0.1 Bcf (about 0.1%) from 2002. This increase is largely the result of slowly improving economic conditions in southern California. On average, core commercial market demand is forecast to increase about 0.7% per year, over the next 21 years, reaching 84.5 Bcf in 2025.

Noncore Commercial demand is forecast to be 21.3 Bcf in 2004, a slight decrease of about 0.9 Bcf from 2003 usage. After year 2004, noncore commercial demand is expected to decrease to 20.4 Bcf in 2007 primarily due to the Vernon retail load switching to wholesale service. After 2007, the noncore commercial demand is expected to grow gradually to 22.3 Bcf in 2025. The growth is primarily due to the increase in the commercial economic activity.

Industrial

In 2003, temperature-adjusted core industrial demand was 21.0 Bcf, an increase of 0.5 Bcf (about 2%) over 2002 deliveries. Core industrial market demand is projected to increase by approximately 0.7% per year from 21.1 Bcf in 2004 to about 24.3 Bcf in 2025. This increase in gas demand results from a combination of a slightly higher forecasted growth in industrial production and lower growth in marginal gas rates, tempered by the use of more energy-efficient gas equipment in the industrial sector.

Retail noncore industrial deliveries are forecast to decline to 60.4 Bcf in 2004 compared to 61.8 Bcf in 2003. The forecast demand is expected to continue its decrease from 60.4 Bcf in 2004 to 56.6 Bcf in 2007. The decrease is primarily due to the reclassification of Vernon retail load to wholesale service starting April 2005 and the expected noncore to core customer migration. After 2007, noncore industrial demand demand is forecast to increase slightly to 58.4 Bcf in 2025 due to an expected increase in service area industrial employment forecast.

Refinery industrial demand is comprised of gas consumption by petroleum refining customers, hydrogen producers and petroleum refined product transporters. Refinery gas demand is forecast to decline 1.0% per year, from 64 Bcf in 2003 to 49 Bcf in 2025. This decrease is mainly due to refiners' using alternate fuels such as pentane and butane during summer months where natural gas prices are forecasted to be less competitive than the alternate fuel prices. The forecast increase of pentane fuel switching is caused by new gasoline quality regulations that require refineries to replace MTBE gasoline additives with ethanol. To accommodate ethanol blending, refineries will need to remove volatile gasoline components, such as pentanes, from the refining process. This change in process will make more pentane available to refineries for internal use thereby displacing natural gas usage in the refinery processes.

Migration of Commercial and Industrial Load: Noncore to Core

As a result of continuing natural gas price volatility, and continuing financial weakness in the contracted gas procurement marketplace, some noncore (G-30) commercial and industrial demand has been migrating to core (G-10) commercial and industrial service. SoCalGas also eliminated its core subscription program in 2003 as reflected in D.01-12-018 and most of these customers have transferred to core service in 2003. For calendar year 2005 and 2006 this transfer from noncore to core service is forecast to be 1.0 Bcf and 1.3 Bcf, respectively.

Electric Generation

This sector includes the following markets: all commercial/industrial cogeneration, EOR-related cogeneration, and non-cogeneration EG. It should be noted that the forecasts of EG-related load are subject to a higher degree of uncertainty associated with the continued operation of existing generation facilities, the timing and location of construction of new facilities in the Western United States, and regulatory and market decisions that impact the operation of existing qualifying facilities (QF) facilities and other EG plants, including the construction of additional electric transmission transfer capacity.

Industrial/Commercial/Cogeneration <20MW

The commercial/industrial cogeneration segment is generally made up of customers generating less than 20 MW of electric power. Most of the cogeneration units in this segment are installed primarily to generate electricity for internal customer consumption rather than for the sale of power to electric utilities. In 2003, recorded gas deliveries to this market were 16.7 Bcf, an increase of 2.9 Bcf from 2002 deliveries of 13.7 Bcf. Commercial/industrial cogeneration demand is projected to hold steady at around 16.7 Bcf annually for the next 20 years.

Industrial/Commercial Cogeneration (>20 MW)

Commercial/industrial cogeneration greater than 20 MW gas demand is forecast to decline 43%, from 54 Bcf in 2004 to 31 Bcf in 2007. The forecast is based on a power market simulation for the period to 2025 and thus reflects the anticipated dispatch of these resources under the forecast market conditions, in addition to receiving contract capacity payments. In addition, some customers are expected to select alternate service providers. The forecast remains at 31 Bcf per year from 2007 to 2025.

Refinery-Related Cogeneration

Refinery cogeneration units are installed primarily to generate electricity for internal use. Refinery-related cogeneration is forecast to decline 1.5% per year, from 18 Bcf in 2003 to 13 Bcf in 2025. This gas demand decrease is mainly due to the increased use of alternative fuels, such as pentane and butane, during summer months when gas prices are less competitive with alternate fuels.

EOR-Related Cogeneration

In 2003, recorded gas deliveries to the EOR-related cogeneration market were 17.7 Bcf, a decrease of 5.4 Bcf from 2002. This decrease was mainly due to increased bypass to the Kern River/Mojave Pipeline and increased usage of customer owned field gas. EOR-related cogeneration demand is expected to further decrease to 14.6 Bcf in 2004 and will remain at that level until 2008 when usage will start to drop due to the expiration of several EOR long-term gas transportation contracts. Demand is forecast to level off in 2010 at 3.7 Bcf and remain at that level for the remainder of the forecast period.

Non-Cogeneration Electric Generation

SoCalGas forecasts a decline in retail non-cogeneration EG gas requirements of 23%, from 113 Bcf in 2004 to 87 Bcf in 2005. The 2004 forecast is based on below normal hydro conditions and the derating due to planned maintenance of the Pacific DC-Intertie, a transmission line from Oregon to southern California. The decline in gas use in 2005 is a result of average hydro conditions and normal operation of the Pacific DC-Intertie. SoCalGas forecasts an increase in retail non-cogeneration EG gas requirements of 1.6% per year, from 87 Bcf in 2005 to 124 Bcf in 2025. The forecast for SoCalGas' EG customers is based on a power market simulation.

SoCalGas' forecast includes the construction of approximately 26,500 MW from 2003 to 2008 of new thermal resources' capacity. Of that total, 17,800 MW are currently in operation, and 8,600 MW are under construction. Only 3,000 MW are to be served directly by SoCalGas. Throughout the entire planning period, SoCalGas assumes that market participants construct additional generation resources such that the WECC maintains a minimum planning reserve margin of 15%. For electric demand within California, SoCalGas used the California Energy Commission's (CEC) end-use electric demand forecast. Based on the CEC Staff's recommendation, the aggressive Demand Side Reduction scenario from CEC's 2003 Integrated Energy Policy report was used. Since natural gas is generally the marginal fuel, EG demand could be significantly higher should actual electric demand be higher than this forecast. For electric end-use demand outside of California, SoCalGas used Henwood Energy's electric demand forecast.

SoCalGas performed two special hydro sensitivities. Due to the displacement of generation by off-system resources, the impact of significant hydro conditions had little impact on gas demand. A dry hydro year, as defined by the CEC, increased demand on average for the forecast period by 26 Bcf. A wet hydro year, as defined by the CEC, decreased demand on average for the forecast period by 8 Bcf.

Enhanced Oil Recovery – Steam

Recorded deliveries to the EOR steaming market in 2003 were 15.2 Bcf, an increase of 0.9 Bcf from 2002. This increase was due to more production as a result of higher crude oil prices. SoCalGas' EOR steaming demand is expected to remain stable at 11.8 Bcf from 2004 until 2008 when SoCalGas' EOR long-term gas transportation contracts terminate in late 2008. From 2009 through the end of the forecast period, usage is expected to be approximately 6.7 Bcf. These figures include gas delivered to PG&E's EOR customers through interutility exchange. In 2003, 0.01 Bcf of gas was delivered to PG&E through such arrangements. No change in demand is expected in that market. The EOR-related cogeneration demand is discussed in the Electric Generation sector.

Crude oil prices are not expected to reach a level that would initiate any major expansion in EOR operations during the forecast period. As a result, EOR production is expected to gradually decline by approximately 1.5% percent per year. In addition, oil producers will rely increasingly on the interstate pipelines in California to supplant traditional supply sources, such as own source gas and SoCalGas' transportation system.

Mexicali

SoCalGas used the forecast prepared by Ecogas, Mexicali, for this report. Mexicali's use is expected to increase from 4 Bcf at an average rate of 2.2% per year to 6.6 Bcf in 2025.

Wholesale

The forecast of wholesale gas demand includes transportation to SDG&E, the City of Long Beach Electric and Gas Department (Long Beach), Southwest Gas Corporation (SWG), and the City of Vernon (Vernon).

The non-electric generation (EG) gas demand forecast for SDG&E incorporates the long-term gas demand forecast prepared by SDG&E for this report. Under average temperature conditions, total non-EG requirements for SDG&E are expected to increase from 53 Bcf in 2004 at an average growth rate of 1.2% per year to 69 Bcf in 2025.

The forecast of the large EG loads in SDG&E's area is based on the power market simulation as noted in the Electric Generation chapter for "non-cogeneration EG" demand. EG-related load is subject to a higher degree of uncertainty associated with the continued operation of existing generation facilities and the construction of new facilities. SDG&E's cogeneration and non-cogeneration EG requirements are expected to decrease from 61 Bcf in 2004 to 38 Bcf in 2005. The 2004 forecast is based on below normal hydro conditions and the derating due to planned maintenance of the Pacific DC-Intertie, a transmission line from Oregon to southern California. The decline in gas use in 2005 is a result of average hydro conditions and normal operation of the Pacific DC-Intertie. SoCalGas forecasts an increase in SDG&E's cogeneration and non-cogeneration EG gas requirements of 3% per year, from 38 Bcf in 2005 to 74 Bcf in 2025 driven primarily by the addition of new resources. The cogeneration EG demand forecast is based on the long-term demand forecast prepared by SDG&E for this report. The same assumptions used for the retail non-cogeneration EG demand were used for the wholesale non-cogeneration EG demand.

SoCalGas performed two special hydro sensitivity analyses. Due to the displacement of generation by off-system resources, the impact of significant hydro conditions had little impact on gas demand. A dry hydro year, as defined by the CEC, increased demand on average for the forecast period by 26 Bcf. A wet year, as defined by the CEC, decreased demand on average for the forecast period by 8 Bcf.

For the City of Long Beach, SoCalGas used the forecast prepared by Long Beach for this report. Long Beach's usage is expected to decrease gradually from 12.3 Bcf in 2004 to 12.2 Bcf in 2025. Long Beach's local deliveries are expected to stay steady at 1.2 Bcf/year. SoCalGas' transportation to Long Beach is expected to decrease from 11.1 Bcf to 11 Bcf in 2025.

The demand forecast for SWG is based on a long-term demand forecast prepared by Southwest Gas. In 2004, SoCalGas will serve approximately 6.5 Bcf directly, with another 3.8 Bcf being served by PG&E under exchange arrangements with SoCalGas. The direct service load is expected to grow by 1.5% per year from 6.5 Bcf in 2004 to approximately 8.9 Bcf in 2025.

The wholesale forecast assumes Vernon initiates municipal gas service to a portion of the existing SoCalGas retail customers within the City's jurisdiction in April, 2005. The forecasted throughput starts at 5 Bcf in 2005 and grows to 10 Bcf by 2025. The throughput forecast for the EG customers is based on a power market simulation.

Natural Gas Vehicles (NGV)

At the end of 2003, there were 179 fueling stations serving approximately 13,400 vehicles that consumed 5.9 Bcf of compressed natural gas (CNG) for the year. SoCalGas remains optimistic about the NGV market growth, forecasting an increase in demand to 10.8 Bcf in 2015 and 14.1 Bcf in 2025. The growth is being propelled by the private and public sectors, with customer support from SoCalGas' LEV program.

ENERGY EFFICIENCY PROGRAMS

The cumulative net Energy Efficiency load impact forecast for selected years is provided in **Table 1**. The net load impact includes all Energy Efficiency programs that SoCalGas forecasted to implement in the years 2004 through 2025. Savings and goals for these programs are based on the program goals authorized by the Commission in D.03-12-060 and D.04-02-059.

Conservation and energy efficiency activities encourage customers to install energy efficient equipment and weatherization measures and adopt energy saving practices that result in reduced gas usage for a comparable level of service. Conservation and energy efficiency load impacts are shown as positive numbers. The "total net load impact" is the natural gas throughput reduction resulting from SoCalGas' Energy Efficiency programs.

Savings reported are for measures installed under SoCalGas' Energy Efficiency programs. Credit is only taken for measures that are installed as a result of SoCalGas' Energy Efficiency programs, and only for the measure lives of the measures installed. Measures with lives less than the forecast planning period fall out of the forecast when their expected life is reached. This means, for example, that a measure installed in 2004 with a lifetime of 10 years is only included in the forecast through 2013. Naturally occurring conservation that is not attributable to SoCalGas' Energy Efficiency activities is not included in the Energy Efficiency forecast.

Table 1. Energy Efficiency Load Impact Forecast for Selected Years (MMcf)

	2004	2005	2006	2007	2008	2010	2013	2016	2020	2025
Core Commercial	771	1,037	1,303	1,569	1,375	1,372	1,364	1,103	797	285
Core Industrial	340	455	569	684	617	522	421	355	327	97
Core Residential	456	650	845	1,040	1,030	1,011	983	596	230	47
Total Net Load Impacts	1,566	2,142	2,717	3,293	3,022	2,904	2,767	2,054	1,354	429

Notes:
1. Energy Efficiency load impacts include 2003 program savings, but do not include pre-2003 program savings.
2. "Hard" impacts include measures requiring a physical equipment modification or replacement.
3. SoCalGas did not include "soft" impacts, e.g., energy management services type measures, consistent with its Program Year 2004-2005 Program Application filed on September 23, 2003.

CAPACITY, SOURCES, AND STORAGE

Interstate Pipeline Capacity

Southern California continues to operate in an environment of interstate pipeline capacity in excess of anticipated demand. Interstate pipeline delivery capability into southern California is over 4,000 MMcf/day, with approximately 3,230 MMcf/day available directly to SoCalGas customers (the remaining interstate capacity serves local distribution company bypass customers). These pipeline systems provide access to several large supply basins, located in: New Mexico (San Juan Basin), West Texas (Permian Basin), Rocky Mountains and Western Canada. The interstate pipeline systems, along with local California gas supplies, deliver gas to most southern California customers through SoCalGas.

SoCalGas currently has firm receipt capacity at the following locations for its customers to access supply and interstate pipelines.

Interstate and Local Volumes MMcf/day

Current Firm Capacity	
El Paso at Blythe	1,210
El Paso at Topock	540
North Needles (Transwestern, Questar Southern Trails)	800
Hector Road (Mojave)	50
Wheeler Ridge (PG&E, Kern/Mojave, CA Production)	765
Line 85 (CA Production)	190
North Coastal (CA Production)	120
Kramer Junction (Kern/Mojave)	200
Total Firm Supply Access	**3,875**

Gas Supply Sources

Southern California receives gas supplies from several sedimentary basins in the western United States and Canada.

California Gas

Gas supply available to SoCalGas from California sources (state onshore plus state/federal offshore supplies) was about 400 MMcf/day in 2003.

Southwestern U.S. Gas

Traditional Southwestern U.S. sources of natural gas, especially from the San Juan Basin, will continue to supply most of southern California's natural gas demand. This gas is delivered via the El Paso Natural Gas Company and Transwestern Pipeline Company pipelines. The San Juan Basin's conventionally produced gas supplies have increased since 1991 and are expected to meet southern California's gas demand. Permian basin gas also provides an additional source of supply into California.

Rocky Mountain Gas

Rocky Mountain supply presents a viable alternative to traditional Southwestern U.S. gas sources for Southern California. This gas is delivered to southern California primarily on the Kern River Gas Transmission Company's pipeline, although there is also access through the San Juan Basin. In recent years, Rocky Mountain gas has increasingly flowed to Midwestern and Pacific Northwest Markets.

Canadian Gas

SoCalGas anticipates that the role of Canadian gas in meeting southern California's demand during the forecast period will decline. New pipeline capacity out of western Canada to the Midwest and eastern United States are likely to move Canadian gas away from California. Increased gas deliveries from the Permian Basin to California are expected to replace these supplies.

Liquefied Natural Gas (LNG)

SoCalGas anticipates that LNG may be a significant source of gas supply to the U.S. by 2008. Although there is substantial uncertainty associated with the successful citing of the regasification facilities to deliver LNG, approximately 800 MMcf/day of such capacity is included in our forecast tables.

RETAIL CORE PEAK DAY DEMAND

SoCalGas plans and designs its system to provide continuous service to its core customers under an extreme peak day event. The extreme peak day design criteria is defined as in a 1-in-35 year event; this correlates to a system average temperature of 38 degrees Fahrenheit. Demand on an extreme peak day is met through a combination of withdrawals from underground storage facilities and flowing pipeline supplies. The following table provides an illustration of how storage and flowing supplies can meet the growth in forecasted retail core peak day demand.

Retail Core Peak Day Demand and Supply Requirements (MMCF/day)

	2004	2005	2010	2015
Retail Core Demand	3,119	3,137	3,244	3,392
Firm Storage Withdrawal	1,935	1,935	2,001	2,092
Required Flowing Supplies	1,184	1,202	1,243	1,299

Notes:

Firm withdrawal and flowing supply requirements are shown to increase proportionally with demand growth beginning in 2006 and afterwards. Firm withdrawal plus firm pipeline supplies must be sufficient to meet peak day operating requirements.

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SOUTHERN CALIFORNIA GAS COMPANY
TABULAR DATA

ANNUAL GAS SUPPLY AND SENDOUT - MMCF/DAY
RECORDED YEARS 1999 TO 2003

Line			1999	2000	2001	2002	2003
	CAPACITY AVAILABLE						
1	California Source Gas						
	Out-of-State Gas						
2	California Offshore -POPCO / PIOC						
3	El Paso Natural Gas Co.						
4	Transwestern Pipeline Co.						
5	Kern / Mojave						
6	PGT / PG&E						
7	Other						
8	Total Out-of-State Gas						
9	TOTAL CAPACITY AVAILABLE						
	GAS SUPPLY TAKEN						
10	California Source Gas		271	386	388	300	241
	Out-of-State Gas						
11	Pacific Interstate Companies		111	0	0	0	0
12	Other Out-of-State		2,412	2,689	2,907	2,488	2,378
13	Total Out-of-State Gas		2,523	2,689	2,907	2,488	2,378
14	TOTAL SUPPLY TAKEN		2,794	3,075	3,295	2,788	2,619
15	Net Underground Storage Withdrawal		6	78	(70)	11	(11)
16	TOTAL THROUGHPUT (1)(2)		2,800	3,153	3,225	2,799	2,608
	ACTUAL DELIVERIES BY END-USE (3)						
17	Core	Residential	761	694	724	707	666
18		Commercial	197	199	205	205	200
19		Industrial	54	56	57	57	57
20		NGV	6	9	12	15	15
21		Subtotal	1,018	957	998	984	938
22	Noncore	Commercial	71	71	61	65	65
23		Industrial	377	392	338	368	346
24		EOR Steaming	25	33	29	39	42
25		Electric Generation	856	1,199	1,257	869	789
26		Subtotal	1,329	1,695	1,685	1,342	1,242
27	Wholesale	Residential	134	120	116	106	113
28		Com/Ind & Others	87	84	77	75	84
29		Electric Generation	181	231	276	234	172
30		Subtotal	402	435	469	415	369
31	International DGN		11	11	6	10	8
32	Co. Use & LUAF		40	55	66	48	51
33	SYSTEM TOTAL-THROUGHPUT (1)		2,800	3,153	3,225	2,799	2,608
	TRANSPORTATION AND EXCHANGE						
34	Core	All End Uses	42	42	26	14	10
35	Noncore	Commercial/Industrial	439	457	393	427	403
36		EOR Steaming	25	33	29	39	42
37		Electric Generation	855	1,197	1,255	869	788
38		Subtotal-Retail	1,361	1,729	1,703	1,348	1,243
39	Wholesale	All End Uses	402	435	469	415	369
40	International DGN		11	11	6	10	8
41	TOTAL TRANSPORTATION & EXCHANGE		1,774	2,175	2,178	1,773	1,620
	CURTAILMENT (RETAIL & WHOLESALE)						
42		Core	0	0	0	0	0
43		Noncore	0	0	0	0	0
44		TOTAL - Curtailment	0	0	0	0	0
45	REFUSAL		0	0	0	0	0

NOTES:

(1) Figures exclude pipeline bypass load losses due to non-jurisdictional gas suppliers. 395 387 410 358 499

(2) Exclude own-source gas supply of procurement by City of Long Beach. 10 11 11 11 4

(3) Actual deliveries by end-use includes sales, transportation, and exchange volumes.

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2004 THRU 2008

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2004	2005	2006	2007	2008	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		0	0	0	0	800	8
9	Total Out-of-State Gas		3,565	3,565	3,565	3,565	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		3,875	3,875	3,875	3,875	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,046	1,912	1,980	1,996	2,041	12
13	TOTAL SUPPLY TAKEN		2,356	2,222	2,290	2,306	2,351	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,356	2,222	2,290	2,306	2,351	15
	REQUIREMENTS FORECAST BY END-USE 3/							
16	CORE	Residential	687	693	697	697	702	16
17		Commercial	200	202	204	204	206	17
18		Industrial	58	59	59	59	59	18
19		NGV	18	20	22	24	24	19
20		Subtotal-CORE	963	974	982	984	991	20
21	NONCORE	Commercial	57	55	55	55	55	21
22		Industrial	302	282	280	280	280	22
23		EOR Steaming	33	33	33	33	28	23
24		Electric Generation (EG)	577	500	517	506	508	24
25		Subtotal-NONCORE	969	870	885	874	871	25
26	WHOLESALE	Core	175	179	184	186	180	26
27		Noncore Excl. EG	27	36	42	42	42	27
28		Electric Generation (EG)	167	109	142	164	209	28
29		Subtotal-WHOLESALE	369	324	368	392	431	29
30	INTERNATIONAL	DGN (Mexicali)	11	12	12	13	14	30
31		Co. Use & LUAF	44	42	43	43	44	31
32	SYSTEM TOTAL THROUGHPUT /1		2,356	2,222	2,290	2,306	2,351	32
	TRANSPORTATION AND EXCHANGE							
33	CORE	All End Uses	9	9	9	9	9	33
34	NONCORE	Commercial/Industrial	358	338	334	335	335	34
35		EOR Steaming	33	33	33	33	28	35
36		Electric Generation (EG)	577	500	517	506	508	36
37		Subtotal-RETAIL	977	880	893	883	880	37
38	WHOLESALE	All End Uses	369	324	368	392	431	38
39	INTERNATIONAL	All End Uses	11	12	12	13	14	39
40	TOTAL TRANSPORTATION & EXCHANGE		1,357	1,216	1,273	1,288	1,325	40
	CURTAILMENT (RETAIL & WHOLESALE)							
41		Core	0	0	0	0	0	41
42		Noncore	0	0	0	0	0	42
43		TOTAL - Curtailment	0	0	0	0	0	43

NOTES:

1/ Figures exclude pipeline bypass load losses of to non-jurisdictional gas suppliers. 788 838 894 919 934

2/ Excludes own-source gas supply of gas procurement by the City of Long Beach 3 3 3 3 3

3/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

4/ Liquified Natural Gas delivery capacity assumed to be available in 2008.

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2010 THRU 2025

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2010	2013	2016	2020	2025	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		1,963	2,027	2,055	2,136	2,284	12
13	TOTAL SUPPLY TAKEN		2,273	2,337	2,365	2,446	2,594	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,273	2,337	2,365	2,446	2,594	15
	REQUIREMENTS FORECAST BY END-USE 3/							
16	CORE	Residential	718	741	760	790	830	16
17		Commercial	209	213	217	223	231	17
18		Industrial	60	61	62	63	67	18
19		NGV	26	28	30	33	38	19
20		Subtotal-CORE	1,013	1,043	1,069	1,109	1,166	20
21	NONCORE	Commercial	56	57	57	58	59	21
22		Industrial	282	285	285	287	290	22
23		EOR Steaming	19	19	19	19	19	23
24		Electric Generation (EG)	413	433	431	458	519	24
25		Subtotal-NONCORE	770	794	792	822	887	25
26	WHOLESALE	Core	182	188	195	204	217	26
27		Noncore Excl. EG	42	42	43	43	44	27
28		Electric Generation (EG)	209	211	206	205	213	28
29		Subtotal-WHOLESALE	433	441	444	452	474	29
30	INTERNATIONAL	DGN (Mexicali)	14	15	16	17	18	30
31		Co. Use & LUAF	43	44	44	46	49	31
32	SYSTEM TOTAL THROUGHPUT /1		2,273	2,337	2,365	2,446	2,594	32
	TRANSPORTATION AND EXCHANGE							
33	CORE	All End Uses	9	9	9	10	10	33
34	NONCORE	Commercial/Industrial	338	341	342	345	350	34
35		EOR Steaming	19	19	19	19	19	35
36		Electric Generation (EG)	413	433	431	458	519	36
37		Subtotal-RETAIL	779	802	801	832	898	37
38	WHOLESALE	All End Uses	433	441	444	452	474	38
39	INTERNATIONAL	All End Uses	14	15	16	17	18	39
40	TOTAL TRANSPORTATION & EXCHANGE		1,226	1,258	1,261	1,301	1,390	40
	CURTAILMENT (RETAIL & WHOLESALE)							
41		Core	0	0	0	0	0	41
42		Noncore	0	0	0	0	0	42
43		TOTAL - Curtailment	0	0	0	0	0	43

NOTES:

1/ Figures exclude pipeline bypass load losses of to non-jurisdictional gas suppliers. 994 1,021 992 982 965

2/ Excludes own-source gas supply of gas procurement by the City of Long Beach 3 3 3 3 3

3/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

4/ Liquified Natural Gas delivery capacity assumed to be available in 2008.

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2004 THRU 2008

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2004	2005	2006	2007	2008	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		0	0	0	0	800	8
9	Total Out-of-State Gas		3,565	3,565	3,565	3,565	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		3,875	3,875	3,875	3,875	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,143	2,011	2,079	2,098	2,141	12
13	TOTAL SUPPLY TAKEN		2,453	2,321	2,389	2,408	2,451	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,453	2,321	2,389	2,408	2,451	15
	REQUIREMENTS FORECAST BY END-USE 3/							
16	CORE	Residential	756	762	767	768	773	16
17		Commercial	210	213	214	215	216	17
18		Industrial	59	60	60	60	60	18
19		NGV	18	20	22	24	24	19
20		Subtotal-CORE	1,043	1,055	1,063	1,067	1,073	20
21	NONCORE	Commercial	57	55	55	55	55	21
22		Industrial	302	282	280	280	280	22
23		EOR Steaming	33	33	33	33	28	23
24		Electric Generation (EG)	577	500	517	506	508	24
25		Subtotal-NONCORE	969	870	885	874	871	25
26	WHOLESALE	Core	190	195	200	203	196	26
27		Noncore Excl. EG	27	36	42	42	42	27
28		Electric Generation (EG)	167	109	142	164	209	28
29		Subtotal-WHOLESALE	384	340	384	409	447	29
30	INTERNATIONAL	DGN (Mexicali)	11	12	12	13	14	30
31		Co. Use & LUAF	46	44	45	45	46	31
32	SYSTEM TOTAL THROUGHPUT /1		2,453	2,321	2,389	2,408	2,451	32
	TRANSPORTATION AND EXCHANGE							
33	CORE	All End Uses	9	9	9	9	9	33
34	NONCORE	Commercial/Industrial	358	338	334	335	335	34
35		EOR Steaming	33	33	33	33	28	35
36		Electric Generation (EG)	577	500	517	506	508	36
37		Subtotal-RETAIL	977	880	893	883	880	37
38	WHOLESALE	All End Uses	384	340	384	409	447	38
39	INTERNATIONAL	All End Uses	11	12	12	13	14	39
40	TOTAL TRANSPORTATION & EXCHANGE		1,372	1,232	1,289	1,305	1,341	40
	CURTAILMENT (RETAIL & WHOLESALE)							
41		Core	0	0	0	0	0	41
42		Noncore	0	0	0	0	0	42
43		TOTAL - Curtailment	0	0	0	0	0	43

NOTES:

1/ Figures exclude pipeline bypass load losses of to non-jurisdictional gas suppliers. 788 838 894 919 934

2/ Excludes own-source gas supply of gas procurement by the City of Long Beach 3 3 3 3 3

3/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

4/ Liquified Natural Gas delivery capacity assumed to be available in 2008.

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2010 THRU 2025

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2010	2013	2016	2020	2025	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,063	2,132	2,161	2,247	2,401	12
13	TOTAL SUPPLY TAKEN		2,373	2,442	2,471	2,557	2,711	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,373	2,442	2,471	2,557	2,711	15
	REQUIREMENTS FORECAST BY END-USE 3/							
16	CORE	Residential	790	815	836	869	913	16
17		Commercial	219	223	227	233	242	17
18		Industrial	61	63	63	65	68	18
19		NGV	26	28	30	33	38	19
20		Subtotal-CORE	1,096	1,129	1,156	1,200	1,261	20
21	NONCORE	Commercial	56	57	57	58	59	21
22		Industrial	282	285	285	287	290	22
23		EOR Steaming	19	19	19	19	19	23
24		Electric Generation (EG)	413	433	431	458	519	24
25		Subtotal-NONCORE	770	794	792	822	887	25
26	WHOLESALE	Core	197	205	212	222	237	26
27		Noncore Excl. EG	42	42	43	43	44	27
28		Electric Generation (EG)	209	211	206	205	213	28
29		Subtotal-WHOLESALE	448	458	461	470	494	29
30	INTERNATIONAL	DGN (Mexicali)	14	15	16	17	18	30
31		Co. Use & LUAF	45	46	46	48	51	31
32	SYSTEM TOTAL THROUGHPUT /1		2,373	2,442	2,471	2,557	2,711	32
	TRANSPORTATION AND EXCHANGE							
33	CORE	All End Uses	9	10	10	10	11	33
34	NONCORE	Commercial/Industrial	338	341	342	345	350	34
35		EOR Steaming	19	19	19	19	19	35
36		Electric Generation (EG)	413	433	431	458	519	36
37		Subtotal-RETAIL	779	803	802	832	899	37
38	WHOLESALE	All End Uses	448	458	461	470	494	38
39	INTERNATIONAL	All End Uses	14	15	16	17	18	39
40	TOTAL TRANSPORTATION & EXCHANGE		1,241	1,276	1,279	1,319	1,411	40
	CURTAILMENT (RETAIL & WHOLESALE)							
41		Core	0	0	0	0	0	41
42		Noncore	0	0	0	0	0	42
43		TOTAL - Curtailment	0	0	0	0	0	43

NOTES:

1/ Figures exclude pipeline bypass load losses of to non-jurisdictional gas suppliers. 994 1,021 992 982 965

2/ Excludes own-source gas supply of gas procurement by the City of Long Beach 3 3 3 3 3

3/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

4/ Liquified Natural Gas delivery capacity assumed to be available in 2008.

2004 California Gas Report

CITY OF LONG BEACH
ENERGY DEPARTMENT

CITY OF LONG BEACH
ENERGY DEPARTMENT

The annual gas supply and requirements for the Long Beach Energy Department (Long Beach) are shown on the following tables for the years 1999 through 2003 and the estimated years 2004 through 2025. Long Beach prepared all forecasted requirements.

Serving approximately 145,000 customers, Long Beach is the largest California municipal gas utility and the fifth largest municipal gas utility in the United States. Long Beach's service territory includes the cities of Long Beach and Signal Hill, and sections of surrounding communities including Lakewood, Bellflower, Compton, Seal Beach, Paramount, and Los Alamitos. Long Beach's customer load profile is 50 percent residential and 50 percent commercial/industrial.

As a municipal utility, Long Beach's rates and policies are established by the City Council, which acts as the regulatory authority. The City Charter requires the gas utility to establish its rates comparable to the rates charged by surrounding gas utilities for similar types of service.

Long Beach receives approximately ten percent of its gas supply directly into its pipeline system from local production fields that are located within Long Beach's service territory, as well as offshore. Previous to 2002, Long Beach received one third of its gas supply through local production. In 2001, THUMS began using the majority of State-owned gas to fuel its co-generation facility located in the Port. This has resulted in larger demand of gas supply to be purchased at the California border, primarily from the Southwestern United States. Long Beach, as a wholesale customer, receives intrastate transmission service for this gas from SoCalGas.

2004 California Gas Report

CITY OF LONG BEACH ENERGY DEPARTMENT – TABULAR DATA

ANNUAL GAS SUPPLY AND SENDOUT - MMCF/DAY
RECORDED YEARS 1999 THRU 2003

LINE	GAS SUPPLY AVAILABLE	1999	2000	2001	2002	2003	LINE
	California Source Gas						
1	Regular Purchases						1
2	Received for Exchange/Transport						2
3	Total California Source Gas						3
4	Purchases from Other Utilities						4
	Out-of-State Gas						
5	Pacific Interstate Companies						5
6	Additional Core Supplies						6
7	Incremental Supplies						7
8	Out-of-State Transport						8
9	Total Out-of-State Gas						9
10	Subtotal						10
11	Underground Storage Withdrawal						11
12	GAS SUPPLY AVAILABLE						12
	GAS SUPPLY TAKEN						
	California Source Gas						
13	Regular Purchases	10	11	11	10	4	13
14	Received for Exchange/Transport	0	0	0	0	0	14
15	Total California Source Gas	10	11	11	10	4	15
16	Purchases from Other Utilities	0	0	0	0	0	16
	Out-of-State Gas						
17	Pacific Interstate Companies	0	0	0	0	0	17
18	Additional Core Supplies	0	0	0	0	0	18
19	Incremental Supplies	27	24	21	21	29	19
20	Out-of-State Transport	0	0	0	0	0	20
21	Total Out-of-State Gas	27	24	21	21	29	21
22	Subtotal	37	35	32	31	33	22
23	Underground Storage Withdrawal	0	0	0	0	0	23
24	TOTAL Gas Supply Taken & Transported	37	35	32	31	33	24

ANNUAL GAS SUPPLY AND SENDOUT - MMCF/DAY
RECORDED YEARS 1999 THRU 2003

LINE	ACTUAL DELIVERIES BY END-USE		1999	2000	2001	2002	2003	LINE
1	CORE	Residential	18	17	17	16	16	1
2	CORE/NONCORE	Commercial	7	7	7	7	7	2
3	CORE/NONCORE	Industrial	10	9	7	6	7	3
4		Subtotal	36	33	31	29	30	4
5	NON CORE	Non-EOR Cogeneration	0.1	0.0	0.1	0.2	3	5
6		EOR Cogen. & Steaming	0	0	0	0	0	6
7		Electric Utilities	0	0	0	0	0	7
8		Subtotal	0.1	0.0	0.1	0.2	3	8
9	WHOLESALE	Residential	0	0	0	0	0	9
10		Com. & Ind., others	0	0	0	0	0	10
11		Electric Utilities	0	0	0	0	0	11
12		Subtotal-WHOLESALE	0	0	0	0	0	12
13		Co. Use & LUAF	0.5	1	1	0.5	0.0	13
14		Subtotal-END USE	36	35	32	30	33	14
15		Storage Injection	0	0	0	0	0	15
16	SYSTEM TOTAL-THROUGHPUT		36	35	32	30	33	16
	ACTUAL TRANSPORTATION AND EXCHANGE							
17		Residential	N/A	N/A	N/A	N/A	N/A	17
18		Commercial/Industrial	N/A	N/A	N/A	N/A	N/A	18
19		Non-EOR Cogeneration	N/A	N/A	N/A	N/A	N/A	19
20		EOR Cogen. & Steaming	N/A	N/A	N/A	N/A	N/A	20
21		Electric Utilites	N/A	N/A	N/A	N/A	N/A	21
22		Subtotal-RETAIL	27	24	21	21	29	22
23	WHOLESALE	All End Uses	0	0	0	0	0	23
24	TOTAL TRANSPORTATION & EXCHANGE		27	24	21	21	29	24
	ACTUAL CURTAILMENT							
25		Residential	0	0	0	0	0	25
26		Commercial/Industrial	0	0	0	0	0	26
27		Non-EOR Cogeneration	0	0	0	0	0	27
28		EOR Cogen. & Steaming	0	0	0	0	0	28
29		Electric Utilites	0	0	0	0	0	29
30		Wholesale	0	0	0	0	0	30
31		TOTAL- Curtailment	0	0	0	0	0	31
32	REFUSAL		0	0	0	0	0	32

NOTE: Actual deliveries by end-use includes sales, transportation, and exchange volumes, but excludes actual curtailments.

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2004 THRU 2008

AVERAGE TEMPERATURE YEAR

LINE	CAPACITY AVAILABLE		2004	2005	2006	2007	2008	LINE
1	California Source Gas							1
2	Out-of-State Gas							2
3	TOTAL CAPACITY AVAILABLE							3
	GAS SUPPLY TAKEN							
4	California Source Gas		3	3	3	3	3	4
5	Out-of-State Gas		30	31	30	31	30	5
6	TOTAL SUPPLY TAKEN		34	34	34	34	33	6
7	Net Underground Storage Withdrawal		0	0	0	0	0	7
8	TOTAL THROUGHPUT (1)		34	34	34	34	33	8
	REQUIREMENTS FORECAST BY END-USE (1)							
9	CORE	Residential	17	17	17	17	17	9
10		Commercial	5	5	5	5	5	10
11		NGV	0.1	0.1	0.1	0.1	0.1	11
12		Subtotal-CORE	22	22	22	22	23	12
13	NONCORE	Industrial	8	8	8	8	8	13
14		Non-EOR Cogeneration	3	3	3	3	3	14
15		EOR	0	0	0	0	0	15
16		Utility Electric Generation	0	0	0	0	0	16
17		NGV	0	0	0	0	0	17
18		Subtotal-NONCORE	11	11	11	11	11	18
19		Co. Use & LUAF	0.3	0.3	0.3	0.3	0.3	19
20	SYSTEM TOTAL THROUGHPUT (1)		33	33	33	33	33	20
21	SYSTEM CURTAILMENT		0	0	0	0	0	21
	TRANSPORTATION							
22	CORE	All End Uses	23	23	23	23	23	22
23	NONCORE	Industrial	8	8	8	8	8	23
24		Non-EOR Cogeneration	3	3	3	3	3	24
25		EOR	0	0	0	0	0	25
26		Utility Electric Generation	0	0	0	0	0	26
27		Subtotal NONCORE	11	11	11	11	11	27
28	TOTAL TRANSPORTATION		34	34	33	34	33	28

(1) Requirement forecast by end-use includes sales and transportation volumes.

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2010 THRU 2025

AVERAGE TEMPERATURE YEAR

LINE	CAPACITY AVAILABLE		2010	2013	2016	2020	2025	LINE
1	California Source Gas							1
2	Out-of-State Gas							2
3	TOTAL CAPACITY AVAILABLE							3
	GAS SUPPLY TAKEN							
4	California Source Gas		3	3	3	3	3	4
5	Out-of-State Gas		30	30	30	30	30	5
6	TOTAL SUPPLY TAKEN		33	33	33	34	34	6
7	Net Underground Storage Withdrawal		0	0	0	0	0	7
8	TOTAL THROUGHPUT (1)		33	33	33	34	34	8
	REQUIREMENTS FORECAST BY END-USE (1)							
9	CORE	Residential	17	17	17	17	17	9
10		Commercial	5	5	5	5	5	10
11		NGV	0.1	0.1	0.1	0.1	0.1	11
12		Subtotal-CORE	23	23	23	22	22	12
13	NONCORE	Industrial	8	8	8	8	8	13
14		Non-EOR Cogeneration	3	3	3	3	3	14
15		EOR	0	0	0	0	0	15
16		Utility Electric Generation	0	0	0	0	0	16
17		NGV	0	0	0	0	0	17
18		Subtotal-NONCORE	11	11	11	11	11	18
19		Co. Use & LUAF	0.3	0.3	0.3	0.3	0.3	19
20	SYSTEM TOTAL THROUGHPUT (1)		33	33	33	33	33	20
21	SYSTEM CURTAILMENT		0	0	0	0	0	21
	TRANSPORTATION							
22	CORE	All End Uses	23	23	23	23	23	22
23	NONCORE	Industrial	8	8	8	8	8	23
24		Non-EOR Cogeneration	3	3	3	3	3	24
25		EOR	0	0	0	0	0	25
26		Utility Electric Generation	0	0	0	0	0	26
27		Subtotal NONCORE	11	11	11	11	11	27
28	TOTAL TRANSPORTATION		34	33	33	33	33	28

(1) Requirement forecast by end-use includes sales and transportation volumes.

2004 California Gas Report

SAN DIEGO
GAS & ELECTRIC COMPANY

San Diego Gas & Electric Company (SDG&E), a Sempra Energy company, is a combined gas and electric distribution utility serving more than three million people in San Diego and southern Orange counties. SDG&E delivers natural gas to over 800,000 customers in San Diego County, including the power plants and turbines previously owned and operated by the company. Total gas sales and transportation through SDG&E's system for 2003 was approximately 115 billion cubic feet (Bcf), which is an average of over 316 million cubic feet per day (MMcf/day). These 2003 deliveries corresponded to a decrease in gas usage by power generators within San Diego's service territory compared to earlier years.

GAS DEMAND

This projection of natural gas requirements, excluding electric generation (EG) demand, reflects the forecast and planning assumptions from SDG&E's Gas Market OIR (R.04-01-025) Phase I data response filing. This demand is projected to increase by 11% between 2004 and 2013, which is 1.5% lower than the anticipated growth over the same period from the last long-term forecast in the *2002 California Gas Report*. Assumptions for SDG&E's gas transport requirements for cogeneration and EG are included as part of the wholesale market sector description for Southern California.

SDG&E projects core and noncore sales and transportation customer gas consumption and peak demand for its service territory, with the exception of gas requirements for the fossil fuel power plants. Customer gas usage forecasts are derived from models that integrate demographic assumptions, economics, energy prices, conservation, marketing programs, building and appliance standards, weather, and other factors. These forecasting models use econometric techniques and end-use forecasting methodologies.

The compressed natural gas vehicle market continues to grow at a moderate rate due to federal, state and local incentives for the purchase of school and transit buses. San Diego's Metropolitan Transit System expects to add a significant number of new NGV buses, going from 290 to at least 600 vehicles over the next four to five years. Transit vehicles account for over 85% of the total NGV throughput. Additionally, the increased reliability of the refueling infrastructure and a substantial differential between the gasoline and CNG prices has aided growth. At the end of 2003, there were 30 NGV fueling stations servicing approximately 1,600 vehicles in the San Diego County area.

GAS SUPPLY

SDG&E continues to procure and deliver natural gas for its customers, with its current core portfolio consisting of supplies from Canada, southwest basins and spot

market purchases at the California border. In response to the Commission's Gas Market OIR, SDG&E proposed guidelines for acquiring interstate pipeline capacity to provide supply diversity and flexibility for the future. Gas procurement will continue to be subject to a performance-based incentive mechanism that allows for the reasonableness of gas purchases to be judged against a market benchmark.

SDG&E has long-term contracts with El Paso Natural Gas Company for a total of 25.8 MMcf/day of firm transportation capacity and for 51.2 MMcf/day on the PGT/PG&E (1993 Expansion) pipeline system from Canada. Underground storage inventory rights for SDG&E's core gas customers totaling 8,000,000 Decatherms (Dth) are specified in the current one-year natural gas service contract with SoCalGas. As the gas industry continues to change in response to market dynamics, however, SDG&E's firm pipeline and storage capacity needs and supply portfolio mix can be expected to be revised to ensure customer service reliability at reasonable costs.

There is expected to be sufficient supply deliverability to SDG&E's gas system from the SoCalGas pipeline system and storage facilities. Gas delivery is made primarily through the Moreno-to-San Diego transmission pipeline.

PEAK DAY DEMAND AND DELIVERABILITY

SDG&E's design peak day gas demand consists of projected requirements for its core market of residential and small commercial customers, as well as a limited amount of retail noncore gas requirements. The peak day is expected to occur during the winter season due to demand for gas space heating. SDG&E plans to meet its design peak day gas demand from a combination of flowing gas supplies and withdrawing gas storage inventory.

SDG&E's gas transmission system is designed to provide a 100 percent level of service to all core customers under design peak day conditions. Because this design peak day is expected to occur only once every 35 years, the remaining capacity during non-peak conditions is available to serve noncore customers. During periods of cold weather or extremely high electric generation demand, however, it may not always be possible to maintain a 100% level of service to all noncore customers under the current system design criteria.

The following table shows SDG&E's core gas demand forecast for the 1-in-35-year design peak day for the winter periods. This assumes that supplies from storage withdrawal are at SDG&E's maximum allowable rate under the terms of the current SoCalGas service contract and are used before out-of-state flowing gas supply purchases for the peak day core requirements. SDG&E storage withdrawal rights are assumed for this table to continue at the same level after expiration of the current storage contract with SoCalGas. Any increase (or reduction) in firm storage inventory withdrawal will result in a decrease (or increase) in the requirement for out-of-state flowing gas supplies.

SAN DIEGO GAS & ELECTRIC COMPANY
Design Peak Day Forecast
for Core Demand and Supplies
(MMCF/DAY)

	2004-05	2005-06	2006-07
PEAK DAY DEMAND:	398	401	405
AVAILABLE SUPPLY			
Storage Withdrawal	225	225	225
Out-of-State Supply	173	176	180
TOTAL CORE SUPPLY:	398	401	405

2004 California Gas Report

SAN DIEGO GAS & ELECTRIC COMPANY
TABULAR DATA

ANNUAL GAS SUPPLY TAKEN

RECORDED YEARS 1999-2003

MMCFD

LINE		1999	2000	2001	2002	2003	LINE
	GAS SUPPLY AVAILABLE						
1	California Source Gas						1
	Regular Purchases						
	Received for Exchange/Transport						
2	Total California Source Gas						2
3							3
4	Purchases from Other Utilities						4
5							5
6	Out-of-State Gas						6
7	Incremental Supplies (Utility)						7
	Out-of-State Transport (for others)						
8	TOTAL Out-of-State Gas						8
9	GAS SUPPLY AVAILABLE						9
10	Underground Storage Withdrawal						10
	GAS SUPPLY TAKEN						
	California Source Gas						
11	Regular Purchases	18	10	9	3	3	11
12	Received for Exchange/Transport	0	0	0	0	0	12
13	**Total California Source Gas**	18	10	9	3	3	13
14	**Purchases from Other Utilities**	0	0	0	0	0	14
	Out-of-State Gas						
15	Supplemental Supplies-Utility	200	145	131	122	133	15
16	Out-of-State Transport-Others	131	233	284	247	182	16
17	**Total Out-of-State Gas**	331	378	415	369	315	17
18	**TOTAL Gas Supply Taken & Transported**	349	388	424	371	317	18

ACTUAL GAS SUPPLY AND SENDOUT
RECORDED YEARS 1999-2003
MMCFD

LINE	Actual Deliveries by End-Use		1999	2000	2001	2002	2003	LINE
1	CORE	Residential	104	92	93	92	87	1
2		Commercial	41	40	46	49	47	2
3		Industrial	0	0	0	0	0	3
4	*Subtotal -*	*CORE*	145	132	139	141	134	4
5	NONCORE	Commercial	0	0	0	0	0	5
6		Industrial	22	21	12	10	10	6
7		Non-EOR Cogen/EG	128	228	276	234	172	7
8		Electric Utilities	51	0	0	0	0	8
9	*Subtotal -*	*NONCORE*	201	249	288	244	182	9
10	WHOLESALE	All End Uses	0	0	0	0	0	10
11	*Subtotal -*	*Co Use & LUAF*	4	7	-2	-14	1	11
12	SYSTEM TOTAL THROUGHPUT		350	388	425	371	317	12
	Actual Transport & Exchange							
13	CORE	Residential	0	0	0	0	0	13
14		Commercial	5	5	6	7	2	14
15	NONCORE	Industrial	6	5	6	8	9	15
16		Non-EOR Cogen/EG	120	222	272	232	171	16
17		Electric Utilities	0	0	0	0	0	17
18	*Subtotal -*	*RETAIL*	131	233	284	247	182	18
19	WHOLESALE	All End Uses	0	0	0	0	0	19
20	TOTAL TRANSPORT & EXCHANGE		131	233	284	247	182	20
	Storage							
21		*Storage Injection*	15	17	12	11	20	21
22		*Storage Withdrawal*	27	20	7	16	18	22
	Actual Curtailment							
23		Residential	0	0	0	0	0	23
24		Com/Indl & Cogen	0	0	0	0	0	24
25		Electric Generation	0	1	3	0	0	25
26	TOTAL CURTAILMENT		0	1	3	0	0	26
27	REFUSAL		0	0	0	0	0	27
	ACTUAL DELIVERIES BY END-USE includes sales and transportation volumes							
		MMbtu/Mcf:	1.009	1.013	1.018	1.014	1.012	

Annual Gas Supply and Requirements
Forecast Years 2004-2008
MMCF/Day
Average Temperature Year

Line	GAS SUPPLY AVAILABLE	2004	2005	2006	2007	2008	Line
1	California Source Gas						1
2	Regular Purchases	0	0	0	0	0	2
3	Received for Exchange/Transport	0	0	0	0	0	3
4	Total California Source Gas	0	0	0	0	0	4
5	Purchases from Other Utilities	0	0	0	0	0	5
6	Out-of-State Gas						6
7	Incremental Supplies (Utility)	141	142	143	145	147	7
8	Out-of-State Transport (for others)	178	115	147	168	215	8
9	Total Out-of-State Gas	319	256	290	313	362	9
10	GAS SUPPLY AVAILABLE	319	256	290	313	362	10
11	Underground Storage Withdrawal	22	22	22	22	22	11
12	GAS SUPPLY TAKEN						12
13	California Source Gas						13
14	Regular Purchases	0	0	0	0	0	14
15	Received for Exchange/Transport	0	0	0	0	0	15
16	Total California Source Gas	0	0	0	0	0	16
17	Purchases from Other Utilities	0	0	0	0	0	17
18	Out-of-State Gas						18
19	Incremental Supplies (Utility)	141	142	143	145	147	19
20	Out-of-State Transport (for others)	178	115	147	168	215	20
21	Total Out-of-State Gas	319	256	290	313	362	21
22	TOTAL Gas Supply Taken & Transported	319	256	290	313	362	22
23	Underground Storage Withdrawal	22	22	22	22	22	23

Annual Gas Supply and Requirements
Forecast Years 2004-2008
MMCF/Day
Average Temperature Year

Line	Requirements Forecast by End-Use		2004	2005	2006	2007	2008	Line
1	CORE	Residential	88	89	89	90	91	1
2		Commercial	46	47	47	48	48	2
3		NGV	2	2	2	2	2	3
4		Industrial	0	0	0	0	0	4
5	*Subtotal -*	*CORE*	136	138	139	140	142	5
6	NONCORE	Commercial	0	0	0	0	0	6
7		Industrial	10	10	10	10	10	7
8		Electric Generation	169	106	138	159	206	8
9	*Subtotal -*	*NONCORE*	179	116	148	169	216	9
10	WHOLESALE	All End Uses	0	0	0	0	0	10
11		*Co Use & LUAF*	3	3	3	3	4	11
12	SYSTEM TOTAL - THROUGHPUT		319	256	290	313	362	12
13		*Storage Injection*	22	22	22	22	22	13
14	Transportation & Exchange							14
15	CORE	All End Uses	2	2	2	2	2	15
16	NONCORE	Commercial/Industrial	9	9	9	9	9	16
17		Electric Generation	167	104	136	157	204	17
18	*Subtotal -*	*RETAIL*	178	115	147	168	215	18
19	WHOLESALE	All End Uses	0	0	0	0	0	19
20	TOTAL TRANSPORT & EXCHANGE		178	115	147	168	215	20
21	CURTAILMENT (Retail & Wholesale)							21
22		Core	0	0	0	0	0	22
23		Commercial/Industrial	0	0	0	0	0	23
24		Electric Generation	0	0	0	0	0	24
25	*Total -*	*CURTAILMENT*	0	0	0	0	0	25
26	REFUSAL		0	0	0	0	0	26

NOTE:
Requirement forecast by end-use includes sales, transportation, and exchange volumes.
(Sub-Totals and Totals may vary due to rounding)

Annual Gas Supply and Requirements
Forecast Years 2010-2025
MMCF/Day
Average Temperature Year

Line	GAS SUPPLY AVAILABLE	2010	2013	2016	2020	2025	Line
1	California Source Gas						1
2	Regular Purchases	0	0	0	0	0	2
3	Received for Exchange/Transport	0	0	0	0	0	3
4	Total California Source Gas	0	0	0	0	0	4
5	Purchases from Other Utilities	0	0	0	0	0	5
6	Out-of-State Gas						6
7	Incremental Supplies (Utility)	151	157	163	172	183	7
8	Out-of-State Transport (for others)	215	216	213	212	218	8
9	Total Out-of-State Gas	366	373	376	384	401	9
10	GAS SUPPLY AVAILABLE	366	373	376	384	401	10
11	Underground Storage Withdrawal	22	22	22	22	22	11
12	GAS SUPPLY TAKEN						12
13	California Source Gas						13
14	Regular Purchases	0	0	0	0	0	14
15	Received for Exchange/Transport	0	0	0	0	0	15
16	Total California Source Gas	0	0	0	0	0	16
17	Purchases from Other Utilities	0	0	0	0	0	17
18	Out-of-State Gas						18
19	Incremental Supplies (Utility)	151	157	163	172	183	19
20	Out-of-State Transport (for others)	215	216	213	212	218	20
21	Total Out-of-State Gas	366	373	376	384	401	21
22	TOTAL Gas Supply Taken & Transported	366	373	376	384	401	22
23	Underground Storage Withdrawal	22	22	22	22	22	23

Annual Gas Supply and Requirements
Forecast Years 2010-2025
MMCF/Day
Average Temperature Year

Line	Requirements Forecast by End-Use		2010	2013	2016	2020	2025	Line
1	CORE	Residential	94	98	102	108	116	1
2		Commercial	50	52	53	56	60	2
3		NGV	2	3	3	3	3	3
4		Industrial	0	0	0	0	0	4
5	*Subtotal -*	*CORE*	146	152	158	167	178	5
6	NONCORE	Commercial	0	0	0	0	0	6
7		Industrial	10	11	11	12	13	7
8		Electric Generation	206	206	203	201	206	8
9	*Subtotal -*	*NONCORE*	216	217	214	213	219	9
10	WHOLESALE	All End Uses	0	0	0	0	0	10
11		*Co Use & LUAF*	4	4	4	4	4	11
12	SYSTEM TOTAL - THROUGHPUT		366	373	376	384	401	12
13		*Storage Injection*	22	22	22	22	22	13
14	Transportation & Exchange							14
15	CORE	All End Uses	2	2	2	2	2	15
16	NONCORE	Commercial/Industrial	9	9	10	10	11	16
17		Electric Generation	204	205	201	199	204	17
18	*Subtotal -*	*RETAIL*	215	216	213	212	218	18
19	WHOLESALE	All End Uses	0	0	0	0	0	19
20	TOTAL TRANSPORT & EXCHANGE		215	216	213	212	218	20
21	CURTAILMENT (Retail & Wholesale)							21
22		Core	0	0	0	0	0	22
23		Com/Ind	0	0	0	0	0	23
24		Electric Generation	0	0	0	0	0	24
25	*Total -*	*CURTAILMENT*	0	0	0	0	0	25
26	REFUSAL		0	0	0	0	0	26

NOTE:
Requirement forecast by end-use includes sales, transportation and exchange volumes.
(Sub-Totals and Totals may vary due to rounding)

2004 California Gas Report

LOS ANGELES DEPARTMENT OF WATER AND POWER

LOS ANGELES DEPARTMENT OF WATER AND POWER

The Los Angeles Department of Water and Power (LADWP), the nation's largest municipally owned utility with a service territory of 465 square miles, supplies water and electricity to approximately 3.8 million residents of the nation's second largest city. The array of generation resources is composed of hydro, coal, natural gas, nuclear, and renewables. Recognizing the need to minimize the impact of electric generation on basin air quality, LADWP gradually achieved the goal of 100-percent gas utilization. Currently, the LADWP basin gas generation facilities provide approximately 24 percent of annual generation needs, burning 54.3 Bcf in calendar year 2003.

Since 2000, the LADWP has invested about $1 billion in the modernization and upgrading of its generation portfolio, with another $1.4 billion earmarked for projects in 2003 to 2008. For its in-basin natural gas generating stations, it is in the midst of a major 10-year repowering program to increase reliability and efficiency.

Within the last 6 years, LADWP has seen a gas usage range from a high of 68.1 Bcf to a low consumption of 29.8 Bcf. The abundance of coal-fired generation and other economy energy purchase options have combined to limit basin gas-fired generation. Oil burning has been eliminated and ultra-low sulfur distillate for gas turbines serves as emergency backup.

LADWP's natural gas demand forecast is presented in the following tables for 2004 through 2025 and was developed in March 2004. It was based on the preliminary Fuel and Purchased Power Budget for native load only. The forecast assumes energy is also obtained from outside purchases, Renewable Energy, Distributed Generation, DSM, and any LADWP programs.

LADWP holds firm capacity rights on three interstate pipelines. The value of which has decreased as a result of a proliferation of gas supply from outside the state of California. This capacity also provides LADWP with flexibility in establishing its supply portfolio and provides a measure of security.

Since LADWP is entitled to approximately 25 percent of the electric transmission into California, it intends to remain active in governmental and regulatory proceedings affecting both gas and electric issues.

2004 California Gas Report

LOS ANGELES DEPARTMENT OF WATER AND POWER – TABULAR DATA

Los Angeles Department of Water and Power

ANNUAL GAS SUPPLY AND SENDOUT
RECORDED YEARS 1999-2003
MMCF/DAY

LINE	GAS SUPPLY AVAILABLE	1999	2000	2001	2002	2003	LINE
1	California Source Gas						1
	Out-of-State Gas						
2	California Offshore - POPCO/PIOC						2
3	El Paso Natural Gas Co.						3
4	Transwestern Pipeline Co.						4
5	Kern /Mojave						5
6	PGT/PG&E						6
7	Other						7
8	TOTAL Out-of-State Gas						8
9	Subtotal						9
10	Underground Storage Withdrawal						10
11	TOTAL GAS SUPPLY AVAILABLE						11
	GAS SUPPLY TAKEN						
12	California Source Gas	0	0	0	0	0	12
	Out-of-State Gas						
13	Pacific Interstate Companies	0	0	0	0	0	13
14	Other Out-of-State	148	186	157	116	149	14
15	Total Out-of-State Gas	148	186	157	116	149	15
16	Subtotal	148	186	157	116	149	
17	.Underground Storage Withdrawal	0	0	0	0	0	17
18	TOTAL GAS SUPPLY TAKEN	148	186	157	116	149	18

Los Angeles Department of Water and Power

ANNUAL GAS SUPPLY AND SENDOUT
RECORDED YEARS 1999-2003
MMCF/DAY

LINE	ACTUAL DELIVERIES BY END-USE		1999	2000	2001	2002	2003	LINE
1	CORE	Residential	0	0	0	0	0	1
2	CORE/NONCORE	Commercial	0	0	0	0	0	2
3	CORE/NONCORE	Industrial	0	0	0	0	0	3
4		Subtotal	0	0	0	0	0	4
5	NONCORE	Non-EOR Cogeneration	0	0	0	0	0	5
6		EOR Cogen. & Steaming	0	0	0	0	0	6
7		Electric Utilities	148	186	157	116	149	7
8		Subtotal	148	186	157	116	149	8
9	WHOLESALE	Residential	0	0	0	0	0	9
10		Com. & Ind., others	0	0	0	0	0	10
11		Electric Utilities	0	0	0	0	0	11
12		Subtotal WHOLESALE	0	0	0	0	0	12
13		Co. Use & LUAF	0	0	0	0	0	13
14		Subtotal-END USE	148	186	157	116	149	14
15		Storage Injection	0	0	0	0	0	15
16	SYSTEM TOTAL THROUGHPUT		148	186	157	116	149	16
	ACTUAL TRANSPORTATION AND EXCHANGE							
17	CORE	All End Uses	0	0	0	0	0	17
18	NONCORE	Commercial/Industrial	0	0	0	0	0	18
19		Non-EOR Cogeneration	0	0	0	0	0	19
20		EOR Cogen. & Steaming	0	0	0	0	0	20
21		Electric Utilities	148	186	157	116	149	21
22		Subtotal-RETAIL	148	186	157	116	149	22
23	WHOLESALE	All End Uses	0	0	0	0	0	23
24	TOTAL TRANSPORTATION & EXCHANGE		148	186	157	116	149	24
	CURTAILMENT (RETAIL & WHOLESALE)							
25		Core	0	0	0	0	0	25
26		Noncore	0	0	0	0	0	26
27		TOTAL-Curtailment	0	0	0	0	0	27
28	REFUSAL		0	0	0	0	0	28

ANNUAL GAS SUPPLY AND REQUIREMENTS
FORECAST YEARS 2004 THRU 2008
MMCF/DAY
AVERAGE TEMPERATURE YEAR

LINE	GAS SUPPLY AVAILABLE		2004	2005	2006	2007	2008	LINE
1	California Source Gas		0	0	0	0	0	1
	Out-of-State Gas							
2		California Offshore - POPCO/PIOC	0	0	0	0	0	2
3		El Paso Natural Gas Co.	36	36	36	0	0	3
4		Transwestern Pipeline Co.	0	0	0	0	0	4
5		Kern /Mojave	196	196	196	146	146	5
6		PGT/PG&E	0	0	0	0	0	6
7		Other	0	0	0	0	0	7
8	TOTAL Out-of-State Gas		232	232	232	146	146	8
9		Subtotal	232	232	232	146	146	9
10	Underground Storage Withdrawal		0	0	0	0	0	10
11	TOTAL GAS SUPPLY AVAILABLE		232	232	232	146	146	11
	GAS SUPPLY TAKEN							
12	California Source Gas		0	0	0	0	0	12
	Out-of-State Gas							
13		Pacific Interstate Companies	0	0	0	0	0	13
14		Other Out-of-State	107	119	139	144	151	14
15	Total Out-of-State Gas		107	119	139	144	151	15
16		Subtotal	107	119	139	144	151	
17	Underground Storage Withdrawal		0	0	0	0	0	17
18	TOTAL GAS SUPPLY TAKEN		107	119	139	144	151	18
LINE	REQUIREMENTS FORECAST BY END-USE							
1	CORE	Residential	0	0	0	0	0	1
2	CORE/NONCORE	Commercial	0	0	0	0	0	2
3	CORE/NONCORE	Industrial	0	0	0	0	0	3
4		Subtotal	0	0	0	0	0	4
5	NONCORE	Non-EOR Cogeneration	0	0	0	0	0	5
6		EOR Cogen. & Steaming	0	0	0	0	0	6
7		Electric Utilities	107	119	139	144	151	7
8		Subtotal	107	119	139	144	151	8
9	WHOLESALE	Residential	0	0	0	0	0	9
10		Com. & Ind., others	0	0	0	0	0	10
11		Electric Utilities	0	0	0	0	0	11
12		Subtotal WHOLESALE	0	0	0	0	0	12
13		Co. Use & LUAF	0	0	0	0	0	13
14		Subtotal-END USE	107	119	139	144	151	14
15		Storage Injection	0	0	0	0	0	15
16	SYSTEM TOTAL THROUGHPUT		107	119	139	144	151	16
	TRANSPORTATION AND EXCHANGE							
17	CORE	All End Uses	0	0	0	0	0	17
18	NONCORE	Commercial/Industrial	0	0	0	0	0	18
19		Non-EOR Cogeneration	0	0	0	0	0	19
20		EOR Cogen. & Steaming	0	0	0	0	0	20
21		Electric Utilities	107	119	139	144	151	21
22		Subtotal-RETAIL	107	119	139	144	151	22
23	WHOLESALE	All End Uses	0	0	0	0	0	23
24	TOTAL TRANSPORTATION & EXCHANGE		107	119	139	144	151	24
	CURTAILMENT (RETAIL & WHOLESALE)							
25		Core	0	0	0	0	0	25
26		Noncore	0	0	0	0	0	26
27		TOTAL-Curtailment	0	0	0	0	0	27
28	REFUSAL		0	0	0	0	0	28

ANNUAL GAS SUPPLY AND REQUIREMENTS
FORECAST YEARS 2010-2025

AVERAGE TEMPERATURE YEAR

GAS SUPPLY AVAILABLE		2010	2013	2016	2020	2025	LINE
California Source Gas		0	0	0	0	0	1
Out-of-State Gas							
	California Offshore - POPCO/PIOC	0	0	0	0	0	2
	El Paso Natural Gas Co.	0	0	0	0	0	3
	Transwestern Pipeline Co.	0	0	0	0	0	4
	Kern /Mojave	146	146	0	0	0	5
	PGT/PG&E	0	0	0	0	0	6
	Other	0	0	0	0	0	7
TOTAL Out-of-State Gas		0	0	0	0	0	8
	Subtotal	0	0	0	0	0	9
Underground Storage Withdrawal		0	0	0	0	0	10
TOTAL GAS SUPPLY AVAILABLE		0	0	0	0	0	11
GAS SUPPLY TAKEN							
California Source Gas		0	0	0	0	0	12
Out-of-State Gas							
	Pacific Interstate Companies	0	0	0	0	0	13
	Other Out-of-State	150	162	180	205	232	14
Total Out-of-State Gas		150	162	180	205	232	15
	Subtotal	150	162	180	205	232	
.Underground Storage Withdrawal		0	0	0	0	0	17
TOTAL GAS SUPPLY TAKEN		150	162	180	205	232	18
REQUIREMENTS FORECAST BY END-USE							
CORE	Residential	0	0	0	0	0	1
CORE/NONCORE	Commercial	0	0	0	0	0	2
CORE/NONCORE	Industrial	0	0	0	0	0	3
	Subtotal	0	0	0	0	0	4
NONCORE	Non-EOR Cogeneration	0	0	0	0	0	5
	EOR Cogen. & Steaming	0	0	0	0	0	6
	Electric Utilities	150	162	180	205	232	7
	Subtotal	150	162	180	205	232	8
WHOLESALE	Residential	0	0	0	0	0	9
	Com. & Ind., others	0	0	0	0	0	10
	Electric Utilities	0	0	0	0	0	11
	Subtotal WHOLESALE	0	0	0	0	0	12
	Co. Use & LUAF	0	0	0	0	0	13
	Subtotal-END USE	150	162	180	205	232	14
	Storage Injection	0	0	0	0	0	15
SYSTEM TOTAL THROUGHPUT		150	162	180	205	232	16
TRANSPORTATION AND EXCHANGE							
CORE	All End Uses	0	0	0	0	0	17
NONCORE	Commercial/Industrial	0	0	0	0	0	18
	Non-EOR Cogeneration	0	0	0	0	0	19
	EOR Cogen. & Steaming	0	0	0	0	0	20
	Electric Utilities	150	162	180	205	232	21
	Subtotal-RETAIL	150	162	180	205	232	22
WHOLESALE	All End Uses	0	0	0	0	0	23
TOTAL TRANSPORTATION & EXCHANGE		150	162	180	205	232	24
CURTAILMENT (RETAIL & WHOLESALE)							
	Core	0	0	0	0	0	25
	Noncore	0	0	0	0	0	26
	TOTAL-Curtailment	0	0	0	0	0	27
REFUSAL		0	0	0	0	0	28

2004 California Gas Report

GLOSSARY

AVERAGE DAY (Operational Definition)

Annual gas sales or requirements assuming average temperature year conditions divided by 365 days.

AVERAGE TEMPERATURE YEAR

Long-term average recorded temperature.

BCF

Billion cubic feet of gas.

BTU (British Thermal Unit)

Unit of measurement equal to the amount of heat energy required to raise the temperature of one pound of water one degree Fahrenheit. This unit is commonly used to measure the quantity of heat available from complete combustion of natural gas.

BYPASS

Most situations in which a customer is directly served by an interstate or intrastate pipeline without utilizing existing local distribution company facilities; however, in some cases direct delivery of gas is not considered bypass, e.g., a portion of California production. See Non-Utility Deliveries.

CALIFORNIA-SOURCE GAS

1. Regular Purchases – All gas received or forecast from California producers, excluding exchange volumes. Also referred to as Local Deliveries.
2. Received for Exchange/Transport – All gas received or forecast from California producers for exchange, payback, or transport.

CNG (Compressed Natural Gas)

Fuel for natural gas vehicles, typically natural gas compressed to 3000 pounds per square inch.

COGENERATION

Simultaneous production of electricity and thermal energy from the same fuel source. Also used to designate a separate class of gas customers.

COLD TEMPERATURE YEAR

Cold design-temperature conditions based on long-term recorded weather data.

COMMERCIAL (SoCalGas & SDG&E)

Category of gas customers whose establishments consist of services, manufacturing nondurable goods, dwellings not classified as residential, and farming (agricultural).

COMMERCIAL (PG&E)

Non-residential gas customers not engaged in electric generation, enhanced oil recovery, or gas resale activities with usage less than 20,800 therms per month.

COMPANY USE

Gas used by utilities for operational purposes, such as fuel for line compression and injection into storage.

CORE AGGREGATOR

Individuals or entities arranging natural gas commodity procurement activities on behalf of core customers. Also, sometimes known as an Energy Service Provider (ESP), a Core Transport Agent (CTA), or a Retail Service Provider (RSP).

CORE CUSTOMERS (SoCalGas & SDG&E)

All residential customers; all commercial and industrial customers with average usage less than 20,800 therms per month who typically cannot fuel switch. Also, those commercial and industrial customers (whose average usage is more than 20,800 therms per year) who elect to remain a core customer receiving bundled gas service from the LDC.

CORE CUSTOMERS (PG&E)

All customers with average usage less than 20,800 therms per month.

CORE SUBSCRIPTION

Noncore customers who elect to use the LDC as a procurement agent to meet their commodity gas requirements.

CPUC

California Public Utilities Commission

CUBIC FOOT OF GAS

Volume of natural gas, which, at a temperature of 60 F and an absolute pressure of 14.73 pounds per square inch, occupies one cubic foot.

CURTAILMENT

Temporary suspension, partial or complete, of gas deliveries to a customer or customers.

EG

Electric Generation (including cogeneration) by a utility, customer, or independent power producer.

ENERGY SERVICE PROVIDER (ESP)

Individuals or entities engaged in providing retail energy services on behalf of customers. ESP's may provide commodity procurement, but could also provide other services, e.g., metering and billing.

ENHANCED OIL RECOVERY (EOR)

Injection of steam into oil-holding geologic zones to increase ability to extract oil by lowering its viscosity. Also used to designate a special category of gas customers.

EXCHANGE

Delivery of Gas by one party to another and the delivery of an equivalent quantity by the second party to the first. Such transactions usually involve different points of delivery and may or may not be concurrent.

EXEMPT WHOLESALE GENERATORS (EWG)

A category of customers consuming gas for the purpose of generating electric power.

FERC

Federal Energy Regulatory Commission.

GAS ACCORD

The Gas Accord is a multi-party settlement agreement, which restructured PG&E's gas transportation and storage services. The settlement was filed with the CPUC in August 1996, approved by the CPUC in August 1997 (D.97-08-055) and implemented by PG&E in March 1998. In D.03-12-061, the CPUC ordered the Gas Accord structure to continue for 2004 and 2005.

Key features of the Gas Accord structure include the following: unbundling of PG&E's gas transmission service and a portion of its storage service; placing PG&E at risk for transmission service and a portion of its storage service; placing PG&E at risk for transmission and storage costs and revenues; establishing firm, tradable transmission and storage rights; and establishing transmission and storage rates.

GAS SENDOUT

That portion of the available gas supply that is delivered to gas customers for consumption, plus shrinkage.

HEATING DEGREE DAY(S)

A Measure of how much below a standard reference temperature (SoCalGas and SDG&E: 65F; PG&E 60F) actual temperatures have been. A basis for computing how much electricity and gas are needed for space heating purposes.

HOT TEMPERATURE YEAR

Hot design-temperature conditions, based on long-term recorded weather data.

INDUSTRIAL (SoCalGas & SDG&E)

Category of gas customers who are engaged in mining and in manufacturing durable goods.

INDUSTRIAL (PG&E)

Non-residential customers not engaged in electric generation, enhanced oil recovery, or gas resale activities using more than 20,800 therms per month.

LDC

Local electric and/or natural gas distribution company.

LNG (Liquefied Natural Gas)

Natural gas in its liquid state.

MMBTU

Million British Thermal Units.

MMCF

Million cubic feet of gas

MMCF/DAY

Million cubic feet of gas per day.

NGV (Natural Gas Vehicle)

Vehicle that uses CNG or LNG as its source of fuel for its internal combustion engine.

NONCORE CUSTOMERS

Commercial and industrial customers whose average usage exceeds 20,800 therms per month, including qualifying cogeneration and solar electric projects. Noncore customers assume gas procurement responsibilities and receive gas transportation service from the utility under firm or interruptible intrastate transmission arrangements.

NON-UTILITY DELIVERIES

The volume of gas delivered directly to customers by an interstate or intrastate pipeline or other independent source instead of the local distribution company.

OFF-SYSTEM SALES

Gas sales to customers outside the utility's service area.

OUT-OF-STATE GAS

Gas from sources outside the state of California.

PRIORITY OF SERVICE (SoCalGas & SDG&E)

In the event of a curtailment situation, utilities curtail gas usage to customers based on the following end-use priorities:

NONCORE SERVICE

Firm Service – All noncore customers served through firm intrastate transmission service, including core subscription service.

Interruptible – All noncore customers served through interruptible intrastate transmission service, including inter-utility deliveries.

PRIORITY OF SERVICE (PG&E)

In the event of a curtailment situation, PG&E curtails gas usage to customers based on the following end-use priorities:

Core Residential
Non-residential Core
Noncore using firm backbone service (including UEG)
Noncore using as-available backbone service (including UEG)
Market Center Services

PSIA

Pounds per square inch absolute. Equal to gauge pressure plus local atmospheric pressure.

PURCHASES FROM OTHER UTILITIES

Gas purchased from other utilities in California.

REQUIREMENTS

Total potential demand for gas, including that served by transportation, assuming the availability of unlimited supplies at reasonable cost.

RESALE

Gas customers who are either another utility or a municipal entity that, in turn, resells gas to end-use customers.

RESIDENTIAL

A category of gas customers whose dwellings are single-family units, multi-family units, mobile homes or other similar living facilities.

SHORT-TERM SUPPLIES

Gas purchased usually involving 30-day, short-term contract or spot gas supplies.

SPOT PURCHASES

Short-term purchases of gas typically not under contract and generally categorized as surplus or best efforts.

STORAGE BANKING

The direct use of local distribution company gas storage facilities by customers or other entities to store self-procured commodity gas supplies.

STORAGE INJECTION

Volume of natural gas injected into underground storage facilities.

STORAGE WITHDRAWAL

Volume of natural gas taken from underground storage facilities.

SUPPLEMENTAL SUPPLIES

A utility's best estimate for additional gas supplies that may be realized, from unspecified sources, during the forecast period.

SYSTEM CAPACITY or NORMAL SYSTEM CAPACITY
(*Operational Definition*)

The physical limitation of the system (pipelines and storage) to deliver or flow gas to end-users.

SYSTEM UTILIZATION or NOMINAL SYSTEM CAPACITY
(*Operational Definition*)

The use of system capacity or nominal system capacity at less then 100 percent utilization.

TAKE-OR-PAY

A term used to describe a contract agreement to pay for a product (natural gas) whether or not the product is delivered.

TARIFF

All rate schedules, sample forms, rentals, charges, and rules approved by regulatory agencies for used by the utility.

Tcf

Trillion cubic feet of gas.

THERM

A unit of energy measurement, nominally 100,000 BTUs.

TOTAL GAS SUPPLY AVAILABLE

Total quantity of gas estimated to be available to meet gas requirements.

TOTAL GAS SUPPLY TAKEN

Total quantity of gas taken from all sources to meet gas requirements.

TOTAL THROUGHPUT

Total gas volumes passing through the system including sales, company use, storage, transportation and exchange.

TRANSPORTATION GAS

Non-utility-owned gas transported for another party under contractual agreement.

UEG

Utility electric generation.

UNACCOUNTED FOR

Gas received into the system but unaccounted for due to measurement, temperature, pressure, or accounting discrepancies.

UNBUNDLING

The separation of natural gas utility services into its separate service components such as gas procurement, transportation, and storage with distinct rates for each service.

WACOG

Weighted average cost of gas.

WHOLESALE

A category of customer, either a utility or municipal entity, that resells gas.

2004 California Gas Report

RESPONDENTS

RESPONDENTS

The following utilities have been designated by the California Public Utilities Commission as respondents in the preparation of the California Gas Report:

- **Pacific Gas and Electric Company**
- **San Diego Gas & Electric Company**
- **Southern California Gas Company**

The following utilities also cooperated in the preparation of the report:

- **City of Long Beach Energy Department**
- **City of Los Angeles Department of Water and Power**
- **Sacramento Municipal Utilities District**
- **Southwest Gas Corporation**

A statewide committee have been formed by the respondents and cooperating utilities to prepare this report. The following individuals served on this committee:

WORKING COMMITTEE

Gregory Healy (Chairperson)	Sempra Energy Utilities*
Ginger Shugart	City of Long Beach Energy Department
Gino Beltran	Los Angeles Department of Water and Power
Carl Funke	San Diego Gas & Electric Company

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Sepideh Khosrowjah	California Public Utilities Commission Division of Strategic Planning
Todd Peterson	California Energy Commission
William Wood	California Energy Commission

*Sempra Energy Utilities represents: Southern California Gas Company and San Diego Gas & Electric Company.

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