CALIFORNIA ENERGY COMMISSION

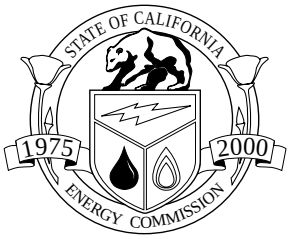
CALIFORNIA ENERGY DEMAND

2000 — 2010

Technical Report to
California Energy
Outlook 2000
Docket #99-CEO-1

STAFF REPORT

JUNE 2000
P200-00-002



Gray Davis, *Governor*

CALIFORNIA ENERGY COMMISSION

CALIFORNIA ENERGY DEMAND

2000 — 2010

STAFF REPORT

Technical Report to California Energy Outlook 2000 Docket #99-CEO-1

JUNE 2000
P200-00-002

Gray Davis, *Governor*

CALIFORNIA ENERGY COMMISSION

Richard Rohrer,
Principal Author

Thom Kelly,
Manager
DEMAND ANALYSIS OFFICE

H. Daniel Nix,
Deputy Director
ENERGY INFORMATION & ANALYSIS DIVISION

Steve Larson,
Executive Director

Introduction

The ***California Energy Demand 2000-2010*** report summarizes the California Energy Commission s retail electricity and natural gas consumption forecasts for California through the year 2010[1]. It also represents an element of our monitoring and policy functions, recently expressed in the Energy Commission s ***Report on Generator & Consumer Data Reporting Requirements***[2]**,** and provides information to market participants.

The demand forecast presented in this document is reported on a statewide and sector basis. It provides that information by traditional utility service area and also by transmission congestion zones established by the California Independent System Operator (ISO). The estimates also include the impacts of committed energy efficiency programs that have been funded and implemented through 2001. These committed programs continue after 2001 with declining level of impacts. The demand forecast does not include the impacts of uncommitted energy efficiency, nor does it include the impact of committed dispatchable load management programs[3].

The report is organized into the following four chapters:

- Chapter one discusses the staff s statewide end-use energy consumption forecasts through 2010. Included in this chapter is a forecast for each ISO congestion zone and peak demand temperature sensitivity scenarios.

- Chapter two reports sectoral consumption and examines the key economic and demographic drivers of energy consumption by end-use sector.

- Chapter three compares the demand forecasts in this report to the demand forecasts in the 1998 Baseline Outlook.

- Chapter four briefly describes the broad electric planning/service areas and gas service territories, defines the sectors used in the analysis, and provides references to the methodology used to produce these forecasts.

Six appendices provide additional information about the forecasts of annual electricity and natural gas use. Appendix A provides electricity consumption by sector and utility for the years 1980 through 2010. Appendix B shows recorded and forecast net energy for load, which includes losses and self generation, by utility. Appendix C contains tables of peak demand by sector and utility from 1990 through 2010. Appendix D provides recorded and forecast system peak demand by utility. In addition, Appendix D contains a table showing the

---

1 The forecasts were prepared using end-use models that employ a complex series of calculations that simultaneously consider such factors as economic growth, population, weather characteristics, changes in energy utilization, regulatory conditions, and recorded consumption.

2 California Energy Commission, *Report on Generator & Consumer Data Reporting Requirements*, P300-99-007, December 1999, <www.energy.ca.gov/reports/1999-12-17_300-99-007.html>.

3 Other Energy Commission analyses of system adequacy may use estimates of the impacts of uncommitted energy efficiency and dispatchable load management in their assessments.

detail underlying the ISO congestion zone forecast. Appendix E shows natural gas consumption by sector and utility for the years 1980 through 2010. Appendix F provides forecasts of committed electricity and natural gas energy efficiency program impacts.

Chapter I: Statewide Energy Consumption

California is the 10th largest consumer of energy in the world ranking slightly ahead of Italy and slightly behind France. The transportation sector consumes 46 percent of California energy, the industrial sector consumes 31 percent, residential 13 percent, and commercial 10 percent.

The transportation sector s 46 percent of energy consumption determines the importance of in-state energy sources with petroleum supplying 54 percent of California s energy. Natural gas supplies 33 percent and electricity contributes 13 percent (coal is a relatively unimportant fuel in California accounting for less than 1 percent) of total energy use. In contrast to some other regions of the U.S., very little petroleum is used in the residential, commercial, and industrial sectors. Thus electricity and natural gas are nearly synonymous with stationary energy usage, while petroleum is similarly synonymous with transportation energy.

This chapter discusses the staff s projection of electricity and natural gas consumption for the entire State. It begins with an examination of electricity use in the State, examines recent trends and ends with a forecast of future use. Following the discussion of electricity is an overview of historical and forecast natural gas consumption. Finally, there is a discussion of peak demand forecasts by ISO congestion zones and a presentation of peak demand sensitivity cases driven by different assumptions about temperature conditions.

Statewide Electricity Consumption and Peak Demand

Electricity Consumption

Table I-1 and **Figure I-1** show historical and forecast electricity consumption for major utilities. The data shown in **Table I-1** are for selected years and include loads served by self-generation, but do not include energy losses.

During the 1980s, total statewide electricity consumption grew from 166,979 GWh in 1980 to 228,038 GWh in 1990, an annual growth rate of 3.2 percent. Sacramento Municipal Utility District (SMUD), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E) were high growth areas. Electricity use from 1980 to 1990 grew as follows:

- in SMUD from 5,352 GWh to 8,358 GWh (4.6 percent per year),
- in SDG&E from 9,730 GWh to 14,798 GWh (4.3 percent per year), and
- in SCE from 59,624 GWH to 81,673 GWh (3.2 percent annually).

Growth in the Pacific Gas and Electric (PG&E) (2.7 percent) and Los Angeles Department of Water and Power (LADWP) (2.2 percent) areas lagged behind the other three areas and the State as a whole.

Consumption growth slowed in the early 1990s as a result of the severe economic recession that struck the State from 1990 to 1994. Southern California was hardest hit by the recession

and that is reflected in the weak electric growth for southern California utilities, with SCE growing by 1 percent from 81,673 GWh in 1990 to 88,434 GWh in 1998 and LADWP increasing from 21,971 GWh to 23,004 GWh or 0.6 percent.

TABLE I-1
Electricity Consumption by Utility Service Area
(GWh)

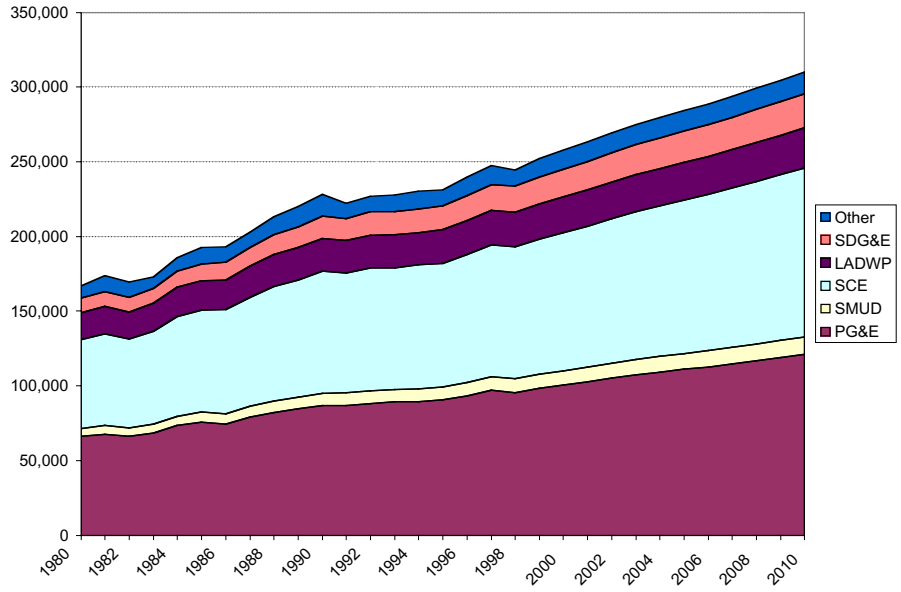
Year	PG&E	SMUD	SCE	LADWP	SDG&E	Other	Total State
1980	66,197	5,352	59,624	17,669	9,730	8,406	166,979
1990	86,806	8,358	81,673	21,971	14,798	14,432	228,038
1998	95,601	9,123	88,434	23,004	17,630	10,617	244,409
2004	109,219	10,460	100,822	24,985	20,539	13,541	279,565
2010	121,041	11,692	113,137	26,684	23,022	14,293	309,868
Annual Growth Rates (%)							
1980-90	2.7	4.6	3.2	2.2	4.3	5.6	3.2
1990-98	1.2	1.1	1.0	0.6	2.2	-3.8	0.9
1998-04	2.2	2.3	2.2	1.4	2.6	4.1	2.3
1998-10	2.0	2.1	2.1	1.2	2.2	2.5	2.0
Historic Data through 1998							

Source: Energy Commission staff

Over the forecast period, consumption is expected to grow at a stronger rate compared to the 1990s, but not as strong as 1980s growth. The forecast assumes steady, strong economic growth which translates into steady growth in electric consumption. Over the short term (1998-2004) consumption is projected to grow at 2.3 percent per year, and over the longer term (1998-2010) growth is expected to be 2 percent per year. The forecast growth is slower than 3.2 percent growth in the 1980s owing, in part, to continued savings from appliance and building standards and the shift to a less electricity intensive information economy.

The electricity data discussed above measured the amount of electricity customers used at their homes and businesses. Another measure of electricity use is the amount of electricity that must be provided by generators and supplied over the grid net energy for load. Net energy for load includes electric losses and excludes loads served by self-generation.

FIGURE I-1
Electricity Consumption by Utility Service Area
(GWh)



Source: Energy Commission staff

Table I-2 shows historical and forecast net energy for load for major utilities and for selected years. The forecast growth rates for net energy for load are comparable to the growth rates for energy consumption.

TABLE I-2
Net Energy for Load by Utility Service Area
(GWh)

Year	PG&E	SMUD	SCE	LADWP	SDG&E	Other	Total State
1980	71,861	5,695	63,370	20,055	10,419	9,028	180,428
1990	90,765	8,893	83,694	23,781	15,348	15,355	237,836
1998	98,000	9,707	90,303	24,302	18,449	11,457	252,218
2004	112,781	11,129	103,191	26,401	21,529	14,549	289,581
2010	125,739	12,440	116,344	28,330	24,188	15,381	322,421
Annual Growth Rates (%)							
1980-90	2.4	4.6	2.8	1.7	3.9	5.5	2.8
1990-98	1.0	1.1	1.0	0.3	2.3	-3.6	0.7
1998-04	2.4	2.3	2.2	1.4	2.6	4.1	2.3
1998-10	2.1	2.1	2.1	1.3	2.3	2.5	2.1
Historic Data through 1998							

Source: Energy Commission staff

Statewide Peak Demand

Peak demand, expressed in megawatts (MW), measures the largest electric power requirement during a specified period of time, usually integrated over one clock hour. Peak demand is important in evaluating system reliability, determining congestion points on the electric grid, and identifying potential areas where additional transmission, distribution, and generation facilities may be needed.

California s peak demand typically occurs on a day in August between the hours of 3 and 5 p.m. High temperature leads to increased air conditioning use by residential and commercial customers. These increased air conditioning loads in combination with industrial loads, commercial lighting and office equipment, and residential refrigerators create the peak demand use in California.

Table I-3 below shows historical and forecast electric peak demand for major utilities and for selected years. The data shown in Table I-3 are end use customer demand and do not include losses, but do include loads served by self-generation.

TABLE I-3
End Use Peak Demand by Utility Service Area
(MW)

Year	PG&E	SMUD	SCE	LADWP	SDG&E	Other	Total
1990	16,203	2,013	16,879	4,920	2,780	1,756	44,550
1999	19,417	2,531	18,359	5,115	3,318	2,002	50,743
2004	20,836	2,582	20,597	5,340	3,923	2,137	55,415
2010	23,034	2,859	22,871	5,604	4,367	2,300	61,034
Annual Growth Rates (%)							
1990-99	2.0	2.6	0.9	0.4	2.0	1.5	1.5
1999-04	1.4	0.4	2.3	0.9	3.4	1.3	1.8
1999-10	1.6	1.1	2.0	0.8	2.5	1.3	1.7
Historic Data through 1999							

Source: Energy Commission staff

From 1900 to 1999 statewide peak demand grew at 1.5 percent a year, with peak demand in PG&E, SMUD, and SDG&E growing at a faster rate than peak demand in the State and peak demand in SCE and LADWP, as a result of the recession, growing slower than the State as a whole.

Peak demand is expected to grow at a slightly higher rate over the forecast period. In the short term (1999-2004) peak growth is projected to be 1.8 percent annually, and over the longer term of 1999-2010, annual peak growth of 1.7 percent is forecast.

The peak demand data discussed above measured the amount of electricity customers used at their homes and businesses. Another measure of electricity is the amount of electricity that must be provided by generators and supplied over the grid system peak demand. System peak demand includes line losses and excludes loads served by self-generation. The system peak demand is the load that the control area operator must meet with supply options.

TABLE I-4
Noncoincident System Peak Demand by Utility Service Area
(MW)

Year	PG&E	SMUD	SCE	LADWP	SDG&E	Other	Total
1990	17,250	2,195	17,647	5,336	2,973	1,854	47,255
1999	20,369	2,759	19,125	5,400	3,567	2,115	53,335
2004	21,914	2,815	21,513	5,638	4,235	2,258	58,371
2010	24,325	3,117	23,959	5,932	4,721	2,429	64,483
Annual Growth Rates (%)							
1990-99	1.9	2.6	0.9	0.1	2.0	1.5	1.4
1999-04	1.5	0.4	2.4	0.9	3.5	1.3	1.8
1999-10	1.6	1.1	2.1	0.9	2.6	1.3	1.7
Historic Data through 1999							

Source: Energy Commission staff

The system peak demand is expected to grow the same as end use peak demand. From 1999 to 2004, total system peak is expected to at a 1.8 percent annual rate and, from 1999 to 2010, the projected annual growth is 1.7 percent. This forecast does not anticipate a major deployment of new distributed generation (which includes self-generation). Similarly, the forecast assumes no fundamental changes in electricity losses which would have resulted from changes in imports versus in-state generation.

Statewide Natural Gas Consumption

California is the second largest consumer of natural gas in the nation, ranking behind Texas. The use of natural gas as a feedstock for the Texas petrochemical industry results in Texas having three times the industrial natural gas use compared to California.

Table I-5 and **Figure I-2** show historical and forecast natural gas consumption for each major California natural gas utility service area PG&E, SDG&E, and Southern California Gas (SCG). The data shown in Table I-5 are for selected years and excludes natural gas used in the production of electricity, whether that gas is used by power plants or by cogeneration facilities. The natural gas demand data, both historical and forecast, include the impacts of various natural gas energy efficiency programs. These programs include building and appliance standards and utility energy efficiency programs.

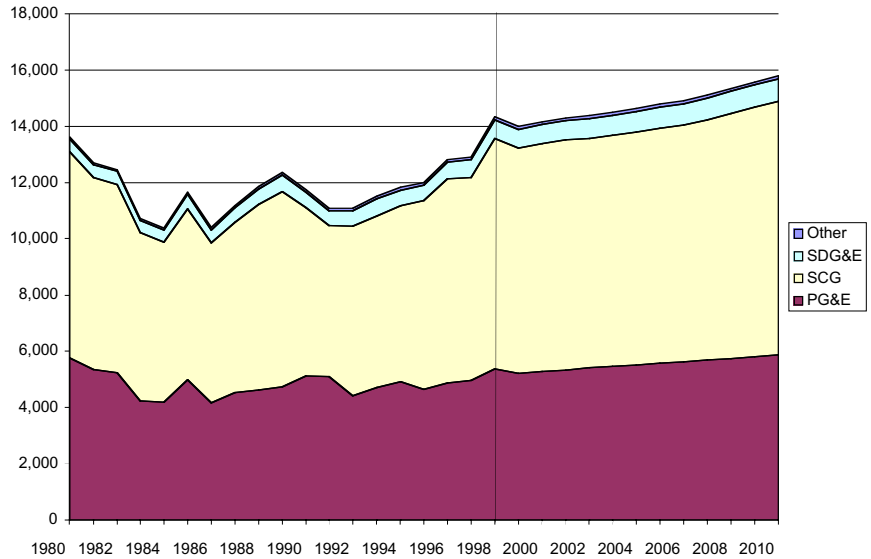
TABLE I-5
Natural Gas Consumption by Utility Service Area
(Millions of Therms)

Year	PG&E	SCG	SDG&E	Other	Total State
1980	5,752	7,328	470	78	13,627
1990	5,122	5,976	556	95	11,748
1998	5,365	8,207	662	111	14,344
2004	5,507	8,291	730	107	14,635
2010	5,863	9,020	806	112	15,802
Annual Growth Rates (%)					
1980-90	-1.2	-2.0	1.7	2.0	-1.5
1990-98	0.6	4.0	2.2	2.0	2.5
1998-04	0.4	0.2	1.6	-0.6	0.3
1998-10	0.7	0.8	1.7	0.1	0.8
Historic Data through 1998					

Source: Energy Commission staff

From 1980 to 1998, natural gas consumption increased by 0.3 percent per year, with consumption dropping by 1.5 percent annually in the 1980s followed by annual increase of 2.5 percent in the 1990s. Over the forecast period, natural gas use is expected to increase increasing to 14,635 million therms in 2004 (a 0.3 percent increase) and 15,802 million therms in 2010 (a 0.8 percent increase).

FIGURE I-2
Natural Gas Consumption by Utility
(Millions of Therms)



Source: Energy Commission staff

Forecast by Independent System Operator Zone

The ISO control area[4] is divided into geographic zones which are used to manage congestion. Congestion occurs on the grid when there is not enough transmission capacity to accommodate load, generation, or interchange requirements. The ISO congestion zones are defined so that congestion within a zone is less frequent and less significant, while congestion across zones is frequent and significant.

Through February 2000, ISO operations used two active congestion zones: North of Path 15 and South of Path 15. North of Path 15 is made up of the northern portion of the PG&E system, SMUD, Northern California Power Agency (NCPA), Modesto Irrigation District (MID), Turlock Irrigation District (TID), and the northern portion of the California Department of Water Resources (DWR) system. SCE, SDG&E, Pasadena, and the southern portion of the PG&E and DWR systems constitute the South of Path 15 zone.

After February 2000, a third active congestion zone was added to the ISO. This third zone, Path 26, is made up of the southern portion of the PG&E system (i.e., portions of Santa Barbara, San Luis Obispo, Kings, Tulare, and Kern counties that get electric service from PG&E).

TABLE I-6
Noncoincident System Peak Demand by ISO Zone (MW)
Zones through February 2000

	North of Path 15	South of Path 15	Total ISO	Non ISO
1999	21,615	24,739	46,354	6,981
2004	23,101	27,912	51,013	7,358
2010	25,631	31,033	56,664	7,819
Average Annual Growth Rate (%)				
1999-2004	1.3	2.4	1.9	1.1
1999-2010	1.6	2.1	1.8	1.0

Source: Energy Commission staff

Table I-6 shows peak demand forecast for the two active ISO congestion zones and the non-ISO portion of California for selected years. Peak demand South of Path 15 is expected to grow annually at a 2.4 percent rate in the short run and 2.1 percent over the longer run. Peak growth in the North of Path 15 zone is weaker than that South of Path 15, with 1.3 percent growth from 1999 to 2004 and 1.6 percent growth from 1999 to 2010, respectively.

[4]The following utilities are not included in the ISO control area: LADWP, Burbank, Glendale, and Imperial Irrigation District (IID). In addition, the ISO area does not include the northern tier of the State and the eastern slope of the Sierra Nevada.

TABLE I-7
Noncoincident System Peak Demand by ISO Zone (MW)
Zones after February 2000

	North of Path 15	Path 26	South of Path 15	Total ISO	Non ISO
1999	21,615	1,556	23,184	46,354	6,981
2004	23,101	1,669	26,243	51,013	7,358
2010	25,631	1,853	29,180	56,664	7,819
Average Annual Growth Rate (%)					
1999-2004	1.3	1.4	2.5	1.9	1.1
1999-2010	1.6	1.6	2.1	1.8	1.0

Source: Energy Commission staff

Table I-7 shows the peak demand forecast once Path 26 is added as a congestion zone. The sum of South of Path 15 and Path 26 in **Table I-7** equals the South of Path 15 value in **Table I-6**.

Over the short term, peak demand in north of Path 15 is expected to grow at an annual rate of 1.3 percent; growth in the Path 26 zone is forecast to be 1.4 percent per year. South of Path 15 peak demand is expected to grow at 2.5 percent, annually.

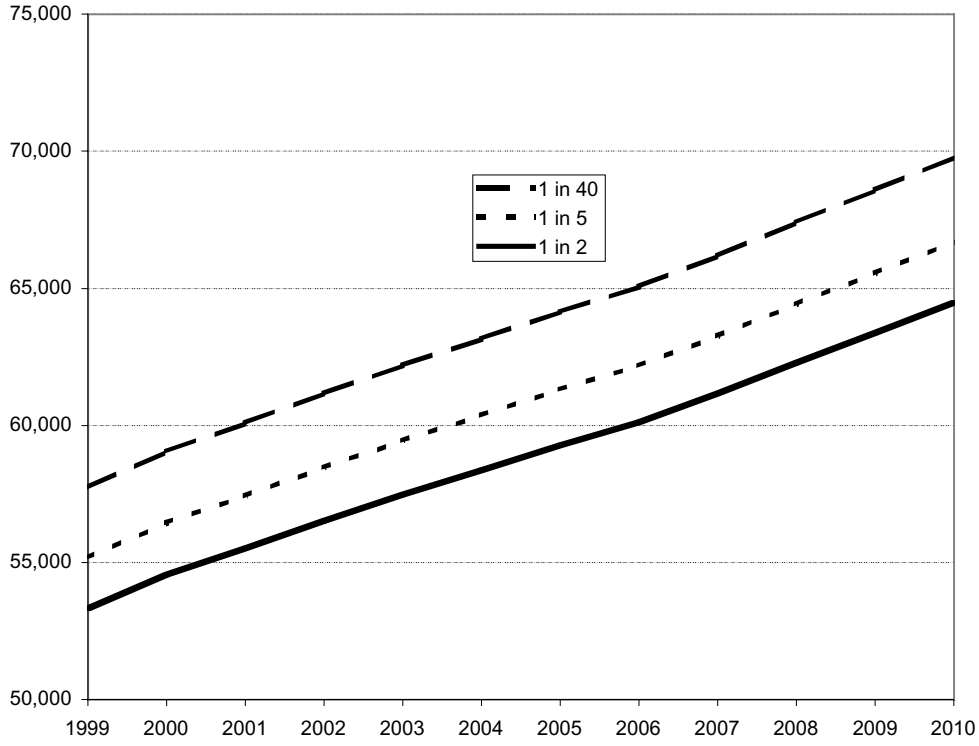
Peak Demand Temperature Sensitivity

The peak demand forecast is based on typical temperatures temperatures that are expected to occur one out of every two years (1 in 2). In July 1999, the Commission staff published a report, *High Temperatures & Electricity Demand*[5], that examined the effects of high temperatures on peak demand.

As part of the analysis of high temperature and peak demand, the report presented 1-in-5 and 1-in-40 year temperature sensitivity cases. The temperature sensitivities shown in **Figure I-3** were developed by applying the temperature sensitivity percent differences from the high temperature report to the 2000 baseline peak demand forecast[6].

[5]California Energy Commission, P300-99-004, July 1999, <www.energy.ca.gov/electricity/1999-07-23_HEAT_RPT.PDF>.
[6] The staff adjusted the SDG&E 1-in-40 temperature case to incorporate more recent temperature and load data.

FIGURE I-3
PEAK DEMAND TEMPERATURE SENSITIVITIES
(MW)



Source: Energy Commission staff

One in Five Year Case

Table I-8 shows the 1-in-5 temperature peak demand sensitivity. In 2010, the 1-in-5 case for the ISO area is 1,881 MW (3.3 percent) higher than the base case.

TABLE I-8
1-in-5 Peak Demand by ISO Zone (MW)
Zones through February 2000

	North Path 15	South Path 15	Total ISO	Non ISO	Increment over 1:2 ISO
1999	22,433	25,471	47,903	7,276	1,549
2004	23,979	28,728	52,707	7,665	1,693
2010	26,603	31,942	58,545	8,143	1,881
Average Annual Growth Rate (%)					
1999-2004	1.3	2.4	1.9	1.1	NA
1999-2010	1.6	2.1	1.8	1.0	NA

Source: Energy Commission staff

One in Forty Year Case

Table I-9 shows the 1-in-40 temperature peak demand sensitivity. The 1-in-40 case for the ISO area is 4,838 MW (8.5 percent higher than the base case in the year 2010).

TABLE I-9
1-in-10 Peak Demand by ISO Zone (MW)
Zones through February 2000

	North Path 15	South Path 15	Total ISO	Non ISO	Increment over 1:2 ISO
1999	23,680	26,655	50,335	7,396	3,980
2004	25,311	30,057	55,368	7,791	4,355
2010	28,081	33,421	61,502	8,276	4,838
Average Annual Growth Rate (%)					
1999-2004	1.3	2.4	1.9	1.1	NA
1999-2010	1.6	2.1	1.8	1.0	NA

Source: Energy Commission staff

Chapter II: Energy Outlook by Sector

This chapter reviews energy consumption trends in the residential, commercial and industrial sectors. It discusses some of the conditions expected to influence each market during the forecast period. The residential section pays special attention to the impact of energy consumption by households over time. The commercial section examines energy use per square foot. The industrial section identifies the largest energy consuming industry groups.

Basic Forecast Assumptions

Some of the basic assumptions underlying the electricity and natural gas forecasts are as follows:

1. No fundamental change in rate design that alters prices to end-users.
2. No major changes in electricity or natural gas end uses.
3. No major change in home occupancy patterns such as a large shift to home offices and telecommuting.
4. Continuation of current trends for population and household growth and land development patterns.
5. Continuation of strong economic growth.
6. Discontinuation of energy efficiency public goods charge program funding after 2002/3.

Table II-1 shows statewide electricity consumption by sector for key years.

TABLE II-1
California Electricity Consumption by Sector
GWh

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Consumption
1980	52,086	49,762	42,243	13,301	9,586	166,979
1990	67,669	74,562	51,195	20,849	13,763	228,038
1998	75,388	87,093	51,996	14,661	15,270	244,409
2004	82,978	100,490	60,140	18,954	17,002	279,565
2010	92,726	109,926	67,250	20,116	19,850	309,868
Annual Growth Rates (%)						
1980-90	2.7	4.1	1.9	4.6	3.7	3.2
1990-98	1.4	2.0	0.2	-4.3	1.3	0.9
1998-04	1.6	2.4	2.5	4.4	1.8	2.3
1998-10	1.7	2.0	2.2	2.7	2.2	2.0
Historic Data through 1998						

Source: Energy Commission staff

The commercial sector accounted for 36 percent of consumption in 1998. Residential use was 31 percent and industrial use represented 21 percent. The consumption share patterns are not projected to change significantly over the forecast period.

The fastest growing sector is agriculture with a 2.7 percent long run growth rate. However, most of this growth is due to changes in California Department of Water Resources (DWR) pumping and not from increased use by individual farmers. Residential electricity use is expected to increase by 1.7 percent growing from 75,388 GWh in 1998 to 92,726 GWh in 2010. Commercial and industrial electricity use are forecast to grow faster than the residential sector, with commercial use projected to grow at 2 percent per year and growth in industrial use expected to be 2.2 percent annually.

Table II-2 shows statewide natural gas consumption by sector for key years.

TABLE II-2
California Natural Gas Consumption by Sector
Millions of Therms

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	5,840	1,646	5,763	378	0	13,627
1990	5,212	1,895	4,228	413	0	11,748
1998	5,521	2,103	6,341	379	0	14,344
2004	5,254	2,252	6,597	382	150	14,635
2010	5,511	2,449	7,225	394	222	15,802
Annual Growth Rates (%)						
1980-90	-1.1	1.4	-3.0	0.9		-1.5
1990-98	0.7	1.3	5.2	-1.1		2.5
1998-04	-0.8	1.1	0.7	0.1		0.3
1998-10	0.0	1.3	1.1	0.3		0.8
Historic Data through 1998						

Source: Energy Commission staff

Natural gas use is expected to grow at a slow rate over the forecast period. Residential natural gas use in 2010 is projected to be at the same level as in 1998. Commercial gas use increases at a 1.3 percent annual rate to 2,449 million therms in 2010 and industrial use is forecast to grow to 7,225 million therms in 2010 (a 1,1 percent annual increase).

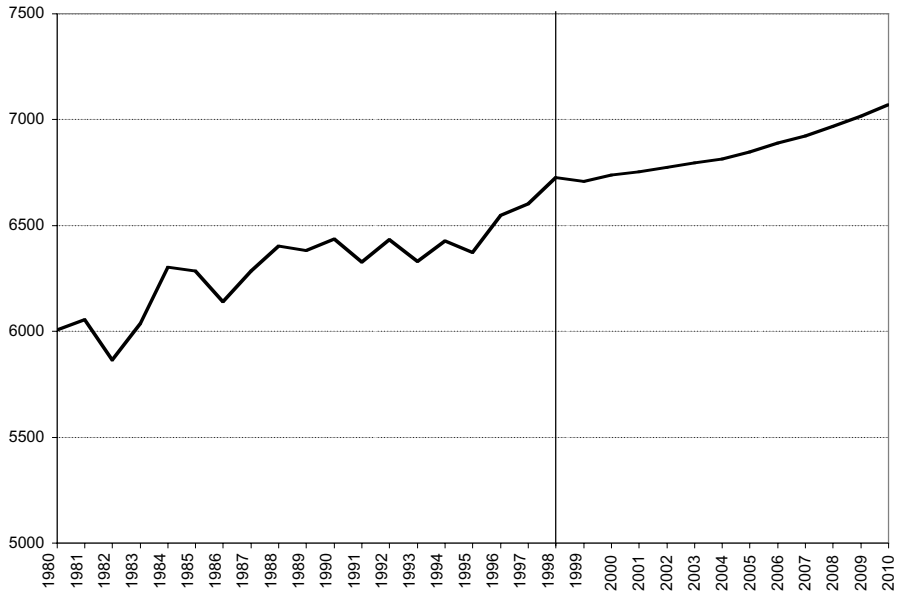
The industrial sector use of 6,341 million therms in 1998 represents 44 percent of total use and is expected to grow to 46 percent in 2010. The residential sector accounts for 38 percent of gas use, falling to 35 percent in 2010, and the commercial sector share is 15 percent in 1998 and 2010.

Residential Energy Consumption Trends

In 1998, statewide consumption of electricity by residential customers was 75,389 GWh growing by an average of 2.1 percent per year from 1980. Residential electricity use is expected to increase to 92,726 GWh in 2010 growth of 1.7 percent per year. Statewide consumption of natural gas by residential customers fell from 5,840 million therms in 1980 to 5,520 million therms in 1998, a decrease of 0.3 percent annually. Residential natural gas use is projected to continue falling until 2004 and then increase through 2010, resulting in a decrease of 0.1 percent per year to 5,511 million therms of consumption in 2010.

Figure II-1 shows statewide electricity use per household. From 1980 to 1998 electricity use per household grew at an annual rate of 0.6 percent and is projected to increase by 0.4 percent annually over the forecast period.

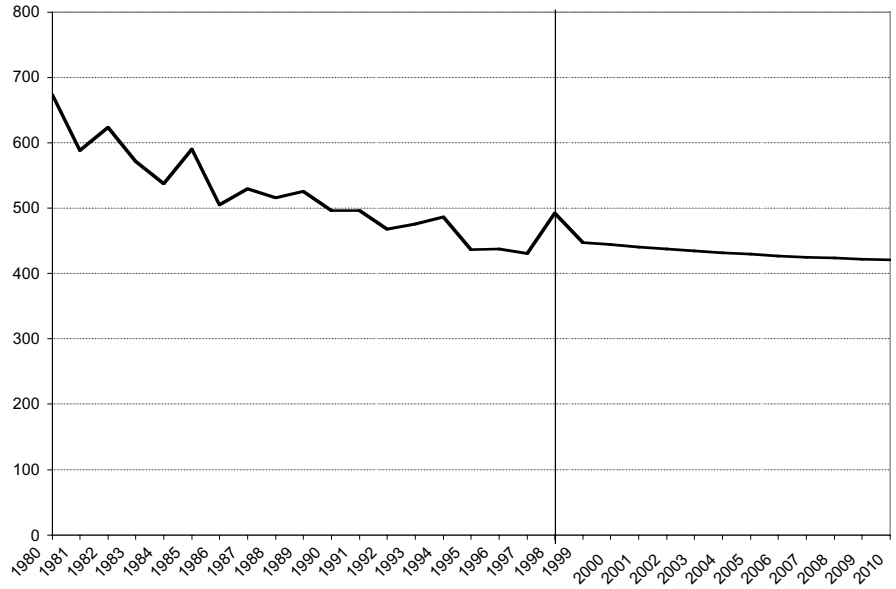
FIGURE II-1
RESIDENTIAL ELECTRICITY USE PER HOUSEHOLD
kWh per Household



Source: Energy Commission staff

Figure II-2 shows statewide natural gas use per household. From 1980 to 1998, natural gas use per household fell at an annual rate of 1.7 percent and is projected to drop by 1.3 percent annually over the forecast period.

FIGURE II-2
RESIDENTIAL NATURAL GAS CONSUMPTION PER HOUSEHOLD
Therms per Household



Source: Energy Commission staff

Factors Influencing Residential Consumption

As the number of households in California increases, so does residential energy use. Other important influences on the amount of energy used are personal income and prices for electricity and natural gas.

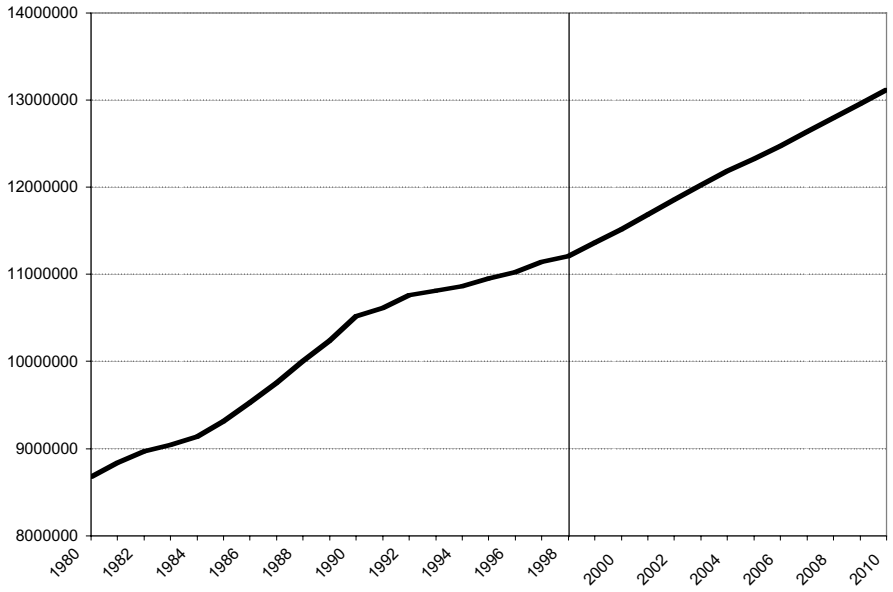
Figure II-3 shows the historical and forecast number of households in the State. From 1980 to 1998, the number of households grew at 1.4 percent. Over the forecast period, the growth in the number of households is expected to remain strong at 1.3 percent per year as population growth of 1.5 percent per year is expected to be partially offset by an increasing number of persons per household.

The forecast growth in households (1.3 percent) represents three-fourths of total residential electricity growth (1.7 percent). The remaining one-fourth of residential electricity growth is due to growth in use per household. The forecast increasing use per household is the result of expected declining real electric prices and strong growth in personal income as well as more housing being built in hotter regions of the State.

Over the forecast period, the 1.3 percent increase in the number of households is offset by a 1.3 decrease in use per customer, resulting in no change in total residential natural gas use. The decline in gas use per household is due to the impacts of building standards on natural

gas consumption and the fact that there are no new gas appliances. Increasing personal income allows customers to buy new electric appliances (such as computers and printers) and additional units of old appliances (such as two TVs or refrigerators). This increase in the number of electrical appliances contibutes to the increasing electricity use per household.

FIGURE II-3
STATEWIDE NUMBER OF HOUSEHOLDS



Source: Energy Commission staff

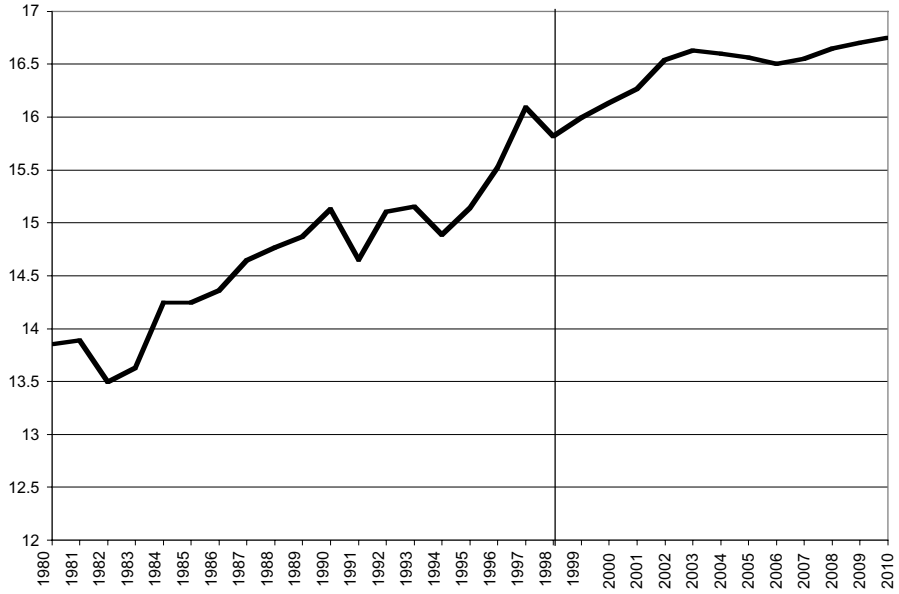
Commercial Energy Consumption Trends

Electricity consumption in commercial buildings accounted for 36 percent of statewide electricity consumption in 1997, with the share expected to remain the same through 2010. In 1998, statewide consumption of electricity by commercial buildings was 87,093 GWh growing by an average 3.2 percent per year from 49,762 GWh used in 1980. Electricity consumption is expected to increase 2.0 percent per year over the forecast period, reaching 109,926 GWh by 2010.

In 1998, statewide consumption of natural gas by commercial buildings was 2,129 million therms. Commercial natural gas use is expected to increase by 1.4 percent per year, reaching 2,460 million therms in 2010.

Figure II-4 shows statewide commercial electricity use per square foot of floor space. From 1980 to 1998, electricity use per square foot of floor space grew at an annual rate of 0.7 percent and is projected to increase by 0.5 percent annually over the forecast period.

FIGURE II-4
COMMERCIAL ELECTRICITY CONSUMPTION
kWh per Square Foot



Source: Energy Commission staff

Figure II-5 shows statewide natural gas use per square foot of commercial floor space. After falling by almost 1 percent per year from 1980 to 1998, use per square foot is projected to fall at a slower rate of 0.3 percent annually over the forecast period.

FIGURE II-5
COMMERCIAL NATURAL GAS CONSUMPTION
Therms per Square Foot

Source: Energy Commission staff

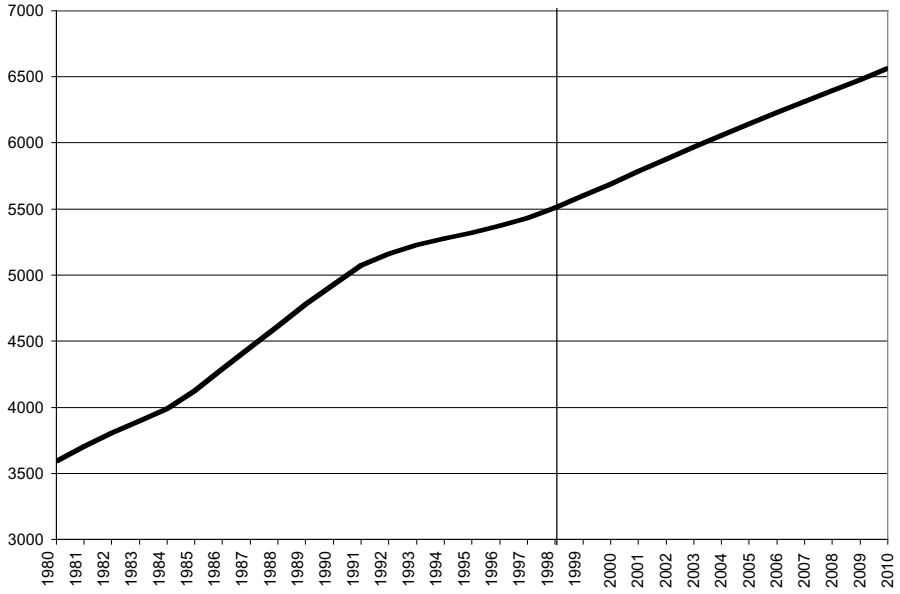
Factors Influencing Commercial Consumption

The total square footage of commercial business space is an important factor affecting the amount of electricity and natural gas consumed by commercial customers. Commercial floor space includes uses such as small and large offices, retail stores, warehouses and schools.

Figure II-6 shows historical and forecast commercial floor space. Commercial floor space increased by 2.4 percent per year from 1980 to 1998. Over the forecast period, growth in commercial floor space is expected to grow at a more moderate 1.5 percent annually.

Other factors influencing commercial energy use are vacancy rates, taxable sales, and population. For example, growth in school age population will lead to increases in natural gas use by schools.

FIGURE II-6
COMMERCIAL FLOORSPACE
Millions of Square Feet

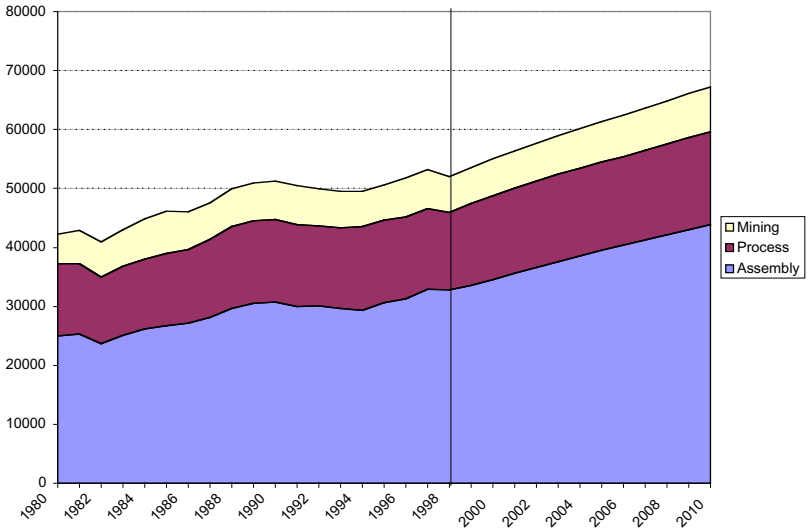


Source: Energy Commission staff

Industrial Energy Consumption Trends

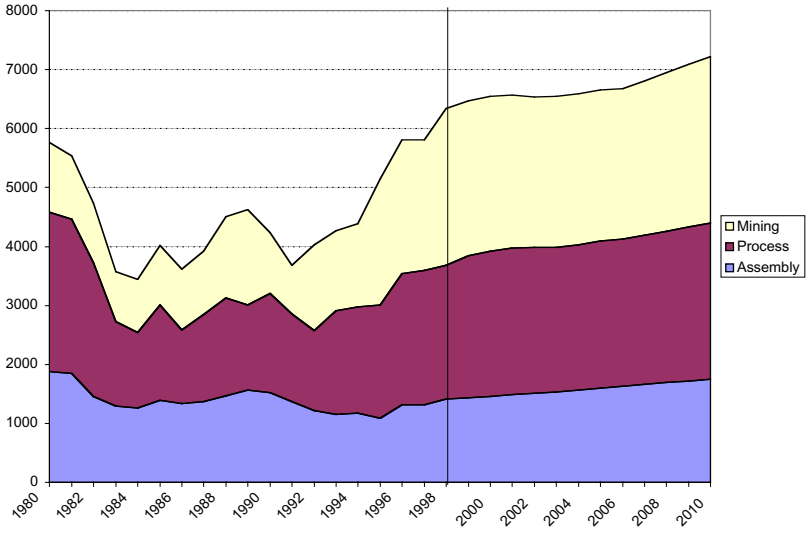
Electricity consumption in the industrial sector (i.e., process, resource extraction and assembly industries) comprised 21 percent of statewide use in 1998 and is expected to increase to 22 percent by 2010. Assembly industries accounted for the largest level of industrial electricity consumption (**Figure II-7**) while process and resource extraction (i.e., mining) industries used the largest levels of natural gas (**Figure II-8**). The large degree of natural gas consumption by the process and resource extraction industries reflects a heavy reliance on heat processing functions.

FIGURE II-7
Industrial Electricity Use (GWh)



Source: Energy Commission staff

FIGURE II-8
Industrial Natural Gas Use (Million Therms)

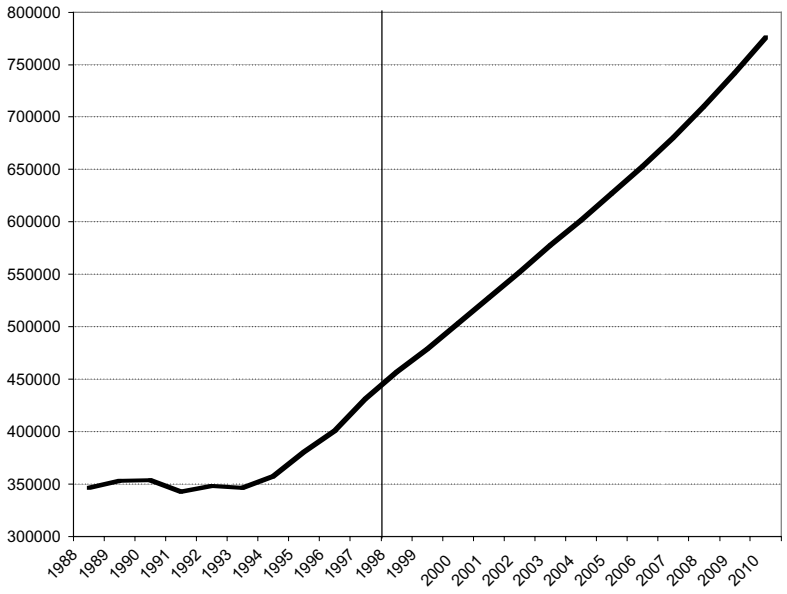


Source: Energy Commission staff

Factors Influencing Industrial Consumption

Industrial energy use is driven, primarily, by industrial employment and the output of manufacturing plants, measured by value of shipments. Figure II-9 shows historical and forecast value of shipments (in real 1998 dollars).

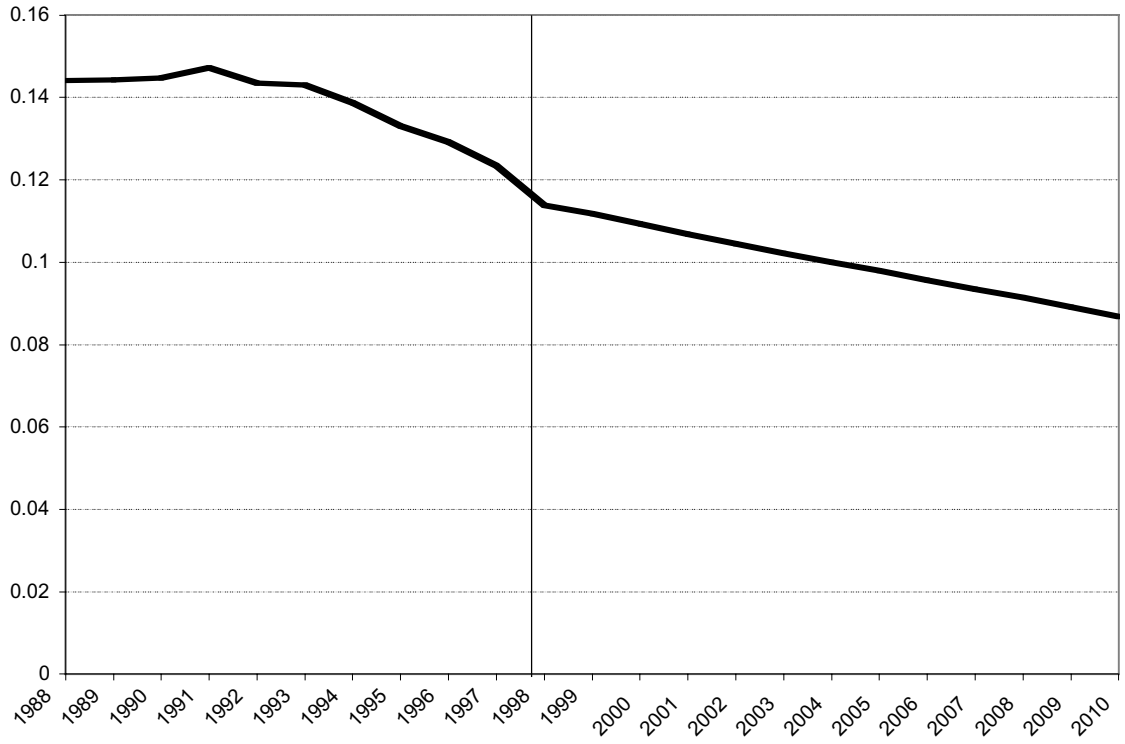
FIGURE II-9
STATEWIDE INDUSTRIAL VALUE OF SHIPMENTS
(MILLIONS OF 1998 DOLLARS)



Source: Energy Commission staff

Shipments were flat until 1994, reflecting the impact of the recession on the State. Beginning in 1994, shipments began to grow, and that growth is projected to continue over the forecast period growing by 4.5 percent per year from 1998 to 2010.

FIGURE II-10
STATEWIDE INDUSTRIAL ELECTRICITY USE PER VALUE OF SHIPMENTS
(Kwh per Dollar)

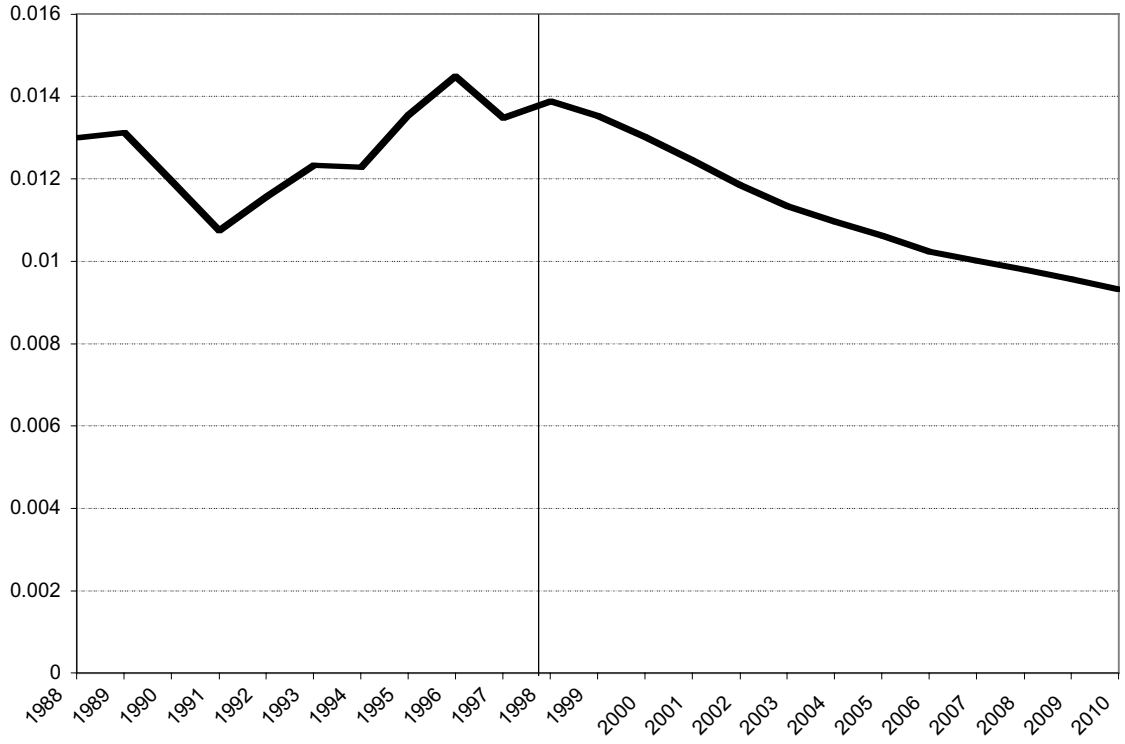


Source: Energy Commission staff

Decreasing use per shipment partially offsets the 4.5 percent growth in shipments over the forecast period. Use per shipment declines by an annual rate of 2.3 percent over the forecast. Combining the 4.5 percent growth in shipment and the 2.3 percent decrease in use per shipment results in the 2.2 growth in industrial electricity use.

The declining use per dollar of shipments represents a decrease in energy intensity of production. This decreased energy intensity is driven by a general decrease in overall industrial energy intensity as well as a shift in the mix of California industries to those that are relatively less energy intensive.

FIGURE II-11
STATEWIDE INDUSTRIAL NATURAL GAS USE PER VALUE OF SHIPMENTS
(Therms per Dollar)



Source: Energy Commission staff

Natural gas use per shipment is expected to decline over the forecast period as the energy intensity of industry decreases. The 4.5 percent increase in shipments is offset, in part, by a 3.3 percent decrease in gas use per shipment, resulting in a 1.1 percent increase in industrial natural gas use.

Chapter III: Comparison to 1998 Baseline Outlook

This chapter compares the current forecast to the staff s 1998 baseline outlook[7].

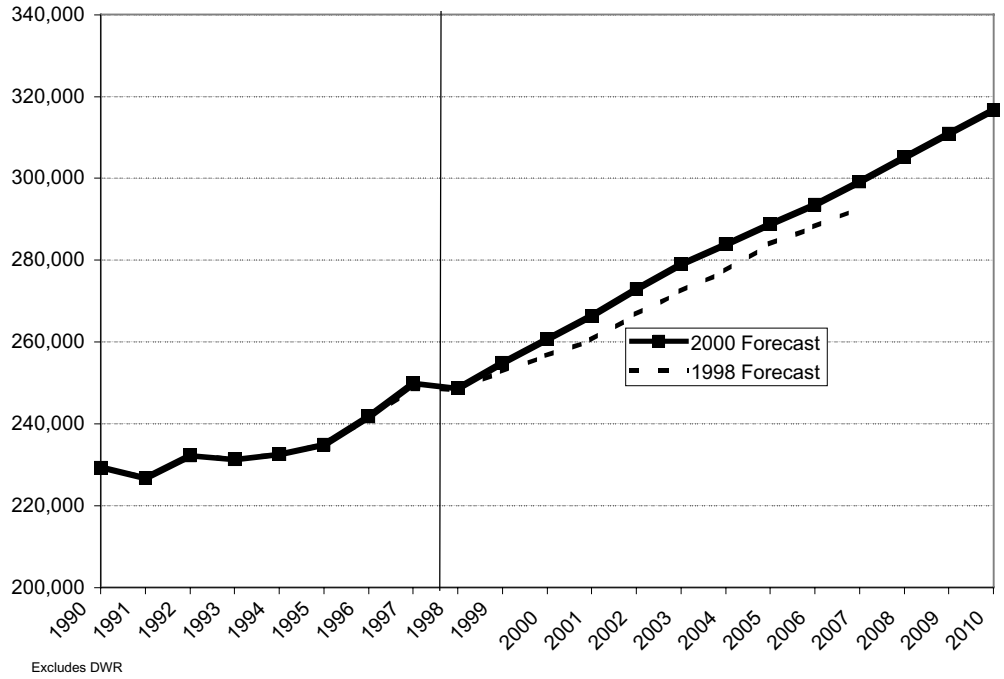
Electricity

For both electricity consumption and peak demand the current statewide forecasts are higher than the forecasts in the 1998 baseline outlook.

Electricity Consumption

On a statewide basis (excluding DWR), the electricity consumption forecast is 1.6 (4,000 GWh) higher than the 1998 forecast in the year 2000 and 2.2 percent (6,300 GWh) higher in the year 2007.

FIGURE III-1
Statewide Electricity Consumption
Comparison of 2000 Forecast and 1998 Forecast
(GWh)



Source: Energy Commission staff

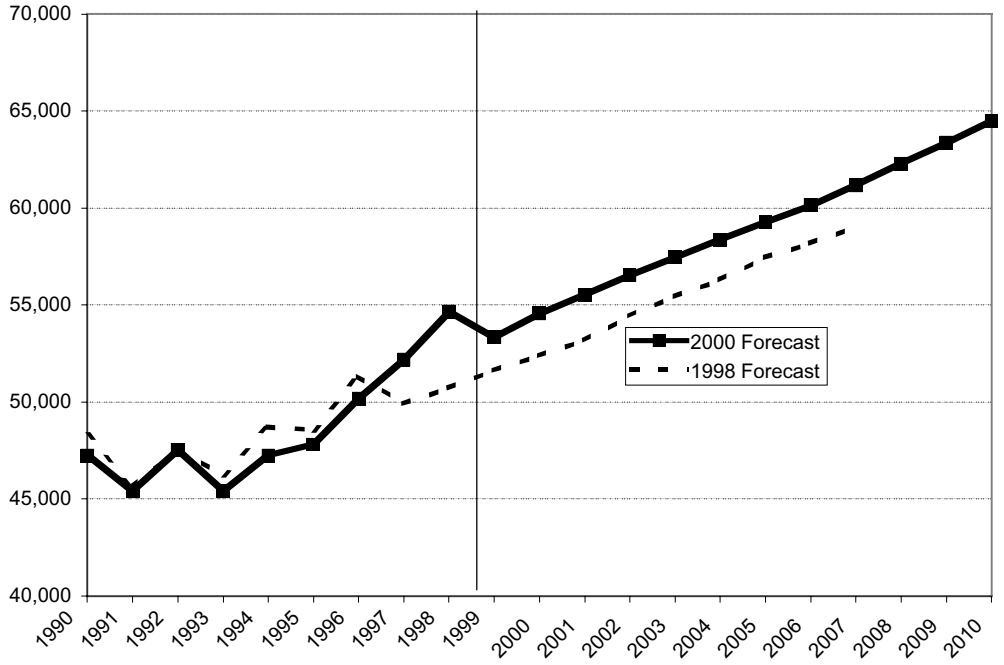
[7] *1998 Baseline Energy Outlook*, August 1998, California Energy Commission, P300-98-102, <www.energy.ca.gov/reports/98_baseline_outlook.html>.

The 2000 forecast of electricity consumption is higher that the 1998 outlook primarily because of a more robust economic forecast underlying the 2000 forecast. The economic forecast underlying the 2000 forecast projects continued strong growth a view shared by many other forecasts for the nation and California with stronger growth than what was projected in the 1998 outlook.

Electricity Peak Demand

The 2000 forecast of peak demand is 5.1 percent (2,640 MW) higher than the 1998 outlook in the year 2000 and 4.5 percent (2,620 MW) higher in the year 2007.

FIGURE III-2
Statewide Peak Demand
Comparison of 2000 Forecast and 1998 Forecast
(MW)



Source: Energy Commission staff

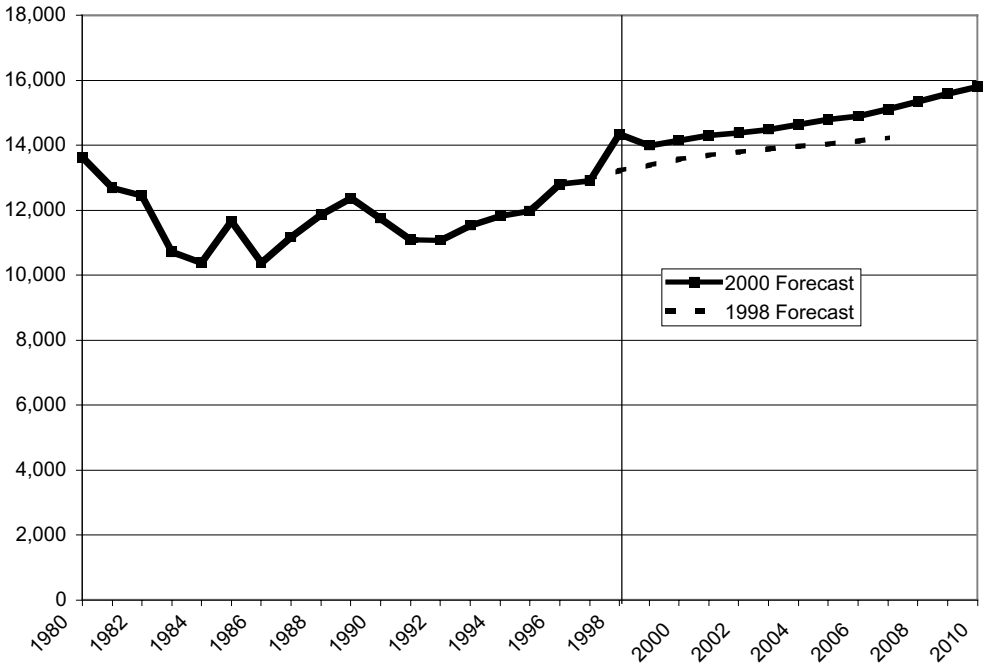
The higher 2000 forecast of peak demand is not only the result of the higher energy forecast; the higher forecast is also caused by the use of improved load shapes resulting from the analysis of recent years of historical system and sectoral data. These revised load shapes led to more peak demand per unit of energy and contributed to the 2000 forecast of peak demand

being 4 to 5.4 percent higher than the earlier forecast compared to only a 1.5 to 2.4 percent difference between energy forecasts.

Natural Gas Consumption

The current natural gas consumption forecast is higher than the 1998 forecast. In 2000 the forecast is 586 million therms (4.3 percent) higher than the 1998 forecast. By 2007 the forecast is 874 million therms (6.1 percent) higher. The same, stronger economic forecast that led to a higher electricity forecast is responsible for the higher natural gas forecast.

FIGURE III-3
Statewide Natural Gas Consumption
Comparison of 2000 Forecast and 1998 Forecast
(Millions of Therms)



Source: Energy Commission staff

Chapter IV: Basic Definitions and Model Documentation

This chapter is intended to be a reference tool for identifying the basic definitions upon which this forecast is based. We provide an overview of important geographic regions of the State and then define the key sectors.

Extent of Energy Consumption Data Disaggregation

In analyzing energy consumption patterns, the utility[8] remains the basic unit of analysis for this forecast. It is the local utility that provides the bulk of energy service components to consumers and collects data from them[9]. Within each utility, residential and commercial energy consumption patterns, which account for approximately two-thirds of all energy use, are influenced by weather within the various climate zones. Therefore, these two sectors are modeled by climate zone and the results aggregated to the utility service/planning area.

Recognizing the continuation of the existing utility service territories in the restructured marketplace, yearly consumption data are reported by eight electric service/planning areas and four natural gas distribution regions (**Table IV-1**). The geographic regions include the traditional areas served by each utility and in some cases extend to include municipalities and irrigation districts that are not served directly by the larger investor-owned utility. For example, the PG&E electric planning area includes the cities of Redding and Santa Clara, the Northern California Power Agency, and the irrigation districts of Modesto and Turlock. The SCE planning area includes the cities of Anaheim, Anza, Asuza, Banning, Colton, Riverside, and Vernon and the Metropolitan and Southern California Water Districts. For the purposes of this report, a planning area denotes a geographic region of an electric investor-owned utility in which there resides municipal utilities and/or irrigation districts. An electric service area denotes a geographic area for which a single utility provides electric distribution services. Natural gas service territories include municipal gas utilities.

---

[8] In the case of the IOUs, we are referring to the utility distribution company (UDC) geographic region.

[9] In December 1999, the Energy Commission adopted the *Report on Generator and Consumer Data Reporting Requirements* (P300-99-007). Included in this report is the Energy Commission s new approach to data collection, shifting the responsibility for filing consumption data from UDCs to the retailers who provide energy to end-use customers.

TABLE IV-1
GEOGRAPHIC CONSUMPTION AREAS

Electricity Planning/Service Areas	Natural Gas Service Territories
Pacific Gas and Electric (PG&E)	Pacific Gas and Electric (PG&E)
Sacramento Municipal Utility District (SMUD)	
Southern California Edison (SCE)	Southern California Gas (SCG)
Los Angeles Department of Water and Power (LADWP)	
Cities of Burbank, Glendale, and Pasadena (BG&P	
San Diego Gas and Electric (SDG&E)	San Diego Gas and Electric (SDG&E)
Other Planning Area (OTHER)	Other Gas Territory (OTHER)
Department of Water Resources (DWR)	

Source: Energy Commission staff

The OTHER planning area accounts for demand centers located in counties adjacent to the California-Oregon border, Mount Shasta, Lake Tahoe, and a portion of the Mojave Desert. Electric utility distribution companies serving these regions include Imperial Irrigation District, Pacific Power and Light, Sierra Pacific Power, and the Surprise Valley Cooperative. Gas utilities in this category include Washington Water and Power in the north and Southwest Gas Corporation in the south.

Customer Sector Definitions

Residential

Residential energy consumption is grouped into three different housing types single family, multi-family, and mobile homes. For each housing type, some combination of electricity and/or natural gas consumption occurs in 24 individual end-uses (**Table IV-2**). In most cases, the end-uses analyzed do not necessarily represent distinct appliance types. Electric space heating, for example, is one end-use category, but includes three types of heating appliances baseboard heaters, central heating systems, and heat pumps. Other end-uses, such as refrigerators and freezers, do characterize individual appliance end-uses.

The top five residential electricity energy end uses account for almost 70 percent of residential consumption. These five end uses are (1) lighting and miscellaneous appliances, (2) refrigeration, (3) clothes drying, (4) cooking, and (5) hot water heating. Although not one of the top five end uses when ranked by annual energy use, air conditioning is the most important end use when ranked by contribution to peak demand.

TABLE IV-2
RESIDENTIAL END-USE AND FUEL TYPE CLASSIFICATIONS

End-Use	Description	Electric	Gas
CENTRAL A/C	Whole house air conditioning systems	X	X
ROOM A/C	Window air conditioners	X	
EVAP A/C	Evaporative coolers	X	
SPACE HEAT	Heat pumps, baseboard heaters and central heating systems	X	X
FURNACE FAN	Central heating and cooling furnace fans	X	
HOT WATER	Water heating for dishwashers	X	X
HOT WATER	Water heating for clothes washer	X	X
WATER HEATER	Basic water heating for all other uses	X	X
REFRIGERATION	Refrigerators	X	
FREEZER	Stand alone freezers	X	
COLOR TV	Major household appliance	X	
COOKING	Stove tops and ovens excludes microwaves	X	X
DISHWASHER	Dishwasher motor only	X	
CLOTHES DRYER	Clothes dryer	X	X
CLOTHES WASHER	Washing machine motor	X	
SOLAR BACKUP	Backup for solar water heating systems	X	X
SOLAR PUMPS	Pumps on solar water heating systems	X	
WATER BED	Heating element for water beds	X	
MISCELLANEOUS	Miscellaneous uses including lighting and small appliances	X	X
POOL PUMP	Swimming pool water pump	X	
POOL HEATER	Water heating for swimming pools	X	X
POOL BACKUP	Backup for pool's solar water heating system, including pump	X	X
TUB PUMP	Hot tub water pump	X	
TUB WATER HEAT	Water heating for hot tubs	X	X

Source: Energy Commission staff

Commercial

Commercial energy consumption in this report is grouped into twelve building types. Each building type aggregates energy consumption resulting from economic activity surrounding the selling and distribution of final goods and services. **Table IV-3** displays a breakdown of the 12 building types by Standard Industrial Classification (SIC) code. For each building type, energy consumption occurs within ten different end-uses. **Table IV-4** displays the end-uses and their corresponding fuel types.

TABLE IV-3
COMMERCIAL BUILDING CLASSIFICATIONS

Building Type	SIC Codes Included
Office-Small < 30,000 Square Feet	074, 076, 078, 60-61, 62-67, 73
Restaurants	58
Retail Stores	52, 53, 55-57 (554), 59 (592)*
Food/Liquor Stores	54, 592
Warehouses	42 (4222), 50, 51 (514)
Refrigerated Warehouses	4222, 514
Schools	821, 835
Colleges/Trades	822, 824, 829
Health Care	805-809, 836
Hotel/Motel	70 (703)
Miscellaneous	554, 72, 75, 78, 79, 823, 84, 92
Office-Large >= 30,000 Square Feet	801-804, 81, 91, 93-96, 972

*Excluded industry subgroups in parentheses.
Source: Energy Commission staff

TABLE IV-4
COMMERCIAL END-USE AND FUEL TYPE CLASSIFICATIONS

End-Use	Description	Electricity	Natural Gas
Space Heat	Combinations of packaged and system space heat	X	X
Space Cooling	Combinations of packaged and system cooling	X	X
Ventilation	Ventilation systems	X	
Water heating	Water heaters and system boilers	X	X
Cooking	Major cooking appliances	X	X
Refrigeration	Major refrigeration systems and stand alone units	X	X
Indoor Lighting	Lighting systems, does not include desktop lamps	X	
Outdoor Lighting	Lighting systems	X	
Office Equipment	Faxes, computers, copiers, etc.	X	
Misc. Equipment	Miscellaneous plug load, including small refrigerators, desktop lamps, and other non-system energy using equipment.	X	X

Source: Energy Commission staff

Industrial

Industrial energy consumption is grouped into three categories: 1) process, 2) resource extraction (i.e., mining), and 3) assembly. Process industries refer to companies that use multiple energy sources to transform raw materials into commercial products. Energy is the

critical component needed to power the motors, engines, boilers, dryers, compressors, refrigeration systems, and other devices used to produce food and manufactured durable goods as well as harvest, extract, and recycle natural resources. **Table IV-5** lists a variety of different areas where energy is used in the process industry.

TABLE IV-5
SELECTED ENERGY USES IN PROCESS INDUSTRIES

End-Uses	
Compressed air for equipment operation	Coating
Cooking	Printing
Melting and refining	Drying
Pumping of fluids as raw materials	Machining
Transporting products or components	Mining
Lighting	Heat Treatment
Production of gases	Heating
Ventilation and extraction	Packaging
Cooling	Cutting
Chemical reactions	Hydraulic pumping
Radiation	Filtration
Electrolysis	Pressure systems
Source: Energy Commission Energy Efficiency Division, ***Process Energy Sector Action Plan***, May 1997.	

Source: Energy Commission staff

While resource extraction industries are classified as process-related energy uses, the staff s assessment tools separate them from the rest of the process industry group. Resource extraction industries are those companies that extract fossil fuels (petroleum and natural gas), precious metals (iron, gold), and nonmetallic minerals (stone, sand, gravel, borate). The categories were separated from other process industries (petroleum refining, chemicals, pulp and paper, etc.) because they have different patterns of energy consumption and because mining is one of the State s largest consumers of energy.

Assembly industries are defined in this report to include companies whose primary activity is to shape unfinished but not raw materials and assemble components to produce final goods in a non-continuous process production environment. These activities are much less energy intensive than activities for process and mining industries. Comparing **Table IV-6** to **Table IV-5**, it is clear there are far fewer end-uses of energy in the assembly industry.

Table IV-7 lists the various industries included in each industrial category by SIC code[10]. In most cases, consumption estimates are reported by two-digit SIC code. In industries where either considerable growth in energy consumption is foreseen or a major difference in consumption patterns exists among industries in the same two-digit SIC code, a three-digit SIC level is utilized. For example, SIC 35, industrial machinery and equipment, was disaggregated to allow specific evaluation of the energy consumption in the computer industry.

[10] The different growth patterns within the industrial sector and the changing mix of industries highlights the importance of SIC-energy data that permits analysis of these trends.

TABLE IV-6
EXAMPLES OF ENERGY USE IN ASSEMBLY INDUSTRIES

End-Uses	
Compressed air for equipment operation	Machining
Cooking	Packaging
Transporting products or components	Cutting
Lighting	
Cooling	
Heating	

Source: Energy Commission Energy Efficiency Division.

TABLE IV-7
INDUSTRIAL SECTOR DEFINITIONS BY SIC CODE

SIC	**Process Industries**
15	Construction
203	Canned, Frozen, Preserved Fruits, Vegetables, and Food Specialties
206	Sugar and Confectionery Products
24	Lumber and Wood Products
261	Pulp Mills
262-3	Paper and Paperboard Mills
29	Petroleum Refining and Related Industries
321-3	Glass and Glassware
324	Cement
	Resource Extraction Industries
10	Metal Mining
13	Oil and Gas Extraction
14	Mining and Quarrying of Non-Metallic Minerals
	Assembly Industries
20x	Food and Kindred Products (Except 203 and 206)
22	Textile Mill Products
23	Apparel and Other Textile Products
25	Furniture and Fixtures
26x	Paper and Allied Products (Except Pulp, Paper, and Paperboard Mills 261-263)
27	Printing and Publishing
28	Chemicals and Allied Products
308	Plastics Products
30x	Rubber Products
31	Leather and Leather Products
32x	Stone and Clay Products
33	Primary Metal Industries
34	Fabricated Metal Products
357	Computers and Office Equipment
35x	Industrial Machinery and Equipment (Except 357)
366	Communications Equipment
367	Electronic Components and Accessories
36x	Electronic and Other Electric Equipment (Except 366, 367)
37	Transportation Equipment
38	Instruments and Related Products
39	Miscellaneous Manufacturing

Source: Energy Commission staff

Model Documentation

The forecasts in this forecast were prepared using end-use forecasting models developed at the Energy Commission, with the exception of the industrial sector, for which the staff used the INFORM model originally developed by the Electric Power Research Institute (EPRI). The staff also used EPRI's Hourly Electric Load Model (HELM) to determine peak electricity demand. Each model develops a forecast using a complex series of calculations that simultaneously consider economic factors, population, weather characteristics, changes in energy utilization, regulatory conditions, and recorded consumption. Detailed descriptions of the models used by the staff, with the exception of the industrial sector, are contained ***California Energy Demand: 1995-2015, Volume II Electricity Demand Forecasting Model***s, July 1995, Publication Number P300-95-005. For a description of the industrial sector forecast methodologies, refer to EPRI s INFORM documentation.

Documentation of the methods used to estimate energy efficiency public goods charge program impacts can be found in the appendix of the Commission s December 1999 *A Proposal for a New Millennium: The Energy Efficiency Public Goods Charge Report.*[11]

[11] http://www.energy.ca.gov/reports/1999-12_400-99-020.html

Appendix A: Electricity Consumption By Sector

This appendix provides recorded and forecast electricity consumption by sector and by utility.

Appendix B: Net Energy For Load

This appendix provides recorded and forecast net energy for load by utility.

Appendix C: Peak Demand By Sector

This appendix provides recorded and forecast peak demand by sector and by utility.

Appendix D: System Peak Demand

This appendix provides recorded and forecast system peak demand by utility. In addition a table showing the detail underlying the ISO congestion zone forecast is shown.

Appendix E: Natural Gas Consumption

This appendix provides recorded and forecast natural gas consumption by sector and by utility.

Appendix F: Energy Efficiency Impacts

This appendix provides recorded and forecast energy efficiency impacts.

TABLE A-1
Staff's Outlook for the PG&E Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	21,424	17,793	17,295	5,743	3,942	0	66,197
1981	21,632	18,312	17,469	6,318	3,921	0	67,653
1982	21,116	18,328	17,252	5,237	4,109	0	66,043
1983	21,858	19,302	18,267	4,879	4,191	0	68,497
1984	22,883	20,373	19,103	6,319	4,664	0	73,341
1985	23,292	21,221	19,738	6,319	5,047	0	75,617
1986	23,180	21,897	19,501	5,301	4,515	0	74,394
1987	24,278	23,429	20,153	6,048	5,054	0	78,962
1988	25,041	24,674	21,021	6,398	5,007	0	82,141
1989	25,389	26,019	21,505	6,482	5,134	0	84,529
1990	25,844	27,304	21,900	6,518	5,240	0	86,806
1991	26,308	27,566	21,787	5,893	5,376	0	86,929
1992	26,412	28,759	21,570	6,083	5,502	0	88,326
1993	26,781	29,176	21,816	5,855	5,612	0	89,239
1994	27,013	29,203	22,083	5,778	5,506	0	89,582
1995	27,080	29,942	22,736	5,385	5,619	0	90,763
1996	28,120	31,046	22,828	5,728	5,708	0	93,430
1997	28,599	32,770	24,079	5,980	5,587	0	97,015
1998	29,596	32,307	23,068	5,105	5,524	0	95,601
1999	29,871	33,255	23,552	6,156	5,542	0	98,376
2000	30,454	34,056	24,126	6,277	5,587	0	100,500
2001	31,046	34,944	24,600	6,407	5,656	0	102,654
2002	31,658	36,139	25,123	6,541	5,713	0	105,175
2003	32,273	37,020	25,671	6,672	5,790	36	107,461
2004	32,842	37,519	26,120	6,795	5,868	74	109,219
2005	33,457	37,995	26,584	6,906	5,943	108	110,994
2006	34,110	38,420	26,971	7,005	6,032	139	112,678
2007	34,761	39,054	27,413	7,094	6,128	166	114,616
2008	35,497	39,969	27,879	7,173	6,202	188	116,907
2009	36,249	40,625	28,343	7,247	6,278	207	118,950
2010	37,047	41,319	28,770	7,317	6,361	227	121,041
Annual Growth Rates (%)							
1980-1990	1.9	4.4	2.4	1.3	2.9		2.7
1990-1998	1.7	2.1	0.7	-3.0	0.7		1.2
1998-2010	1.9	2.1	1.9	3.0	1.2		2.0

Historic Data through 1998

TABLE A-2
Staff's Outlook for the SMUD Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	2,587	2,012	298	112	343	0	5,352
1981	2,794	2,078	310	122	390	0	5,694
1982	2,781	2,113	298	108	381	0	5,681
1983	2,910	2,142	343	94	466	0	5,954
1984	3,086	2,269	410	113	482	0	6,360
1985	3,193	2,500	529	115	545	0	6,882
1986	3,107	2,767	519	102	519	0	7,015
1987	3,229	3,103	428	115	545	0	7,420
1988	3,326	3,123	542	106	581	0	7,678
1989	3,359	3,194	655	98	622	0	7,927
1990	3,611	3,266	710	108	664	0	8,358
1991	3,603	3,173	761	120	693	0	8,350
1992	3,626	3,297	760	131	683	0	8,497
1993	3,636	3,300	749	134	616	0	8,435
1994	3,662	3,284	759	146	567	0	8,418
1995	3,604	3,344	753	140	617	0	8,458
1996	3,808	3,410	813	151	624	0	8,805
1997	3,839	3,541	813	164	649	0	9,006
1998	3,959	3,540	858	125	641	0	9,123
1999	3,992	3,674	877	154	644	0	9,341
2000	4,073	3,772	909	157	647	0	9,557
2001	4,152	3,873	939	160	652	0	9,776
2002	4,233	4,021	971	164	661	0	10,050
2003	4,314	4,094	1,006	167	673	18	10,272
2004	4,391	4,137	1,038	171	687	37	10,460
2005	4,475	4,177	1,069	174	698	54	10,647
2006	4,563	4,211	1,097	178	712	70	10,829
2007	4,649	4,280	1,123	181	726	83	11,042
2008	4,744	4,346	1,148	184	738	94	11,255
2009	4,842	4,413	1,174	188	751	103	11,471
2010	4,945	4,480	1,199	191	764	113	11,692
Annual Growth Rates (%)							
1980-1990	3.4	5.0	9.1	-0.4	6.8		4.6
1990-1998	1.2	1.0	2.4	1.8	-0.4		1.1
1998-2010	1.9	2.0	2.8	3.6	1.5		2.1

Historic Data through 1998

TABLE A-3
Staff's Outlook for the SCE Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	16,965	17,364	18,899	3,500	2,896	0	59,624
1981	17,710	17,956	19,255	3,753	2,921	0	61,594
1982	17,389	17,857	17,736	3,231	3,288	0	59,501
1983	18,205	18,408	18,598	3,423	3,372	0	62,006
1984	19,395	19,778	19,306	4,616	3,514	0	66,608
1985	19,751	20,132	20,016	4,667	3,637	0	68,203
1986	19,877	21,284	19,885	4,623	3,826	0	69,496
1987	20,894	22,379	20,895	4,816	4,016	0	72,999
1988	22,124	23,531	22,035	4,868	4,139	0	76,698
1989	22,620	24,636	22,400	4,359	4,403	0	78,417
1990	23,684	25,895	22,321	5,240	4,533	0	81,673
1991	23,039	25,758	21,690	5,231	4,505	0	80,223
1992	24,210	27,056	21,573	4,443	4,759	0	82,041
1993	23,362	26,959	21,255	4,871	4,687	0	81,133
1994	24,190	26,652	21,179	5,355	5,424	0	82,800
1995	24,097	27,120	21,484	4,482	5,671	0	82,855
1996	24,738	28,498	22,105	5,048	5,340	0	85,728
1997	25,270	29,778	22,817	5,231	5,287	0	88,382
1998	25,749	29,800	22,518	5,192	5,175	0	88,434
1999	26,177	30,374	23,378	5,214	5,176	0	90,320
2000	26,680	31,161	24,118	5,289	5,237	0	92,484
2001	27,141	31,944	24,850	5,361	5,264	0	94,561
2002	27,616	32,945	25,438	5,439	5,319	0	96,757
2003	28,113	33,672	26,082	5,509	5,387	199	98,964
2004	28,566	34,166	26,637	5,581	5,459	414	100,822
2005	29,047	34,654	27,273	5,662	5,517	607	102,759
2006	29,592	35,044	27,789	5,738	5,592	780	104,535
2007	30,147	35,663	28,384	5,830	5,676	932	106,633
2008	30,783	36,300	29,007	5,917	5,729	1,050	108,786
2009	31,432	36,940	29,618	6,012	5,787	1,159	110,947
2010	32,134	37,560	30,205	6,102	5,866	1,270	113,137
Annual Growth Rates (%)							
1980-1990	3.4	4.1	1.7	4.1	4.6		3.2
1990-1998	1.1	1.8	0.1	-0.1	1.7		1.0
1998-2010	1.9	1.9	2.5	1.4	1.0		2.1

Historic Data through 1998

TABLE A-4
Staff's Outlook for the LADWP Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	5,357	7,023	4,016	113	1,161	0	17,669
1981	5,587	7,346	4,071	137	1,198	0	18,340
1982	5,529	7,311	4,017	125	1,202	0	18,184
1983	5,794	7,433	4,112	112	1,270	0	18,722
1984	6,157	7,969	4,239	156	1,256	0	19,777
1985	6,092	8,147	4,119	145	1,256	0	19,760
1986	6,033	8,556	4,097	137	1,271	0	20,094
1987	6,222	8,945	4,021	157	1,427	0	20,772
1988	6,482	9,175	4,144	202	1,437	0	21,439
1989	6,601	9,218	4,074	180	1,482	0	21,554
1990	6,835	9,634	3,882	156	1,464	0	21,971
1991	6,620	9,441	3,941	133	1,499	0	21,634
1992	7,000	9,692	3,733	155	1,473	0	22,053
1993	6,726	10,410	3,487	130	1,644	0	22,396
1994	6,723	9,899	3,395	150	1,639	0	21,805
1995	6,788	10,362	3,534	140	1,702	0	22,526
1996	6,917	10,227	3,757	175	1,682	0	22,758
1997	7,106	10,669	3,415	179	1,797	0	23,166
1998	7,183	10,510	3,415	173	1,723	0	23,004
1999	7,139	10,906	3,549	167	1,739	0	23,500
2000	7,170	11,098	3,632	168	1,748	0	23,816
2001	7,194	11,290	3,690	171	1,755	0	24,100
2002	7,223	11,613	3,743	175	1,758	0	24,512
2003	7,251	11,720	3,798	178	1,769	77	24,792
2004	7,274	11,760	3,835	182	1,775	160	24,985
2005	7,318	11,789	3,884	185	1,786	234	25,197
2006	7,375	11,811	3,929	189	1,807	301	25,412
2007	7,418	11,923	3,995	192	1,824	359	25,712
2008	7,475	12,041	4,072	195	1,842	405	26,030
2009	7,534	12,159	4,148	199	1,860	447	26,347
2010	7,601	12,285	4,222	202	1,884	490	26,684
Annual Growth Rates (%)							
1980-1990	2.5	3.2	-0.3	3.2	2.4		2.2
1990-1998	0.6	1.1	-1.6	1.3	2.1		0.6
1998-2010	0.5	1.3	1.8	1.3	0.7		1.2

Historic Data through 1998

TABLE A-5
Staff's Outlook for the SDG&E Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	3,884	3,719	887	195	1,045	0	9,730
1981	3,852	3,778	953	229	1,063	0	9,875
1982	3,862	3,754	926	197	1,084	0	9,823
1983	3,912	3,919	942	197	1,104	0	10,073
1984	4,058	4,390	992	241	1,078	0	10,760
1985	4,252	4,616	1,009	215	1,088	0	11,180
1986	4,325	4,894	1,206	226	1,019	0	11,671
1987	4,641	5,121	1,308	215	1,083	0	12,367
1988	4,930	5,319	1,384	240	1,364	0	13,237
1989	5,146	5,659	1,484	254	1,386	0	13,929
1990	5,423	6,049	1,657	240	1,428	0	14,798
1991	5,335	5,939	1,646	207	1,515	0	14,642
1992	5,611	6,478	1,683	213	1,554	0	15,540
1993	5,551	6,493	1,601	212	1,594	0	15,451
1994	5,736	6,611	1,575	233	1,635	0	15,791
1995	5,731	6,747	1,589	229	1,627	0	15,923
1996	5,937	7,084	1,761	258	1,560	0	16,600
1997	6,125	7,451	1,636	283	1,636	0	17,132
1998	6,321	7,655	1,649	255	1,750	0	17,630
1999	6,351	7,990	1,676	260	1,775	0	18,052
2000	6,504	8,260	1,730	268	1,779	0	18,541
2001	6,661	8,524	1,792	277	1,858	0	19,111
2002	6,819	8,817	1,844	287	1,892	0	19,658
2003	6,957	9,044	1,905	296	1,916	18	20,136
2004	7,081	9,195	1,952	306	1,967	37	20,539
2005	7,214	9,333	2,008	316	2,003	54	20,928
2006	7,360	9,443	2,056	325	2,035	70	21,289
2007	7,500	9,640	2,103	333	2,077	83	21,736
2008	7,650	9,836	2,152	340	2,104	94	22,175
2009	7,796	10,037	2,199	346	2,121	103	22,603
2010	7,939	10,229	2,247	352	2,142	113	23,022
Annual Growth Rates (%)							
1980-1990	3.4	5.0	6.4	2.1	3.2		4.3
1990-1998	1.9	3.0	-0.1	0.8	2.6		2.2
1998-2010	1.9	2.4	2.6	2.7	1.7		2.2

Historic Data through 1998

TABLE A-6
Staff's Outlook for the BGP Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	616	1,066	595	12	85	0	2,374
1981	641	1,128	589	9	85	0	2,452
1982	647	1,131	525	9	87	0	2,399
1983	681	1,116	519	21	96	0	2,433
1984	730	1,223	560	32	98	0	2,644
1985	715	1,281	570	32	101	0	2,699
1986	714	1,281	568	30	102	0	2,695
1987	735	1,292	584	34	110	0	2,754
1988	783	1,354	587	36	101	0	2,861
1989	785	1,341	554	37	96	0	2,813
1990	858	1,435	526	33	99	0	2,951
1991	797	1,415	421	29	98	0	2,759
1992	842	1,558	401	28	102	0	2,931
1993	825	1,685	350	28	109	0	2,996
1994	839	1,694	325	30	111	0	2,999
1995	862	1,789	285	33	117	0	3,084
1996	875	1,881	267	29	100	0	3,152
1997	889	1,926	264	28	128	0	3,236
1998	896	1,986	268	27	121	0	3,298
1999	912	2,006	273	30	116	0	3,338
2000	920	2,049	279	30	118	0	3,395
2001	927	2,084	286	30	119	0	3,445
2002	934	2,159	292	30	120	0	3,535
2003	942	2,181	298	30	122	9	3,580
2004	949	2,191	304	30	123	18	3,614
2005	959	2,200	310	30	125	26	3,650
2006	970	2,207	316	30	127	33	3,683
2007	980	2,227	322	30	129	40	3,727
2008	991	2,246	328	30	131	45	3,770
2009	1,003	2,266	334	30	132	50	3,815
2010	1,016	2,285	340	30	135	54	3,860
Annual Growth Rates (%)							
1980-1990	3.4	3.0	-1.2	10.6	1.5		2.2
1990-1998	0.5	4.1	-8.1	-2.4	2.4		1.4
1998-2010	1.1	1.2	2.0	0.7	0.9		1.3

Historic Data through 1998

TABLE A-7
Staff's Outlook for the Other Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	1,253	785	253	273	114	0	2,677
1981	1,282	836	237	297	129	0	2,781
1982	1,253	831	175	270	130	0	2,660
1983	1,221	794	168	276	135	0	2,595
1984	1,257	820	208	296	141	0	2,722
1985	1,235	843	199	333	160	0	2,770
1986	1,218	869	214	289	169	0	2,758
1987	1,272	898	185	307	211	0	2,872
1988	1,349	943	207	318	238	0	3,055
1989	1,418	968	214	305	299	0	3,205
1990	1,414	979	199	383	334	0	3,310
1991	1,443	1,005	193	332	350	0	3,323
1992	1,526	1,089	207	342	349	0	3,513
1993	1,545	1,131	222	317	388	0	3,602
1994	1,618	1,204	209	320	408	0	3,758
1995	1,606	1,224	213	349	427	0	3,819
1996	1,772	1,220	229	362	401	0	3,983
1997	1,721	1,267	228	364	392	0	3,972
1998	1,684	1,294	221	363	336	0	3,898
1999	1,731	1,332	223	370	343	0	3,998
2000	1,763	1,376	228	375	346	0	4,088
2001	1,791	1,414	234	381	354	0	4,174
2002	1,819	1,450	242	388	364	0	4,262
2003	1,847	1,488	249	394	374	0	4,352
2004	1,875	1,522	254	400	385	0	4,437
2005	1,904	1,579	260	406	392	0	4,540
2006	1,932	1,612	263	411	402	0	4,619
2007	1,960	1,649	263	416	413	0	4,701
2008	1,988	1,693	264	421	419	0	4,785
2009	2,016	1,730	267	426	424	0	4,863
2010	2,044	1,768	268	431	431	0	4,942
Annual Growth Rates (%)							
1980-1990	1.2	2.2	-2.3	3.5	11.4		2.1
1990-1998	2.2	3.5	1.3	-0.7	0.1		2.1
1998-2010	1.6	2.6	1.6	1.4	2.1		2.0

Historic Data through 1998

TABLE A-8
Staff's Outlook for the DWR Area
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	0	0	0	3,354	0	0	3,354
1981	0	0	0	5,264	0	0	5,264
1982	0	0	0	5,192	0	0	5,192
1983	0	0	0	2,497	0	0	2,497
1984	0	0	0	3,349	0	0	3,349
1985	0	0	0	5,410	0	0	5,410
1986	0	0	0	5,031	0	0	5,031
1987	0	0	0	4,734	0	0	4,734
1988	0	0	0	5,928	0	0	5,928
1989	0	0	0	7,413	0	0	7,413
1990	0	0	0	8,171	0	0	8,171
1991	0	0	0	4,400	0	0	4,400
1992	0	0	0	4,088	0	0	4,088
1993	0	0	0	4,372	0	0	4,372
1994	0	0	0	4,946	0	0	4,946
1995	0	0	0	3,562	0	0	3,562
1996	0	0	0	5,146	0	0	5,146
1997	0	0	0	5,504	0	0	5,504
1998	0	0	0	3,421	0	0	3,421
1999	0	0	0	5,490	0	0	5,490
2000	0	0	0	5,490	0	0	5,490
2001	0	0	0	5,490	0	0	5,490
2002	0	0	0	5,490	0	0	5,490
2003	0	0	0	5,490	0	0	5,490
2004	0	0	0	5,490	0	0	5,490
2005	0	0	0	5,490	0	0	5,490
2006	0	0	0	5,490	0	0	5,490
2007	0	0	0	5,490	0	0	5,490
2008	0	0	0	5,490	0	0	5,490
2009	0	0	0	5,490	0	0	5,490
2010	0	0	0	5,490	0	0	5,490
Annual Growth Rates (%)							
1980-1990				9.3			9.3
1990-1998				-10.3			-10.3
1998-2010				4.0			4.0

Historic Data through 1998

TABLE A-9
Staff's Outlook for California
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total Consumption
1980	52,086	49,762	42,243	13,301	9,586	0	166,979
1981	53,499	51,433	42,884	16,130	9,708	0	173,655
1982	52,578	51,326	40,930	14,369	10,280	0	169,484
1983	54,580	53,114	42,950	11,499	10,635	0	172,779
1984	57,566	56,823	44,817	15,122	11,233	0	185,562
1985	58,531	58,739	46,181	17,236	11,835	0	192,521
1986	58,454	61,548	45,991	15,738	11,422	0	193,154
1987	61,269	65,167	47,573	16,425	12,445	0	202,880
1988	64,035	68,120	49,920	18,096	12,867	0	213,038
1989	65,319	71,035	50,886	19,127	13,422	0	219,788
1990	67,669	74,562	51,195	20,849	13,763	0	228,038
1991	67,145	74,296	50,439	16,345	14,036	0	222,260
1992	69,227	77,929	49,926	15,483	14,423	0	226,988
1993	68,426	79,152	49,479	15,918	14,649	0	227,624
1994	69,781	78,546	49,524	16,957	15,290	0	230,097
1995	69,767	80,528	50,594	14,321	15,780	0	230,990
1996	72,166	83,366	51,758	16,898	15,415	0	239,603
1997	73,549	87,401	53,253	17,733	15,477	0	247,412
1998	75,388	87,093	51,996	14,661	15,270	0	244,409
1999	76,174	89,538	53,527	17,840	15,335	0	252,414
2000	77,564	91,771	55,020	18,054	15,462	0	257,871
2001	78,911	94,073	56,391	18,279	15,658	0	263,312
2002	80,303	97,143	57,653	18,513	15,827	0	269,439
2003	81,697	99,218	59,010	18,737	16,030	356	275,047
2004	82,978	100,490	60,140	18,954	16,263	739	279,565
2005	84,374	101,727	61,388	19,169	16,464	1,083	284,204
2006	85,902	102,749	62,421	19,365	16,706	1,393	288,536
2007	87,416	104,436	63,603	19,565	16,973	1,664	293,657
2008	89,128	106,430	64,850	19,751	17,164	1,876	299,198
2009	90,873	108,169	66,083	19,937	17,354	2,070	304,485
2010	92,726	109,926	67,250	20,116	17,582	2,268	309,868
Annual Growth Rates (%)							
1980-1990	2.7	4.1	1.9	4.6	3.7		3.2
1990-1998	1.4	2.0	0.2	-4.3	1.3		0.9
1998-2004	1.6	2.4	2.5	4.4	1.1		2.3
1998-2010	1.7	2.0	2.2	2.7	1.2		2.0

Historic Data through 1998

TABLE B-1
Staff's Outlook for the PG&E Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	66,197	6,294	72,492	631	71,861
1981	67,653	6,433	74,087	638	73,449
1982	66,043	6,270	72,313	728	71,585
1983	68,497	6,485	74,982	948	74,034
1984	73,341	6,957	80,298	874	79,424
1985	75,617	7,161	82,778	1,024	81,754
1986	74,394	6,980	81,374	1,686	79,688
1987	78,962	7,317	86,279	2,742	83,537
1988	82,141	7,559	89,700	3,402	86,298
1989	84,529	7,746	92,275	3,843	88,432
1990	86,806	7,950	94,757	3,992	90,765
1991	86,929	7,947	94,877	4,145	90,732
1992	88,326	8,077	96,403	4,188	92,215
1993	89,239	8,067	97,307	5,203	92,104
1994	89,582	8,072	97,654	5,498	92,156
1995	90,763	8,185	98,948	5,498	93,450
1996	93,430	8,371	101,802	6,228	95,574
1997	97,015	8,728	105,742	6,102	99,640
1998	95,601	8,584	104,185	6,185	98,000
1999	98,376	8,845	107,221	6,240	100,981
2000	100,500	9,046	109,545	6,275	103,270
2001	102,654	9,250	111,904	6,302	105,602
2002	105,175	9,490	114,665	6,316	108,349
2003	107,461	9,710	117,171	6,316	110,855
2004	109,219	9,879	119,097	6,316	112,781
2005	110,994	10,049	121,043	6,316	114,727
2006	112,678	10,211	122,889	6,316	116,573
2007	114,616	10,397	125,013	6,316	118,697
2008	116,907	10,617	127,524	6,316	121,208
2009	118,950	10,813	129,762	6,316	123,446
2010	121,041	11,014	132,055	6,316	125,739
Annual Growth Rates (%)					
1980-1990	2.7		2.7		2.4
1990-1998	1.2		1.2		1.0
1998-2010	2.0		2.0		2.1

Historic Data through 1998

TABLE B-2
Staff's Outlook for the SMUD Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	5,352	343	5,695	0	5,695
1981	5,694	364	6,059	0	6,059
1982	5,681	364	6,045	0	6,045
1983	5,954	381	6,335	0	6,335
1984	6,360	407	6,767	0	6,767
1985	6,882	440	7,322	0	7,322
1986	7,015	449	7,464	0	7,464
1987	7,420	475	7,895	0	7,895
1988	7,678	491	8,170	0	8,170
1989	7,927	507	8,435	0	8,435
1990	8,358	535	8,893	0	8,893
1991	8,350	534	8,885	0	8,885
1992	8,497	544	9,041	0	9,041
1993	8,435	540	8,974	0	8,974
1994	8,418	539	8,957	0	8,957
1995	8,458	541	8,999	0	8,999
1996	8,805	564	9,369	0	9,369
1997	9,006	576	9,583	0	9,583
1998	9,123	584	9,707	0	9,707
1999	9,341	598	9,939	0	9,939
2000	9,557	612	10,169	0	10,169
2001	9,776	626	10,402	0	10,402
2002	10,050	643	10,693	0	10,693
2003	10,272	657	10,929	0	10,929
2004	10,460	669	11,129	0	11,129
2005	10,647	681	11,328	0	11,328
2006	10,829	693	11,522	0	11,522
2007	11,042	707	11,748	0	11,748
2008	11,255	720	11,975	0	11,975
2009	11,471	734	12,205	0	12,205
2010	11,692	748	12,440	0	12,440
Annual Growth Rates (%)					
1980-1990	4.6		4.6		4.6
1990-1998	1.1		1.1		1.1
1998-2010	2.1		2.1		2.1

Historic Data through 1998

TABLE B-3
Staff's Outlook for the SCE Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	59,624	4,035	63,659	289	63,370
1981	61,594	4,168	65,763	296	65,467
1982	59,501	4,013	63,514	492	63,022
1983	62,006	4,154	66,161	914	65,247
1984	66,608	4,454	71,063	1,103	69,960
1985	68,203	4,550	72,753	1,286	71,467
1986	69,496	4,629	74,124	1,428	72,696
1987	72,999	4,842	77,841	1,790	76,051
1988	76,698	5,010	81,709	3,019	78,690
1989	78,417	5,115	83,532	3,199	80,333
1990	81,673	5,329	87,002	3,308	83,694
1991	80,223	5,226	85,449	3,363	82,086
1992	82,041	5,347	87,388	3,408	83,980
1993	81,133	5,266	86,399	3,689	82,710
1994	82,800	5,377	88,176	3,730	84,446
1995	82,855	5,380	88,235	3,730	84,505
1996	85,728	5,576	91,304	3,730	87,574
1997	88,382	5,751	94,134	3,805	90,329
1998	88,434	5,750	94,184	3,881	90,303
1999	90,320	5,873	96,193	3,959	92,234
2000	92,484	6,014	98,498	4,038	94,460
2001	94,561	6,150	100,711	4,119	96,592
2002	96,757	6,294	103,050	4,201	98,849
2003	98,964	6,444	105,408	4,201	101,207
2004	100,822	6,570	107,392	4,201	103,191
2005	102,759	6,702	109,460	4,201	105,259
2006	104,535	6,823	111,358	4,201	107,157
2007	106,633	6,965	113,598	4,201	109,397
2008	108,786	7,112	115,898	4,201	111,697
2009	110,947	7,259	118,206	4,201	114,005
2010	113,137	7,408	120,545	4,201	116,344
Annual Growth Rates (%)					
1980-1990	3.2		3.2		2.8
1990-1998	1.0		1.0		1.0
1998-2010	2.1		2.1		2.1

Historic Data through 1998

TABLE B-4
Staff's Outlook for the LADWP Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	17,669	2,385	20,055	0	20,055
1981	18,340	2,476	20,816	0	20,816
1982	18,184	2,455	20,639	0	20,639
1983	18,722	2,496	21,219	230	20,989
1984	19,777	2,624	22,401	339	22,062
1985	19,760	2,625	22,385	317	22,068
1986	20,094	2,656	22,750	423	22,327
1987	20,772	2,738	23,510	488	23,022
1988	21,439	2,797	24,236	720	23,516
1989	21,554	2,787	24,341	913	23,428
1990	21,971	2,829	24,799	1,018	23,781
1991	21,634	2,762	24,395	1,178	23,217
1992	22,053	2,828	24,880	1,107	23,773
1993	22,396	2,870	25,266	1,137	24,129
1994	21,805	2,742	24,547	1,497	23,050
1995	22,526	2,827	25,352	1,587	23,765
1996	22,758	2,866	25,623	1,530	24,093
1997	23,166	2,917	26,082	1,561	24,521
1998	23,004	2,891	25,894	1,592	24,302
1999	23,500	2,953	26,453	1,624	24,829
2000	23,816	2,991	26,808	1,657	25,151
2001	24,100	3,025	27,126	1,690	25,436
2002	24,512	3,076	27,589	1,724	25,865
2003	24,792	3,114	27,907	1,724	26,183
2004	24,985	3,140	28,125	1,724	26,401
2005	25,197	3,169	28,366	1,724	26,642
2006	25,412	3,198	28,609	1,724	26,885
2007	25,712	3,238	28,951	1,724	27,227
2008	26,030	3,281	29,311	1,724	27,587
2009	26,347	3,324	29,671	1,724	27,947
2010	26,684	3,370	30,054	1,724	28,330
Annual Growth Rates (%)					
1980-1990	2.2		2.1		1.7
1990-1998	0.6		0.5		0.3
1998-2010	1.2		1.2		1.3

Historic Data through 1998

TABLE B-5
Staff's Outlook for the SDG&E Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	9,730	690	10,419	0	10,419
1981	9,875	700	10,576	0	10,576
1982	9,823	696	10,519	11	10,508
1983	10,073	711	10,784	50	10,734
1984	10,760	753	11,513	144	11,369
1985	11,180	775	11,955	250	11,705
1986	11,671	806	12,476	307	12,169
1987	12,367	845	13,213	447	12,766
1988	13,237	901	14,139	524	13,615
1989	13,929	952	14,881	502	14,379
1990	14,798	1,016	15,814	466	15,348
1991	14,642	1,005	15,647	470	15,177
1992	15,540	1,070	16,610	446	16,164
1993	15,451	1,066	16,517	415	16,102
1994	15,791	1,090	16,881	410	16,471
1995	15,923	1,101	17,024	400	16,624
1996	16,600	1,150	17,750	386	17,364
1997	17,132	1,187	18,319	394	17,925
1998	17,630	1,221	18,851	402	18,449
1999	18,052	1,251	19,302	410	18,892
2000	18,541	1,285	19,826	418	19,408
2001	19,111	1,325	20,436	426	20,010
2002	19,658	1,363	21,021	435	20,586
2003	20,136	1,397	21,532	435	21,097
2004	20,539	1,425	21,964	435	21,529
2005	20,928	1,453	22,381	435	21,946
2006	21,289	1,479	22,767	435	22,332
2007	21,736	1,510	23,246	435	22,811
2008	22,175	1,541	23,716	435	23,281
2009	22,603	1,572	24,174	435	23,739
2010	23,022	1,601	24,623	435	24,188
Annual Growth Rates (%)					
1980-1990	4.3		4.3		3.9
1990-1998	2.2		2.2		2.3
1998-2010	2.2		2.3		2.3

Historic Data through 1998

TABLE B-6
Staff's Outlook for the BGP Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	2,374	152	2,526	0	2,526
1981	2,452	157	2,609	0	2,609
1982	2,399	154	2,552	0	2,552
1983	2,433	156	2,588	0	2,588
1984	2,644	169	2,813	0	2,813
1985	2,699	173	2,872	0	2,872
1986	2,695	172	2,868	0	2,868
1987	2,754	176	2,930	0	2,930
1988	2,861	183	3,044	0	3,044
1989	2,813	180	2,993	0	2,993
1990	2,951	189	3,140	0	3,140
1991	2,759	177	2,936	0	2,936
1992	2,931	188	3,118	0	3,118
1993	2,996	192	3,188	0	3,188
1994	2,999	192	3,190	0	3,190
1995	3,084	197	3,282	0	3,282
1996	3,152	202	3,353	0	3,353
1997	3,236	207	3,443	0	3,443
1998	3,298	211	3,509	0	3,509
1999	3,338	214	3,551	0	3,551
2000	3,395	217	3,612	0	3,612
2001	3,445	221	3,666	0	3,666
2002	3,535	226	3,761	0	3,761
2003	3,580	229	3,809	0	3,809
2004	3,614	231	3,846	0	3,846
2005	3,650	234	3,884	0	3,884
2006	3,683	236	3,919	0	3,919
2007	3,727	239	3,965	0	3,965
2008	3,770	241	4,012	0	4,012
2009	3,815	244	4,059	0	4,059
2010	3,860	247	4,107	0	4,107
Annual Growth Rates (%)					
1980-1990	2.2		2.2		2.2
1990-1998	1.4		1.4		1.4
1998-2010	1.3		1.3		1.3

Historic Data through 1998

TABLE B-7
Staff's Outlook for the Other Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	2,677	343	3,020	0	3,020
1981	2,781	356	3,137	0	3,137
1982	2,660	341	3,001	0	3,001
1983	2,595	332	2,928	0	2,928
1984	2,722	348	3,071	0	3,071
1985	2,770	355	3,124	0	3,124
1986	2,758	353	3,111	0	3,111
1987	2,872	368	3,240	0	3,240
1988	3,055	391	3,446	0	3,446
1989	3,205	410	3,615	0	3,615
1990	3,310	424	3,733	0	3,733
1991	3,323	425	3,748	0	3,748
1992	3,513	450	3,963	0	3,963
1993	3,602	461	4,063	0	4,063
1994	3,758	481	4,239	0	4,239
1995	3,819	489	4,308	0	4,308
1996	3,983	510	4,493	0	4,493
1997	3,972	508	4,481	0	4,481
1998	3,898	499	4,397	0	4,397
1999	3,998	512	4,510	0	4,510
2000	4,088	523	4,612	0	4,612
2001	4,174	534	4,709	0	4,709
2002	4,262	546	4,808	0	4,808
2003	4,352	557	4,909	0	4,909
2004	4,437	568	5,005	0	5,005
2005	4,540	581	5,121	0	5,121
2006	4,619	591	5,211	0	5,211
2007	4,701	602	5,303	0	5,303
2008	4,785	612	5,398	0	5,398
2009	4,863	622	5,486	0	5,486
2010	4,942	633	5,575	0	5,575
Annual Growth Rates (%)					
1980-1990	2.1		2.1		2.1
1990-1998	2.1		2.1		2.1
1998-2010	2.0		2.0		2.0

Historic Data through 1998

TABLE B-8
Staff's Outlook for the DWR Area
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	3,354	127	3,481	0	3,481
1981	5,264	200	5,464	0	5,464
1982	5,192	197	5,389	0	5,389
1983	2,497	95	2,592	0	2,592
1984	3,349	127	3,476	0	3,476
1985	5,410	206	5,616	0	5,616
1986	5,031	191	5,222	0	5,222
1987	4,734	180	4,913	0	4,913
1988	5,928	225	6,154	0	6,154
1989	7,413	282	7,694	0	7,694
1990	8,171	311	8,482	0	8,482
1991	4,400	167	4,567	0	4,567
1992	4,088	155	4,243	0	4,243
1993	4,372	166	4,538	0	4,538
1994	4,946	188	5,133	0	5,133
1995	3,562	135	3,698	0	3,698
1996	5,146	196	5,342	0	5,342
1997	5,504	209	5,713	0	5,713
1998	3,421	130	3,551	0	3,551
1999	5,490	209	5,699	0	5,699
2000	5,490	209	5,699	0	5,699
2001	5,490	209	5,699	0	5,699
2002	5,490	209	5,699	0	5,699
2003	5,490	209	5,699	0	5,699
2004	5,490	209	5,699	0	5,699
2005	5,490	209	5,699	0	5,699
2006	5,490	209	5,699	0	5,699
2007	5,490	209	5,699	0	5,699
2008	5,490	209	5,699	0	5,699
2009	5,490	209	5,699	0	5,699
2010	5,490	209	5,699	0	5,699
Annual Growth Rates (%)					
1980-1990	9.3		9.3		9.3
1990-1998	-10.3		-10.3		-10.3
1998-2010	4.0		4.0		4.0

Historic Data through 1998

TABLE B-9
Staff's Outlook for the State
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Private Supply	Net Energy for Load
1980	166,979	14,369	181,348	920	180,428
1981	173,655	14,855	188,510	934	187,576
1982	169,484	14,488	183,972	1,231	182,741
1983	172,779	14,810	187,589	2,142	185,447
1984	185,562	15,840	201,402	2,460	198,942
1985	192,521	16,284	208,806	2,877	205,929
1986	193,154	16,236	209,389	3,844	205,545
1987	202,880	16,941	219,821	5,467	214,354
1988	213,038	17,558	230,596	7,665	222,931
1989	219,788	17,979	237,767	8,457	229,310
1990	228,038	18,582	246,620	8,784	237,836
1991	222,260	18,244	240,503	9,156	231,347
1992	226,988	18,659	245,647	9,149	236,498
1993	227,624	18,628	246,252	10,444	235,808
1994	230,097	18,680	248,778	11,135	237,643
1995	230,990	18,856	249,846	11,215	238,631
1996	239,603	19,433	259,036	11,874	247,162
1997	247,412	20,083	267,496	11,862	255,634
1998	244,409	19,870	264,278	12,060	252,218
1999	252,414	20,453	272,868	12,233	260,635
2000	257,871	20,897	278,768	12,388	266,380
2001	263,312	21,339	284,652	12,537	272,115
2002	269,439	21,847	291,286	12,676	278,610
2003	275,047	22,317	297,364	12,676	284,688
2004	279,565	22,692	302,257	12,676	289,581
2005	284,204	23,078	307,282	12,676	294,606
2006	288,536	23,439	311,974	12,676	299,298
2007	293,657	23,866	317,524	12,676	304,848
2008	299,198	24,334	323,532	12,676	310,856
2009	304,485	24,777	329,262	12,676	316,586
2010	309,868	25,229	335,097	12,676	322,421
Annual Growth Rates (%)					
1980-1990	3.2		3.1		2.8
1990-1998	0.9		0.9		0.7
1998-2010	2.0		2.0		2.1

Historic Data through 1998

TABLE C-1
Staff's Outlook for the PG&E Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	6,182	4,797	3,192	1,331	701	0	16,203
1991	5,900	4,661	3,077	1,195	693	0	15,526
1992	5,494	5,012	3,102	1,221	715	0	15,544
1993	6,082	5,337	3,141	1,139	731	0	16,431
1994	6,469	4,693	3,267	1,244	734	0	16,408
1995	6,770	5,298	3,327	1,067	731	0	17,192
1996	6,463	6,089	3,559	1,251	827	0	18,189
1997	6,219	6,356	3,879	1,314	799	0	18,567
1998	7,034	6,374	3,970	1,355	803	0	19,537
1999	7,146	6,325	3,861	1,315	770	0	19,417
2000	7,229	6,425	3,931	1,332	771	0	19,689
2001	7,315	6,537	3,982	1,351	776	0	19,960
2002	7,381	6,681	4,028	1,366	776	0	20,232
2003	7,465	6,782	4,086	1,384	781	6	20,504
2004	7,598	6,866	4,158	1,410	792	12	20,836
2005	7,734	6,946	4,233	1,434	802	17	21,165
2006	7,875	7,016	4,295	1,455	814	22	21,478
2007	8,022	7,125	4,366	1,474	828	27	21,841
2008	8,183	7,285	4,439	1,491	838	30	22,265
2009	8,348	7,397	4,512	1,507	849	33	22,645
2010	8,520	7,517	4,579	1,522	860	36	23,034
Annual Growth Rates (%)							
1990-1998	1.6	3.6	2.8	0.2	1.7		2.4
1998-2010	1.6	1.4	1.2	1.0	0.6		1.4

Historic Data through 1999

TABLE C-2
Staff's Outlook for the SMUD Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	1,134	688	93	21	77	0	2,013
1991	1,056	731	95	19	86	0	1,987
1992	979	722	106	25	97	0	1,929
1993	1,056	677	110	28	98	0	1,968
1994	1,073	598	106	22	75	0	1,875
1995	1,115	700	104	26	95	0	2,039
1996	1,254	681	129	23	89	0	2,177
1997	1,131	894	102	22	92	0	2,240
1998	1,335	780	133	30	112	0	2,390
1999	1,483	786	127	29	105	0	2,531
2000	1,438	768	126	28	101	0	2,460
2001	1,450	780	129	28	101	0	2,487
2002	1,456	797	131	28	101	0	2,514
2003	1,469	803	135	28	102	3	2,541
2004	1,494	810	139	29	104	6	2,582
2005	1,519	817	143	29	106	9	2,622
2006	1,544	822	146	30	108	11	2,661
2007	1,571	835	150	30	110	13	2,708
2008	1,601	846	153	30	112	15	2,757
2009	1,632	858	156	31	114	17	2,808
2010	1,664	870	159	31	116	18	2,859
Annual Growth Rates (%)							
1990-1998	2.1	1.6	4.5	4.9	4.8		2.2
1998-2010	1.9	0.9	1.5	0.1	0.3		1.5

Historic Data through 1999

TABLE C-3
Staff's Outlook for the SCE Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	5,351	6,527	3,531	788	681	0	16,879
1991	4,980	6,270	3,329	774	664	0	16,017
1992	5,473	7,199	3,387	801	725	0	17,585
1993	6,415	5,275	2,846	663	601	0	15,799
1994	6,522	6,250	3,072	813	653	0	17,311
1995	6,319	5,927	3,224	722	667	0	16,860
1996	6,703	6,250	3,093	790	644	0	17,480
1997	6,402	7,143	3,319	736	737	0	18,338
1998	6,292	7,537	3,687	793	795	0	19,104
1999	6,114	7,125	3,608	758	753	0	18,359
2000	6,297	7,382	3,767	778	771	0	18,996
2001	6,410	7,555	3,883	789	774	0	19,411
2002	6,525	7,777	3,976	800	782	0	19,860
2003	6,644	7,935	4,078	811	792	6	20,265
2004	6,758	8,039	4,165	821	803	12	20,597
2005	6,871	8,142	4,265	832	812	17	20,939
2006	6,995	8,222	4,348	843	823	22	21,253
2007	7,127	8,357	4,441	856	836	27	21,644
2008	7,272	8,496	4,539	869	844	30	22,050
2009	7,421	8,635	4,635	882	852	33	22,458
2010	7,578	8,770	4,727	895	865	36	22,871
Annual Growth Rates (%)							
1990-1998	2.0	1.8	0.5	0.1	2.0		1.6
1998-2010	1.6	1.3	2.1	1.0	0.7		1.5

Historic Data through 1999

TABLE C-4
Staff's Outlook for the LADWP Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	1,449	2,479	744	15	233	0	4,920
1991	1,463	2,325	733	13	237	0	4,771
1992	1,443	2,595	677	14	228	0	4,957
1993	1,374	2,211	566	11	215	0	4,378
1994	1,472	2,410	584	13	237	0	4,716
1995	1,476	2,356	589	12	232	0	4,665
1996	1,503	2,469	607	13	222	0	4,814
1997	1,530	2,841	608	15	255	0	5,248
1998	1,419	2,939	625	15	262	0	5,259
1999	1,473	2,776	605	14	247	0	5,115
2000	1,470	2,814	619	14	248	0	5,165
2001	1,469	2,853	630	14	249	0	5,215
2002	1,461	2,908	635	14	248	0	5,266
2003	1,466	2,935	646	14	250	5	5,316
2004	1,468	2,942	654	15	251	11	5,340
2005	1,472	2,947	664	15	252	16	5,366
2006	1,478	2,950	673	15	256	21	5,393
2007	1,484	2,974	685	15	258	25	5,442
2008	1,491	3,000	698	16	261	28	5,494
2009	1,499	3,026	711	16	264	31	5,547
2010	1,508	3,054	724	16	268	34	5,604
Annual Growth Rates (%)							
1990-1998	-0.3	2.1	-2.2	-0.2	1.5		0.8
1998-2010	0.5	0.3	1.2	0.9	0.2		0.5

Historic Data through 1999

TABLE C-5
Staff's Outlook for the SDG&E Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	976	1,345	247	23	190	0	2,780
1991	875	1,491	239	23	200	0	2,828
1992	985	1,572	264	25	230	0	3,076
1993	911	1,332	226	23	206	0	2,697
1994	1,072	1,552	236	24	222	0	3,107
1995	1,053	1,510	241	24	228	0	3,055
1996	1,000	1,611	258	23	213	0	3,105
1997	1,196	1,709	267	27	240	0	3,438
1998	1,272	1,825	301	29	268	0	3,695
1999	1,164	1,651	254	25	225	0	3,318
2000	1,248	1,772	274	27	235	0	3,556
2001	1,285	1,820	284	28	246	0	3,662
2002	1,321	1,872	292	28	251	0	3,765
2003	1,352	1,913	302	29	254	1	3,851
2004	1,381	1,938	309	30	261	3	3,923
2005	1,411	1,961	318	31	265	4	3,991
2006	1,443	1,978	325	32	270	5	4,053
2007	1,474	2,014	332	33	275	6	4,134
2008	1,506	2,048	340	34	279	6	4,212
2009	1,538	2,084	347	34	281	7	4,291
2010	1,568	2,118	354	35	284	8	4,367
Annual Growth Rates (%)							
1990-1998	3.4	3.9	2.5	2.9	4.4		3.6
1998-2010	1.8	1.2	1.4	1.6	0.5		1.4

Historic Data through 1999

TABLE C-6
Staff's Outlook for the BGP Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	255	405	98	2	13	0	773
1991	247	386	71	2	12	0	718
1992	261	419	72	2	13	0	767
1993	231	373	61	2	12	0	679
1994	254	427	64	2	13	0	760
1995	242	433	53	2	13	0	743
1996	258	428	50	2	12	0	749
1997	254	491	47	2	16	0	810
1998	257	517	53	2	18	0	847
1999	255	530	50	2	17	0	854
2000	254	536	51	2	17	0	861
2001	254	542	52	2	17	0	867
2002	252	551	52	2	17	0	874
2003	254	556	53	2	18	1	883
2004	256	558	54	2	18	1	889
2005	258	560	55	2	18	2	895
2006	261	561	56	2	18	2	900
2007	263	566	57	2	19	3	909
2008	266	570	58	2	19	3	917
2009	269	574	59	2	19	3	926
2010	272	578	60	2	20	4	936
Annual Growth Rates (%)							
1990-1998	0.1	3.1	-7.5	0.7	4.3		1.1
1998-2010	0.5	0.9	1.1	-0.8	0.6		0.8

Historic Data through 1999

TABLE C-7
Staff's Outlook for the Other Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990							756
1991							759
1992							802
1993							822
1994							858
1995							872
1996							909
1997							907
1998							890
1999							913
2000							933
2001							953
2002							973
2003							994
2004							1,013
2005							1,036
2006							1,055
2007							1,073
2008							1,092
2009							1,110
2010							1,128

Annual Growth Rates (%)

1990-1998	2.1
1998-2010	2.0

Historic Data through 1999

TABLE C-8
Staff's Outlook for the DWR Area
End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990				227			227
1991				375			375
1992				242			242
1993				208			208
1994				88			88
1995				236			236
1996				398			398
1997				237			237
1998				236			236
1999				236			236
2000				236			236
2001				236			236
2002				236			236
2003				236			236
2004				236			236
2005				236			236
2006				236			236
2007				236			236
2008				236			236
2009				236			236
2010				236			236
Annual Growth Rates (%)							
1990-1998				0.5			0.5
1998-2010				0.0			0.0

Historic Data through 1997, 1998 and 1999 estimated

TABLE C-9
Staff's Outlook for the State
Noncoincident End Use Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agicultural	Other	Electric Vehicles	Total End Use Load
1990	15,346	16,241	7,905	2,407	2,650	0	44,550
1991	14,521	15,865	7,544	2,399	2,651	0	42,980
1992	14,634	17,520	7,608	2,329	2,811	0	44,902
1993	16,070	15,204	6,950	2,073	2,685	0	42,982
1994	16,862	15,930	7,330	2,207	2,793	0	45,122
1995	16,976	16,224	7,537	2,089	2,837	0	45,662
1996	17,180	17,529	7,696	2,500	2,916	0	47,821
1997	16,732	19,434	8,221	2,351	3,047	0	49,785
1998	17,608	19,972	8,769	2,460	3,149	0	51,957
1999	17,634	19,193	8,506	2,378	3,031	0	50,743
2000	17,937	19,697	8,769	2,416	3,078	0	51,896
2001	18,182	20,087	8,960	2,447	3,116	0	52,792
2002	18,397	20,586	9,115	2,475	3,147	0	53,720
2003	18,651	20,923	9,300	2,504	3,190	22	54,589
2004	18,955	21,153	9,480	2,542	3,241	45	55,415
2005	19,265	21,371	9,677	2,579	3,292	65	56,250
2006	19,596	21,550	9,844	2,612	3,344	83	57,029
2007	19,940	21,869	10,031	2,646	3,400	101	57,988
2008	20,318	22,245	10,227	2,677	3,445	112	59,024
2009	20,706	22,574	10,421	2,707	3,490	124	60,022
2010	21,110	22,907	10,604	2,737	3,541	136	61,034
Annual Growth Rates (%)							
1990-1998	1.7	2.6	1.3	0.3	2.2		1.9
1998-2010	1.5	1.1	1.6	0.9	1.0		1.4

Historic Data through 1999

TABLE D-1
Staff's Outlook for the PG&E Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	16,203	1,525	17,728	478	17,250	60.1
1991	15,526	1,459	16,985	488	16,497	62.8
1992	15,544	1,462	17,006	473	16,533	63.7
1993	16,431	1,546	17,977	488	17,489	60.1
1994	16,408	1,518	17,926	753	17,173	61.3
1995	17,192	1,593	18,785	769	18,016	59.2
1996	18,189	1,687	19,876	799	19,077	57.2
1997	18,567	1,721	20,288	829	19,459	58.5
1998	19,537	1,813	21,350	841	20,509	54.5
1999	19,417	1,801	21,218	849	20,369	56.6
2000	19,689	1,827	21,516	854	20,662	57.1
2001	19,960	1,853	21,813	858	20,955	57.5
2002	20,232	1,879	22,111	860	21,251	58.2
2003	20,504	1,905	22,410	860	21,550	58.7
2004	20,836	1,938	22,774	860	21,914	58.8
2005	21,165	1,970	23,134	860	22,274	58.8
2006	21,478	2,000	23,478	860	22,618	58.8
2007	21,841	2,035	23,877	860	23,017	58.9
2008	22,265	2,076	24,342	860	23,482	58.9
2009	22,645	2,113	24,758	860	23,898	59.0
2010	23,034	2,151	25,185	860	24,325	59.0
Annual Growth Rates (%)						
1990-1998	2.4		2.4		2.2	
1998-2010	1.4		1.4		1.4	

Historic Data through 1999

TABLE D-2
Staff's Outlook for the SMUD Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	2,013	182	2,195	0	2,195	46.3
1991	1,987	179	2,166	0	2,166	46.8
1992	1,929	174	2,103	0	2,103	49.1
1993	1,968	178	2,146	0	2,146	47.7
1994	1,875	169	2,044	0	2,044	50.0
1995	2,039	184	2,223	0	2,223	46.2
1996	2,177	196	2,373	0	2,373	45.1
1997	2,240	202	2,442	0	2,442	44.8
1998	2,390	216	2,606	0	2,606	42.5
1999	2,531	228	2,759	0	2,759	41.1
2000	2,460	222	2,682	0	2,682	43.3
2001	2,487	224	2,712	0	2,712	43.8
2002	2,514	227	2,741	0	2,741	44.5
2003	2,541	229	2,770	0	2,770	45.0
2004	2,582	233	2,815	0	2,815	45.1
2005	2,622	237	2,859	0	2,859	45.2
2006	2,661	240	2,901	0	2,901	45.3
2007	2,708	244	2,953	0	2,953	45.4
2008	2,757	249	3,006	0	3,006	45.5
2009	2,808	253	3,062	0	3,062	45.5
2010	2,859	258	3,117	0	3,117	45.6
Annual Growth Rates (%)						
1990-1998	2.2		2.2		2.2	
1998-2010	1.5		1.5		1.5	

Historic Data through 1999

TABLE D-3
Staff's Outlook for the SCE Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	16,879	1,246	18,125	478	17,647	54.1
1991	16,017	1,180	17,197	488	16,709	56.1
1992	17,585	1,301	18,886	473	18,413	52.1
1993	15,799	1,164	16,963	488	16,475	57.3
1994	17,311	1,274	18,585	541	18,044	53.4
1995	16,860	1,239	18,099	551	17,548	55.0
1996	17,480	1,286	18,766	559	18,207	54.9
1997	18,338	1,350	19,688	570	19,118	53.9
1998	19,104	1,408	20,512	577	19,935	51.7
1999	18,359	1,351	19,710	585	19,125	55.1
2000	18,996	1,398	20,395	596	19,799	54.5
2001	19,411	1,430	20,840	601	20,239	54.5
2002	19,860	1,463	21,323	604	20,719	54.5
2003	20,265	1,494	21,760	604	21,156	54.6
2004	20,597	1,519	22,117	604	21,513	54.8
2005	20,939	1,545	22,484	604	21,880	54.9
2006	21,253	1,569	22,822	604	22,218	55.1
2007	21,644	1,599	23,243	604	22,639	55.2
2008	22,050	1,630	23,680	604	23,076	55.3
2009	22,458	1,661	24,119	604	23,515	55.3
2010	22,871	1,692	24,563	604	23,959	55.4
Annual Growth Rates (%)						
1990-1998	1.6		1.6		1.5	
1998-2010	1.5		1.5		1.5	

Historic Data through 1999

TABLE D-4
Staff's Outlook for the LADWP Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	4,920	509	5,429	93	5,336	50.9
1991	4,771	467	5,238	138	5,100	52.0
1992	4,957	473	5,430	151	5,279	51.4
1993	4,378	418	4,796	146	4,650	59.2
1994	4,716	433	5,149	251	4,898	53.7
1995	4,665	404	5,069	251	4,818	56.3
1996	4,814	506	5,320	254	5,066	54.3
1997	5,248	453	5,701	257	5,444	51.4
1998	5,259	580	5,839	261	5,578	49.7
1999	5,115	549	5,664	264	5,400	52.5
2000	5,165	549	5,714	266	5,448	52.7
2001	5,215	554	5,770	268	5,502	52.8
2002	5,266	560	5,825	270	5,555	53.2
2003	5,316	565	5,881	270	5,611	53.3
2004	5,340	568	5,908	270	5,638	53.5
2005	5,366	571	5,937	270	5,667	53.7
2006	5,393	574	5,967	270	5,697	53.9
2007	5,442	579	6,021	270	5,751	54.0
2008	5,494	585	6,079	270	5,809	54.2
2009	5,547	591	6,138	270	5,868	54.4
2010	5,604	597	6,202	270	5,932	54.5
Annual Growth Rates (%)						
1990-1998	0.8		0.9		0.6	
1998-2010	0.5		0.5		0.5	

Historic Data through 1999

TABLE D-5
Staff's Outlook for the SDG&E Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	2,780	261	3,041	68	2,973	58.9
1991	2,828	235	3,063	62	3,001	57.7
1992	3,076	272	3,348	61	3,287	56.1
1993	2,697	212	2,909	57	2,852	64.4
1994	3,107	246	3,353	59	3,294	57.1
1995	3,055	257	3,312	59	3,253	58.3
1996	3,105	247	3,352	59	3,293	60.2
1997	3,438	289	3,727	59	3,668	55.8
1998	3,695	311	4,006	59	3,947	53.4
1999	3,318	308	3,626	59	3,567	60.5
2000	3,556	336	3,892	59	3,833	57.8
2001	3,662	346	4,008	59	3,949	57.9
2002	3,765	356	4,120	59	4,061	57.9
2003	3,851	364	4,215	59	4,156	58.0
2004	3,923	371	4,294	59	4,235	58.0
2005	3,991	377	4,368	59	4,309	58.1
2006	4,053	383	4,436	59	4,377	58.2
2007	4,134	391	4,525	59	4,466	58.3
2008	4,212	399	4,611	59	4,552	58.4
2009	4,291	406	4,697	59	4,638	58.4
2010	4,367	414	4,780	59	4,721	58.5
Annual Growth Rates (%)						
1990-1998	3.6		3.5		3.6	
1998-2010	1.4		1.5		1.5	

Historic Data through 1999

TABLE D-6
Staff's Outlook for the BGP Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	773	39	812	0	812	44.1
1991	718	37	755	0	755	44.4
1992	767	39	806	0	806	44.2
1993	679	35	714	0	714	51.0
1994	760	39	799	0	799	45.6
1995	743	38	781	0	781	48.0
1996	749	38	787	0	787	48.6
1997	810	41	851	0	851	46.2
1998	847	43	890	0	890	45.0
1999	854	44	897	0	897	45.2
2000	861	44	905	0	905	45.6
2001	867	44	912	0	912	45.9
2002	874	45	919	0	919	46.7
2003	883	45	928	0	928	46.9
2004	889	45	934	0	934	47.0
2005	895	46	940	0	940	47.1
2006	900	46	946	0	946	47.3
2007	909	46	955	0	955	47.4
2008	917	47	964	0	964	47.5
2009	926	47	973	0	973	47.6
2010	936	48	983	0	983	47.7
Annual Growth Rates (%)						
1990-1998	1.1		1.1		1.1	
1998-2010	0.8		0.8		0.8	

Historic Data through 1999

TABLE D-7
Staff's Outlook for the Other Area
System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	756	45	801	0	801	53.2
1991	759	46	804	0	804	53.2
1992	802	48	850	0	850	53.2
1993	822	49	872	0	872	53.2
1994	858	51	909	0	909	53.2
1995	872	52	924	0	924	53.2
1996	909	55	964	0	964	53.2
1997	907	54	961	0	961	53.2
1998	890	53	943	0	943	53.2
1999	913	55	968	0	968	53.2
2000	933	56	989	0	989	53.2
2001	953	57	1,010	0	1,010	53.2
2002	973	58	1,032	0	1,032	53.2
2003	994	60	1,053	0	1,053	53.2
2004	1,013	61	1,074	0	1,074	53.2
2005	1,036	62	1,099	0	1,099	53.2
2006	1,055	63	1,118	0	1,118	53.2
2007	1,073	64	1,138	0	1,138	53.2
2008	1,092	66	1,158	0	1,158	53.2
2009	1,110	67	1,177	0	1,177	53.2
2010	1,128	68	1,196	0	1,196	53.2
Annual Growth Rates (%)						
1990-1998	2.1		2.1		2.1	
1998-2010	2.0		2.0		2.0	

Historic Data through 1999

TABLE D-8
Staff's Outlook for the DWR Area
System Peak Demand (MW)

Year	Total End Use Load	Losses	System Peak Demand
1990	227	14	241
1991	375	22	397
1992	242	14	256
1993	208	12	220
1994	88	5	93
1995	236	14	250
1996	398	24	422
1997	237	14	251
1998	236	14	250
1999	236	14	250
2000	236	14	250
2001	236	14	250
2002	236	14	250
2003	236	14	250
2004	236	14	250
2005	236	14	250
2006	236	14	250
2007	236	14	250
2008	236	14	250
2009	236	14	250
2010	236	14	250

Historic Data through 1997, 1998 and 1999 estimated

TABLE D-9
Staff's Outlook for California
Non-coincident System Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Private Supply	System Peak Demand	Load Factor (%)
1990	44,550	3,822	48,372	1,117	47,255	57.5
1991	42,980	3,625	46,605	1,176	45,429	58.1
1992	44,902	3,783	48,685	1,158	47,527	56.8
1993	42,982	3,614	46,596	1,179	45,417	59.3
1994	45,122	3,737	48,858	1,604	47,254	57.4
1995	45,662	3,782	49,443	1,630	47,813	57.0
1996	47,821	4,039	51,860	1,671	50,189	56.2
1997	49,785	4,125	53,910	1,715	52,195	55.9
1998	51,957	4,439	56,396	1,738	54,658	52.7
1999	50,743	4,350	55,092	1,757	53,335	55.8
2000	51,896	4,446	56,342	1,775	54,567	55.7
2001	52,792	4,522	57,314	1,786	55,528	55.9
2002	53,720	4,602	58,321	1,793	56,528	56.3
2003	54,589	4,677	59,266	1,793	57,473	56.5
2004	55,415	4,749	60,164	1,793	58,371	56.6
2005	56,250	4,822	61,071	1,793	59,278	56.7
2006	57,029	4,890	61,919	1,793	60,126	56.8
2007	57,988	4,974	62,962	1,793	61,169	56.9
2008	59,024	5,065	64,090	1,793	62,297	57.0
2009	60,022	5,153	65,175	1,793	63,382	57.0
2010	61,034	5,242	66,276	1,793	64,483	57.1
Annual Growth Rates (%)						
1990-1998	1.9		1.9		1.8	
1998-2010	1.4		1.4		1.4	

Historic Data through 1999

TABLE D-10
Staff's Outlook for the State
1 IN 2 Electric Peak Demand by ISO Congestion Zone
(MW)

													Growth Rate (%)	
Noncoincident Demand	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	99-04	99-10
PG&E North	17,892	18,136	18,378	18,631	18,885	19,198	19,509	19,805	20,151	20,558	20,921	21,305	1.42	1.60
PG&E San Francisco	921	948	979	1,000	1,022	1,046	1,069	1,091	1,114	1,136	1,158	1,167	2.58	2.17
Sacramento Municipal Utilities District	2,759	2,682	2,712	2,741	2,770	2,815	2,859	2,901	2,953	3,006	3,062	3,117	0.40	1.11
Dept of Water Resources - North	43	43	43	43	43	43	43	43	43	43	43	43	0.00	0.00
North of Path 15	21,615	21,809	22,111	22,414	22,720	23,101	23,479	23,840	24,260	24,742	25,183	25,631	1.34	1.56
Pacific Gas & Electric - South	1,556	1,577	1,598	1,620	1,642	1,669	1,696	1,722	1,752	1,788	1,819	1,853	1.42	1.60
Southern California Edison	19,125	19,799	20,239	20,719	21,156	21,513	21,880	22,218	22,639	23,076	23,515	23,959	2.38	2.07
Pasadena Water and Power Dept	284	283	284	286	288	288	288	288	288	290	291	292	0.27	0.27
San Diego Gas & Electric	3,567	3,833	3,949	4,061	4,156	4,235	4,309	4,377	4,466	4,552	4,638	4,721	3.49	2.58
Dept of Water Resources - South	208	208	208	208	208	208	208	208	208	208	208	208	0.00	0.00
South of Path 15	24,739	25,699	26,278	26,894	27,449	27,912	28,381	28,813	29,353	29,913	30,471	31,033	2.44	2.08
Los Angeles Department of Water and Power	5,400	5,448	5,502	5,555	5,611	5,638	5,667	5,697	5,751	5,809	5,868	5,932	0.86	0.86
Burbank Public Service Dept	305	310	313	317	321	325	329	333	338	342	347	352	1.31	1.33
Glendale Public Service Dept	309	312	314	316	319	321	324	326	330	332	335	339	0.78	0.84
Imperial Irrigation District	725	750	770	791	812	833	854	875	895	915	936	956	2.82	2.55
Far North & East Sierra	243	239	240	241	241	241	245	243	243	243	241	240	-0.15	-0.09
Non ISO	6,981	7,058	7,139	7,219	7,304	7,358	7,418	7,473	7,556	7,642	7,728	7,819	1.06	1.04
Total State	53,335	54,567	55,528	56,528	57,473	58,371	59,278	60,126	61,169	62,297	63,382	64,483	1.82	1.74
Total ISO Noncoincident Demand	46,354	47,509	48,389	49,309	50,169	51,013	51,860	52,653	53,613	54,655	55,654	56,664	1.93	1.84
Coincident Demand														
Total ISO Coincident Demand	45,244	46,371	47,230	48,128	48,968	49,792	50,618	51,392	52,329	53,346	54,322	55,307	1.93	1.84
Total Statewide Coincident Demand	52,058	53,260	54,198	55,175	56,097	56,973	57,859	58,686	59,704	60,805	61,864	62,938	1.82	1.74

TABLE D-11
Staff's Outlook for the State
1 IN 5 Electric Peak Demand by ISO Congestion Zone
(MW)

													Growth Rate (%)	
Noncoincident Demand	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	99-04	99-10
PG&E North	18,594	18,846	19,091	19,346	19,602	19,918	20,246	20,559	20,924	21,352	21,735	22,126	1.39	1.59
PG&E San Francisco	932	962	1,001	1,031	1,062	1,096	1,114	1,131	1,148	1,165	1,182	1,199	3.29	2.32
Sacramento Municipal Utilities District	2,864	2,784	2,815	2,845	2,875	2,922	2,968	3,012	3,065	3,120	3,178	3,235	0.40	1.11
Dept of Water Resources - North	43	43	43	43	43	43	43	43	43	43	43	43	0.00	0.00
North of Path 15	22,433	22,635	22,949	23,264	23,581	23,979	24,370	24,744	25,179	25,680	26,137	26,603	1.34	1.56
Pacific Gas & Electric - South	1,617	1,639	1,660	1,682	1,705	1,732	1,761	1,788	1,819	1,857	1,890	1,924	1.39	1.59
Southern California Edison	19,756	20,452	20,907	21,403	21,854	22,223	22,602	22,951	23,387	23,837	24,291	24,750	2.38	2.07
Pasadena Water and Power Dept	298	297	298	300	302	302	302	302	302	304	305	306	0.27	0.27
San Diego Gas & Electric	3,592	3,859	3,976	4,090	4,185	4,264	4,339	4,408	4,497	4,584	4,671	4,754	3.49	2.58
Dept of Water Resources - South	208	208	208	208	208	208	208	208	208	208	208	208	0.00	0.00
South of Path 15	25,471	26,455	27,049	27,683	28,253	28,728	29,211	29,656	30,213	30,789	31,365	31,942	2.44	2.08
Los Angeles Department of Water and Power	5,665	5,715	5,771	5,827	5,886	5,914	5,945	5,976	6,033	6,094	6,156	6,222	0.86	0.86
Burbank Public Service Dept	320	325	329	332	337	341	345	349	354	359	364	370	1.31	1.33
Glendale Public Service Dept	324	327	330	331	334	337	340	342	346	348	352	355	0.78	0.84
Imperial Irrigation District	746	772	792	814	836	857	879	900	921	942	963	984	2.82	2.55
Far North & East Sierra	222	218	218	218	218	217	220	218	217	216	214	212	-0.45	-0.38
Non ISO	7,276	7,356	7,440	7,523	7,610	7,665	7,728	7,785	7,871	7,959	8,049	8,143	1.05	1.03
Total State	55,179	56,446	57,437	58,469	59,445	60,372	61,310	62,185	63,263	64,428	65,550	66,688	1.82	1.74
Total ISO Noncoincident Demand	47,903	49,090	49,998	50,947	51,835	52,707	53,581	54,401	55,392	56,469	57,502	58,545	1.93	1.84
Coincident Demand														
Total ISO Coincident Demand	46,756	47,914	48,800	49,727	50,593	51,445	52,298	53,098	54,065	55,117	56,125	57,143	1.93	1.84
Total Statewide Coincident Demand	53,858	55,094	56,062	57,069	58,021	58,926	59,841	60,696	61,748	62,886	63,980	65,091	1.82	1.74

TABLE D-12
Staff's Outlook for the State
1 IN 40 Electric Peak Demand by ISO Congestion Zone
(MW)

													Growth Rate (%)	
Noncoincident Demand	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	99-04	99-10
PG&E North	19,681	19,949	20,209	20,480	20,752	21,088	21,435	21,766	22,152	22,605	23,010	23,424	1.39	1.60
PG&E San Francisco	932	962	1,001	1,031	1,062	1,096	1,114	1,131	1,148	1,165	1,182	1,199	3.29	2.32
Sacramento Municipal Utilities District	3,024	2,940	2,972	3,004	3,036	3,085	3,133	3,180	3,236	3,295	3,355	3,416	0.40	1.11
Dept of Water Resources - North	43	43	43	43	43	43	43	43	43	43	43	43	0.00	0.00
North of Path 15	23,680	23,893	24,224	24,557	24,892	25,311	25,725	26,120	26,579	27,107	27,590	28,081	1.34	1.56
Pacific Gas & Electric - South	1,711	1,735	1,757	1,781	1,805	1,834	1,864	1,893	1,926	1,966	2,001	2,037	1.39	1.60
Southern California Edison	20,808	21,541	22,020	22,543	23,017	23,406	23,806	24,173	24,632	25,106	25,585	26,068	2.38	2.07
Pasadena Water and Power Dept	303	303	304	306	308	307	307	307	308	310	311	312	0.27	0.27
San Diego Gas & Electric	3,625	3,894	4,012	4,126	4,222	4,302	4,378	4,447	4,537	4,625	4,712	4,797	3.49	2.58
Dept of Water Resources - South	208	208	208	208	208	208	208	208	208	208	208	208	0.00	0.00
South of Path 15	26,655	27,680	28,301	28,963	29,560	30,057	30,562	31,028	31,611	32,214	32,816	33,421	2.43	2.08
Los Angeles Department of Water and Po\	5,773	5,824	5,881	5,938	5,998	6,027	6,058	6,090	6,148	6,210	6,273	6,341	0.86	0.86
Burbank Public Service Dept	326	331	335	339	343	348	352	356	361	366	371	377	1.31	1.33
Glendale Public Service Dept	330	333	336	338	341	343	346	348	353	355	358	362	0.78	0.84
Imperial Irrigation District	789	816	838	861	883	906	929	952	974	996	1,018	1,040	2.82	2.55
Far North & East Sierra	179	173	172	171	170	167	170	166	164	163	159	156	-1.30	-1.23
Non ISO	7,396	7,477	7,562	7,646	7,735	7,791	7,854	7,912	7,999	8,089	8,180	8,276	1.05	1.03
Total State	57,730	59,050	60,087	61,167	62,187	63,159	64,142	65,060	66,188	67,410	68,586	69,778	1.81	1.74
Total ISO Noncoincident Demand	50,334	51,573	52,525	53,520	54,452	55,368	56,287	57,148	58,189	59,321	60,406	61,502	1.92	1.84
Coincident Demand														
Total ISO Coincident Demand	49,129	50,338	51,267	52,239	53,148	54,042	54,939	55,780	56,796	57,901	58,960	60,030	1.92	1.84
Total Statewide Coincident Demand	56,348	57,636	58,648	59,702	60,698	61,647	62,606	63,502	64,603	65,796	66,943	68,107	1.81	1.74

TABLE E-1
Staff's Outlook for the PG&E Area
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	2,298	733	2,527	194	0	5,752
1981	2,079	688	2,399	187	0	5,353
1982	2,226	804	1,989	197	0	5,215
1983	2,093	753	1,215	173	0	4,234
1984	2,036	793	1,169	182	0	4,180
1985	2,236	787	1,773	187	0	4,983
1986	1,958	739	1,279	175	0	4,151
1987	2,034	775	1,529	182	0	4,521
1988	2,015	727	1,631	242	0	4,615
1989	2,168	816	1,529	214	0	4,727
1990	2,118	905	1,886	214	0	5,122
1991	2,169	817	1,902	200	0	5,089
1992	1,961	739	1,545	161	0	4,406
1993	2,124	779	1,643	153	0	4,699
1994	2,209	854	1,654	187	0	4,904
1995	1,964	797	1,732	150	0	4,643
1996	1,980	845	1,885	157	0	4,867
1997	1,976	923	1,887	175	0	4,962
1998	2,281	996	1,905	183	0	5,365
1999	2,102	948	1,980	176	5	5,211
2000	2,114	962	2,015	177	6	5,274
2001	2,127	975	2,040	178	12	5,333
2002	2,141	989	2,067	180	16	5,393
2003	2,155	1,001	2,090	181	20	5,447
2004	2,169	1,013	2,121	182	22	5,507
2005	2,182	1,024	2,159	183	25	5,573
2006	2,196	1,035	2,175	184	27	5,617
2007	2,212	1,041	2,203	186	29	5,671
2008	2,230	1,048	2,239	187	30	5,734
2009	2,249	1,055	2,275	188	32	5,798
2010	2,269	1,063	2,309	189	33	5,863
Annual Growth Rates (%)						
1980-1990	-0.8	2.1	-2.9	1.0		-1.2
1990-1998	0.9	1.2	0.1	-1.9		0.6
1998-2004	-0.8	0.3	1.8	-0.1		0.4
1998-2010	0.0	0.5	1.6	0.3		0.7

Historic Data through 1998

TABLE E-2
Staff's Outlook for the SCG Area
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	3,184	800	3,192	152	0	7,328
1981	2,784	782	3,101	162	0	6,828
1982	3,006	838	2,701	158	0	6,702
1983	2,747	781	2,319	132	0	5,979
1984	2,545	749	2,254	134	0	5,681
1985	2,870	864	2,210	142	0	6,085
1986	2,507	779	2,287	126	0	5,698
1987	2,740	850	2,330	137	0	6,056
1988	2,741	913	2,811	139	0	6,605
1989	2,806	964	3,045	138	0	6,952
1990	2,688	837	2,321	131	0	5,976
1991	2,705	815	1,713	157	0	5,390
1992	2,694	771	2,437	133	0	6,036
1993	2,620	793	2,579	114	0	6,106
1994	2,666	791	2,690	123	0	6,269
1995	2,459	765	3,368	120	0	6,713
1996	2,482	796	3,851	134	0	7,262
1997	2,441	785	3,850	145	0	7,221
1998	2,812	878	4,364	153	0	8,207
1999	2,585	845	4,422	148	24	8,024
2000	2,600	866	4,459	149	33	8,106
2001	2,616	888	4,458	150	64	8,176
2002	2,632	910	4,394	152	86	8,173
2003	2,651	931	4,384	152	104	8,222
2004	2,669	952	4,397	153	120	8,291
2005	2,686	972	4,420	154	132	8,364
2006	2,704	993	4,422	155	143	8,417
2007	2,727	1,009	4,517	155	153	8,561
2008	2,751	1,027	4,627	156	162	8,723
2009	2,776	1,044	4,729	156	170	8,876
2010	2,803	1,061	4,822	157	178	9,020
Annual Growth Rates (%)						
1980-1990	-1.7	0.4	-3.1	-1.5		-2.0
1990-1998	0.6	0.6	8.2	2.0		4.0
1998-2004	-0.9	1.4	0.1	0.0		0.2
1998-2010	0.0	1.6	0.8	0.2		0.8

Historic Data through 1998

TABLE E-3
Staff's Outlook for the SDG&E Area
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	312	92	41	24	0	470
1981	288	88	39	23	0	438
1982	318	96	41	23	0	478
1983	296	94	30	21	0	441
1984	283	105	18	31	0	437
1985	327	106	36	35	0	505
1986	295	91	46	30	0	462
1987	331	101	57	31	0	519
1988	336	124	56	36	0	552
1989	340	159	48	46	0	592
1990	334	137	18	67	0	556
1991	332	66	60	64	0	522
1992	307	100	40	94	0	541
1993	322	189	39	71	0	621
1994	334	149	36	31	0	550
1995	299	172	41	32	0	545
1996	300	198	50	38	0	586
1997	313	217	56	41	0	627
1998	354	213	55	40	0	662
1999	328	235	55	41	2	660
2000	332	242	56	41	2	673
2001	337	249	57	42	4	688
2002	342	257	57	42	5	703
2003	346	264	58	43	7	716
2004	349	270	59	43	7	730
2005	353	277	61	44	8	743
2006	357	283	63	44	9	756
2007	361	289	65	44	10	769
2008	365	295	67	45	10	781
2009	369	301	69	45	11	794
2010	372	306	71	45	11	806
Annual Growth Rates (%)						
1980-1990	0.7	4.0	-7.9	10.6		1.7
1990-1998	0.7	5.7	15.0	-6.1		2.2
1998-2004	-0.2	4.1	1.2	1.2		1.6
1998-2010	0.4	3.1	2.1	1.0		1.7

Historic Data through 1998

TABLE E-4
Staff's Outlook for the Other Area
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	46	20	3	8	0	78
1981	43	16	3	3	0	66
1982	40	13	2	3	0	59
1983	33	15	2	3	0	52
1984	47	19	2	4	0	72
1985	59	20	3	3	0	85
1986	50	19	3	4	0	76
1987	62	15	3	2	0	81
1988	63	18	3	1	0	86
1989	69	17	4	2	0	91
1990	72	17	4	2	0	95
1991	61	21	4	2	0	88
1992	67	20	4	3	0	94
1993	72	22	4	4	0	102
1994	75	21	7	5	0	109
1995	57	14	8	3	0	83
1996	57	14	19	4	0	93
1997	63	15	21	3	0	102
1998	74	17	17	3	0	111
1999	66	15	17	3	0	101
2000	67	15	17	3	0	102
2001	67	16	17	3	0	103
2002	67	16	18	4	0	105
2003	67	16	18	4	0	106
2004	67	17	19	4	0	107
2005	67	17	20	4	0	108
2006	67	17	20	4	0	109
2007	67	18	21	4	0	109
2008	67	18	21	4	0	110
2009	67	18	22	4	0	111
2010	67	18	22	4	0	112
Annual Growth Rates (%)						
1980-1990	4.6	-1.8	1.3	-14.9		2.0
1990-1998	0.3	-0.2	20.1	9.9		2.0
1998-2004	-1.6	0.1	2.6	0.8		-0.6
1998-2010	-0.8	0.8	2.5	1.1		0.1

Historic Data through 1998

TABLE E-5
Staff's Outlook for the State
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Other	Natural Gas Vehicles	Total Consumption
1980	5,840	1,646	5,763	378	0	13,627
1981	5,195	1,574	5,541	375	0	12,686
1982	5,589	1,751	4,733	380	0	12,454
1983	5,169	1,642	3,566	329	0	10,706
1984	4,911	1,665	3,444	351	0	10,370
1985	5,493	1,777	4,021	367	0	11,658
1986	4,809	1,629	3,615	334	0	10,387
1987	5,167	1,741	3,918	351	0	11,177
1988	5,156	1,783	4,501	418	0	11,857
1989	5,383	1,955	4,625	399	0	12,362
1990	5,212	1,895	4,228	413	0	11,748
1991	5,267	1,720	3,679	422	0	11,088
1992	5,029	1,631	4,026	391	0	11,077
1993	5,138	1,784	4,265	342	0	11,528
1994	5,283	1,815	4,387	346	0	11,832
1995	4,780	1,749	5,150	306	0	11,985
1996	4,819	1,853	5,805	332	0	12,808
1997	4,793	1,940	5,814	365	0	12,911
1998	5,521	2,103	6,341	380	0	14,344
1999	5,082	2,043	6,473	368	30	13,996
2000	5,112	2,085	6,546	371	41	14,155
2001	5,146	2,128	6,572	374	79	14,300
2002	5,182	2,172	6,536	378	107	14,374
2003	5,218	2,212	6,550	380	131	14,491
2004	5,254	2,252	6,597	382	150	14,635
2005	5,288	2,290	6,661	385	165	14,789
2006	5,324	2,328	6,680	387	179	14,899
2007	5,366	2,357	6,806	389	192	15,110
2008	5,413	2,388	6,954	391	203	15,348
2009	5,461	2,418	7,095	393	213	15,579
2010	5,511	2,449	7,225	395	222	15,802
Annual Growth Rates (%)						
1980-1990	-1.1	1.4	-3.0	0.9		-1.5
1990-1998	0.7	1.3	5.2	-1.0		2.5
1998-2004	-0.8	1.1	0.7	0.1		0.3
1998-2010	0.0	1.3	1.1	0.3		0.8

Historic Data through 1998

TABLE F-1
Demand Side Management Program Impacts
Annual Electricity Savings (GWh)

	Utility Efficienc	Applianc e	Building Standard	Other	Total
1975	0	0	38	0	38
1976	119	0	104	0	223
1977	1,211	0	185	4	1,400
1978	3,101	0	488	13	3,601
1979	4,684	13	809	49	5,555
1980	6,080	49	955	132	7,215
1981	7,751	148	1,045	259	9,203
1982	9,334	297	1,099	422	11,152
1983	10,874	538	1,199	553	13,164
1984	12,502	839	1,482	736	15,560
1985	13,970	1,167	1,729	903	17,769
1986	15,091	1,516	1,990	1,082	19,679
1987	15,423	1,966	2,275	1,120	20,784
1988	15,457	2,389	2,663	937	21,446
1989	15,454	2,817	2,988	1,003	22,262
1990	15,610	3,209	3,207	1,369	23,396
1991	16,163	3,579	3,385	1,363	24,490
1992	16,744	4,002	3,577	-498	23,824
1993	17,462	4,388	3,685	-1,247	24,289
1994	18,223	4,904	4,127	-1,518	25,735
1995	18,262	5,380	4,453	601	28,695
1996	18,516	5,863	4,730	1,295	30,404
1997	18,674	6,351	5,071	1,322	31,418
1998	18,556	6,835	5,422	1,170	31,982
1999	18,452	7,318	5,777	1,088	32,635
2000	18,345	7,803	6,154	1,003	33,304
2001	18,222	8,278	6,518	922	33,940
2002	17,139	8,740	6,882	1,108	33,870
2003	16,035	9,206	7,255	1,043	33,539
2004	14,910	9,662	7,639	979	33,190
2005	13,779	10,105	8,036	909	32,828
2006	12,672	10,531	8,431	828	32,462
2007	11,616	10,946	8,810	739	32,111
2008	10,635	11,355	9,188	640	31,818
2009	9,741	11,748	9,548	534	31,571
2010	8,942	12,128	9,907	426	31,404

TABLE F-2
Utility Energy Efficiency Program Impacts
Annual Electricity Savings (GWh)

	Residential	Commercial	Industrial	Other	System Efficiency	Total
1975	0	0	0	0	0	0
1976	18	65	17	19	0	119
1977	86	316	170	75	565	1,211
1978	199	676	368	146	1,712	3,101
1979	377	1,108	653	259	2,287	4,684
1980	586	1,672	994	408	2,421	6,080
1981	734	2,335	1,387	580	2,715	7,751
1982	837	3,077	1,838	789	2,794	9,334
1983	1,033	3,768	2,267	942	2,863	10,874
1984	1,231	4,549	2,716	1,116	2,890	12,502
1985	1,442	5,191	3,133	1,251	2,953	13,970
1986	1,605	5,648	3,474	1,393	2,971	15,091
1987	1,672	5,618	3,689	1,419	3,025	15,423
1988	1,719	5,403	3,884	1,421	3,029	15,457
1989	1,795	5,195	4,018	1,413	3,033	15,454
1990	1,869	5,047	4,199	1,462	3,033	15,610
1991	2,020	5,116	4,397	1,596	3,033	16,163
1992	2,204	5,251	4,586	1,669	3,033	16,744
1993	2,395	5,543	4,827	1,664	3,033	17,462
1994	2,614	5,952	4,955	1,668	3,033	18,223
1995	2,712	6,093	4,815	1,609	3,033	18,262
1996	2,796	6,437	4,710	1,539	3,033	18,516
1997	2,849	6,670	4,637	1,484	3,033	18,674
1998	2,905	6,553	4,656	1,409	3,033	18,556
1999	2,947	6,461	4,679	1,332	3,033	18,452
2000	2,978	6,371	4,714	1,248	3,033	18,345
2001	3,002	6,264	4,763	1,160	3,033	18,222
2002	2,853	5,797	4,417	1,040	3,033	17,139
2003	2,700	5,288	4,086	928	3,033	16,035
2004	2,543	4,739	3,764	830	3,033	14,910
2005	2,381	4,172	3,445	748	3,033	13,779
2006	2,216	3,620	3,121	681	3,033	12,672
2007	2,052	3,119	2,785	627	3,033	11,616
2008	1,892	2,688	2,440	582	3,033	10,635
2009	1,733	2,333	2,100	542	3,033	9,741
2010	1,575	2,048	1,780	507	3,033	8,942

TABLE F-3
Demand Side Management Program Impacts
Annual Natural Gas Savings (Millions of Therms

	Utility Efficienc	Applianc e	Building Standard	Other	Total
1975	0	0	17	0	17
1976	44	0	47	0	91
1977	90	0	85	0	174
1978	253	0	129	0	382
1979	342	7	173	0	522
1980	498	34	193	0	725
1981	609	70	208	0	886
1982	762	101	207	0	1,070
1983	902	147	228	0	1,277
1984	1,000	204	283	0	1,487
1985	1,133	264	336	0	1,734
1986	1,253	325	400	0	1,978
1987	1,329	377	449	-4	2,152
1988	1,334	432	509	-8	2,267
1989	1,347	485	563	-875	1,520
1990	1,371	530	592	-1,676	817
1991	1,405	577	628	-2,027	583
1992	1,420	622	734	-2,405	371
1993	1,426	661	771	-3,090	-232
1994	1,399	707	828	-3,997	-1,063
1995	1,373	749	879	-4,074	-1,074
1996	1,337	788	920	-4,021	-975
1997	1,303	827	963	-3,948	-855
1998	1,267	864	1,006	-3,812	-675
1999	1,226	899	1,049	-3,581	-407
2000	1,176	933	1,092	-3,238	-37
2001	1,117	963	1,132	-2,803	409
2002	1,026	992	1,171	-2,322	866
2003	931	1,020	1,208	-1,829	1,329
2004	835	1,045	1,248	-1,347	1,780
2005	740	1,070	1,286	-905	2,191
2006	652	1,093	1,323	-550	2,518
2007	572	1,113	1,362	-304	2,743
2008	502	1,133	1,392	-155	2,872
2009	442	1,150	1,423	-73	2,943
2010	388	1,168	1,453	-30	2,980

TABLE F-4
Utility Energy Efficiency Program Impacts
nnual Natural Gas Savings (Millions of Therm

	Residential	Commercial	Industrial	Other	Total
1975	0	0	0	0	0
1976	1	30	12	1	44
1977	7	60	20	3	90
1978	123	95	31	5	253
1979	174	121	41	6	342
1980	267	165	59	7	498
1981	324	202	73	9	609
1982	371	274	101	16	762
1983	449	305	130	18	902
1984	515	320	145	19	1,000
1985	648	315	150	19	1,133
1986	727	335	168	22	1,253
1987	768	331	208	21	1,329
1988	780	317	216	20	1,334
1989	792	312	224	20	1,347
1990	803	293	244	30	1,371
1991	821	281	272	30	1,405
1992	827	271	292	30	1,420
1993	829	260	308	29	1,426
1994	810	243	317	29	1,399
1995	788	230	327	28	1,373
1996	767	218	326	26	1,337
1997	746	207	324	25	1,303
1998	722	199	321	25	1,267
1999	691	194	316	24	1,226
2000	654	190	309	24	1,176
2001	609	186	299	23	1,117
2002	555	168	281	21	1,026
2003	499	150	261	20	931
2004	441	133	242	19	835
2005	384	116	223	18	740
2006	331	101	203	17	652
2007	285	87	183	16	572
2008	248	75	163	15	502
2009	219	65	144	15	442
2010	195	55	124	14	388