CALIFORNIA ENERGY COMMISSION

CALIFORNIA ENERGY DEMAND 2010-2020
STAFF DRAFT FORECAST

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The staff demand forecast was prepared using the expertise of numerous staff members in the Demand Analysis Office. Andrea Gough supervised data preparation and combined the separate chapters and appendices into a coherent document. Lynn Marshall contributed to the peak forecast and various other aspects of the analysis. Mohsen Abrishami prepared the commercial sector forecast. Bryan Alcorn prepared the industrial forecast. Mark Ciminelli forecasted energy for transportation, communication, and utilities. Ted Dang and Steven Mac prepared the historic energy consumption data. Miguel Garcia-Cerrutti developed and ran the revised Summary Model. Asish Gautam prepared the forecast for self-generation and developed the predictive model for photovoltaic systems. Adrienne Kandel developed the projections of commercial floor space, with contribution from Gary Occhiuzzo. Nahid Movassagh forecasted consumption for the agriculture and water pumping sectors. Don Schultz, Nicholas Fugate, and Mike Jaske developed the energy efficiency program estimates. Glen Sharp prepared the residential sector forecast. Kate Sullivan and Tom Gorin prepared the demographic projections. Mitch Tian prepared the peak demand forecast.

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Abstract

This document presents the California Energy Commission staff draft forecasts for 2010-2020 electricity, peak, and natural gas demand for each utility planning area in California and for California as a whole. The *California Energy Demand 2010-2020 Staff Draft Forecast* supports the analysis and recommendations in the *2007 Integrated Energy Policy Report* and the *2008 Integrated Energy Policy Report Update.* In particular, this document reports on progress made by staff in refining how energy efficiency program impacts are measured and attributed within the forecast.

The energy consumption and peak forecasts presented in the report are lower than the 2008-2018 forecasts previously produced for the *2007 Integrated Energy Policy Report*, primarily because of worsening economic conditions. Compared to the previous forecast, projected electricity consumption is down by almost 10 percent and peak demand is down by more than 8 percent for 2018. Electricity consumption is expected to increase by 0.8 percent per year from 2010-2018, versus the 1.2 percent per year projected for the *2007 Integrated Energy Policy Report.* Peak demand is expected to grow an average of 1.1 percent annually over the same period compared to 1.3 percent in the previous forecast.

Keywords

Electricity demand, consumption, forecast, weather normalization, peak, natural gas, self-generation, conservation, energy efficiency, California Solar Initiative

Executive Summary

Introduction

The *California Energy Demand 2010-2020 Staff Draft Forecast* (*CED 2009*), an Energy Commission staff report, presents forecasts of electricity and end-user natural gas consumption and peak electricity demand for California as a whole and for each major utility planning area within California for 2010-2020. The *CED 2009* supports the analysis and recommendations in the *2007 Integrated Energy Policy Report* (*2007 IEPR*) and the *2008 Integrated Energy Policy Report Update (2008 IEPR)*. In particular, the *CED 2009* reports on progress made by staff in refining how energy efficiency program impacts are measured and attributed within the forecast.

Summary of Changes to Forecast

The previous long run forecast used in the *2007 IEPR*, the *California Energy Demand 2008-2018 Staff Revised Forecast (CED 2007)*, was based on 2006 peak demand and energy. For the current forecast, staff added 2007 energy consumption data to the historic series used for forecasting. The peak demand forecast incorporates recent analysis of 2008 temperatures and peak demand at the planning area level.

In the residential sector, lighting was broken out as a separate end use for the first time to better capture the impacts of residential lighting efficiency programs. In the commercial sector, staff revised its estimates of existing floor space and projected new floor space using updated economic projections and a new econometric methodology. The economic projections used for this forecast lead to a lower level of projected floor space than used in the *CED 2007*. For self-generation, staff refined its methods to track the various technologies and individual programs.

The *CED 2007* assumed constant electricity rates throughout the forecast period. For this forecast, staff developed three rate scenarios for electricity and natural gas rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed that 2020 rates would be approximately 30 percent higher rates than 2010 rates for both electricity and natural gas, while the "mid" case assumed 15 percent and 10 percent higher rates for electricity and natural gas, respectively, over the same period. In the low case, rates remained at 2010 levels through 2020 for both fuel types. Three combinations of electricity and natural gas rates were used as inputs to the models: high rates for each, mid rates for each, and low rates for each.

The increased effort to capture the impacts of energy efficiency programs, along with including expected effects of 2009-2011 utility programs, helped reduce the forecasted energy demand in the investor-owned utility service territories relative to the demand forecasted in *CED 2007*.

Electricity Forecast Results

Table ES-1 compares the *CED 2009* for select years with the *CED 2007* and shows results for one of three electricity rate scenarios used for this forecast: the scenario that assumed no increase in rates from 2010-2020, referred to as the low-rate case. This scenario is most directly comparable to the 2007 forecast, which assumed flat rates throughout the forecast period. Both the energy consumption and peak forecasts are lower than in the previous forecast over the entire forecast period, primarily because of worsening economic conditions. Projected electricity consumption is down by more than 9 percent and peak demand by around 5 percent by 2018 compared to the *CED 2007*. Electricity consumption is projected to grow at a rate of 0.8 percent per year from 2010-2018, versus 1.2 percent per year in the *CED 2007*, while peak demand grows an average of 1.1 percent annually over the same period, compared to 1.3 percent in the previous forecast.

Table ES-1: Comparison of CED 2007 and CED 2009 Statewide Electricity Demand

	Consumption (GWh)			Peak (MW)		
	2007 Forecast	Staff Draft (Low-Rate Case)	Percent Difference Staff Draft/2007 Forecast	2007 Forecast	Staff Draft (Low-Rate Case)	Percent Difference Staff Draft/2007 Forecast
1990	229,868	229,868	0.00%	47,308	47,308	0.00%
2000	265,769	265,769	0.00%	53,669	53,669	0.00%
2007	285,197	282,098	-1. 09%	62,085	62,698	0. 99%
2010	297,062	278,043	-6. 40%	64,760	62,520	-3. 46%
2015	316,575	290,504	-8. 24%	69,302	66,174	-4. 51%
2018	327,085	297,104	-9. 17%	71,889	68,321	-4. 96%
Annual Average Growth Rates						
1990-2000	1. 46%	1. 46%		1. 27%	1. 29%	
2000-2007	1. 01%	0. 94%		2. 10%	2. 24%	
2007-2010	1. 37%	-0. 48%		1. 42%	-0. 09%	
2010-2018	1. 21%	0. 82%		1. 31%	1. 12%	
Historic values are shaded						
GWh=gigawatt-hour						
MW = megawatt						

Source: California Energy Commission, 2009

Lower residential demand is the result of lower projected income growth than the 2007 forecast. Lower projected employment and output growth reduces industrial and commercial demand. The effect of these changes from the previous forecast can clearly be seen in **Figures ES-1** and **ES-2**.

Figure ES-1: Statewide Electricity Consumption
(CED 2009, Low-Rate Case)

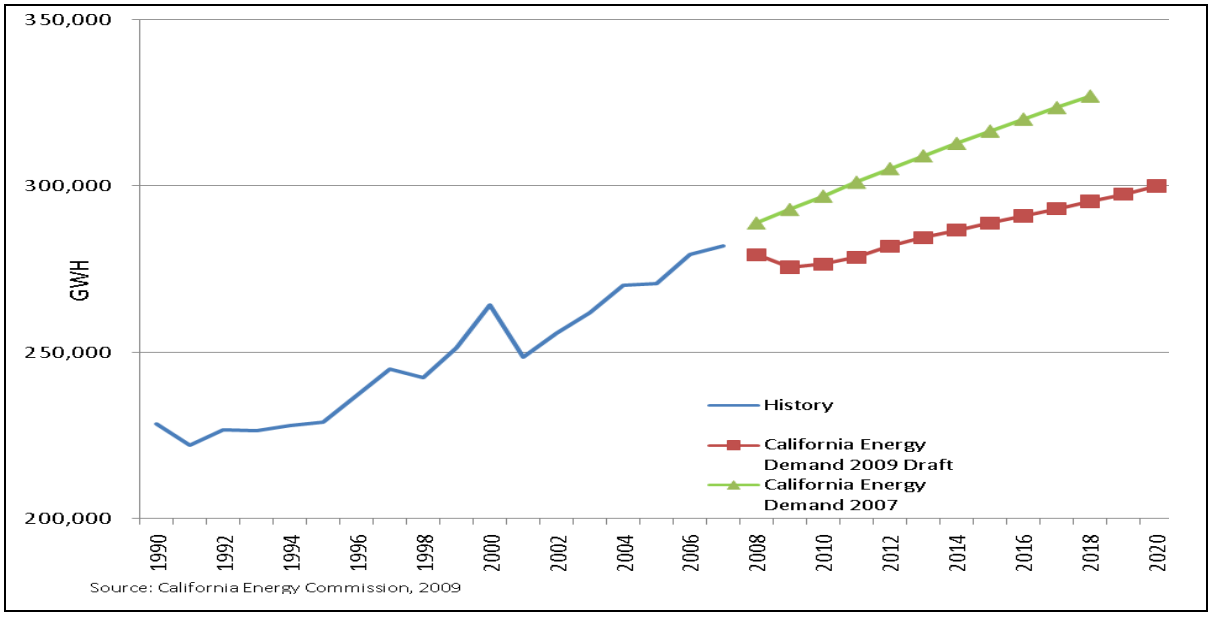
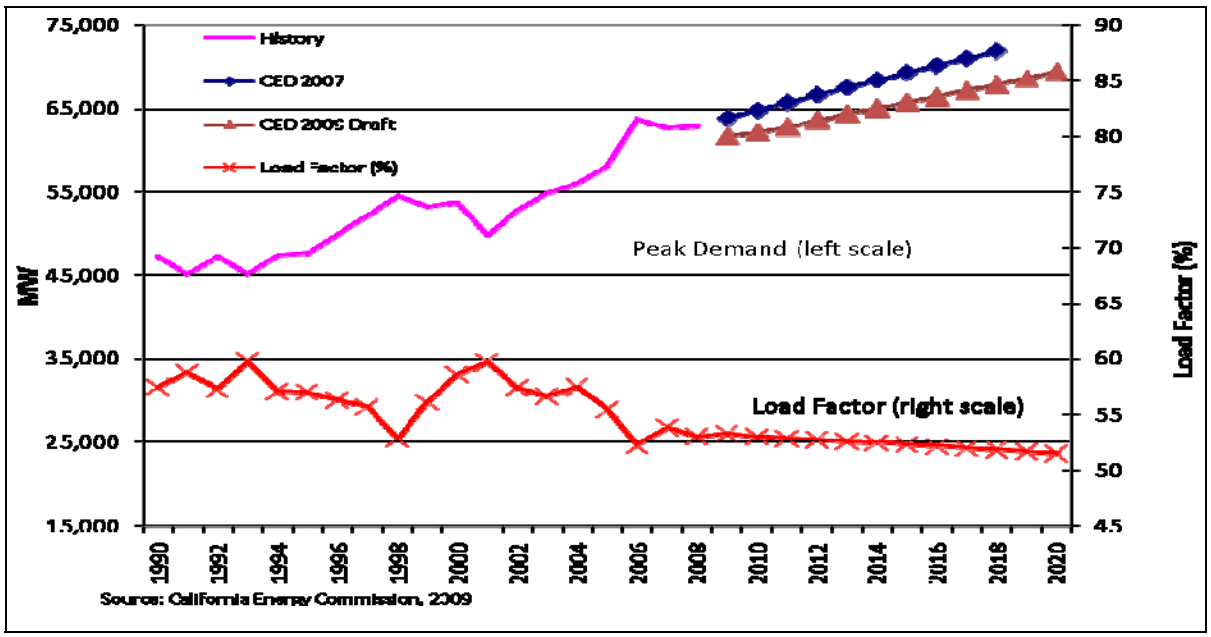


Figure ES-2: Statewide Non-Coincident Peak Demand
(CED 2009, Low-Rate Case)



Natural Gas Forecast Results

Table ES-2 compares the statewide *CEC 2009* forecast with the *CED 2007* forecast for selected years. As in the case of electricity, the draft natural gas demand forecast has a lower growth rate than does the previous forecast because of lower income and economic growth, along with lower reported consumption in 2007 compared to the forecast for the same year in the *CED 2007*. Most of this decrease comes from lower floor space projections in the commercial sector. This forecast does not include natural gas used for electric generation.

Table ES-2: Statewide Natural Gas Forecast Comparison

	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
	(MM Therms)		
1990	12,893	12,893	0.00%
2000	13,913	13,913	0.00%
2007	13,386	13,216	-1.27%
2010	13,616	12,992	-4.59%
2018	14,058	13,236	-5.85%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	0.76%	0.76%	
2000- 2007	-0.55%	-0.73%	
2007- 2010	0.57%	-0.57%	
2010- 2018	0.40%	0.23%	

Source: California Energy Commission, 2009

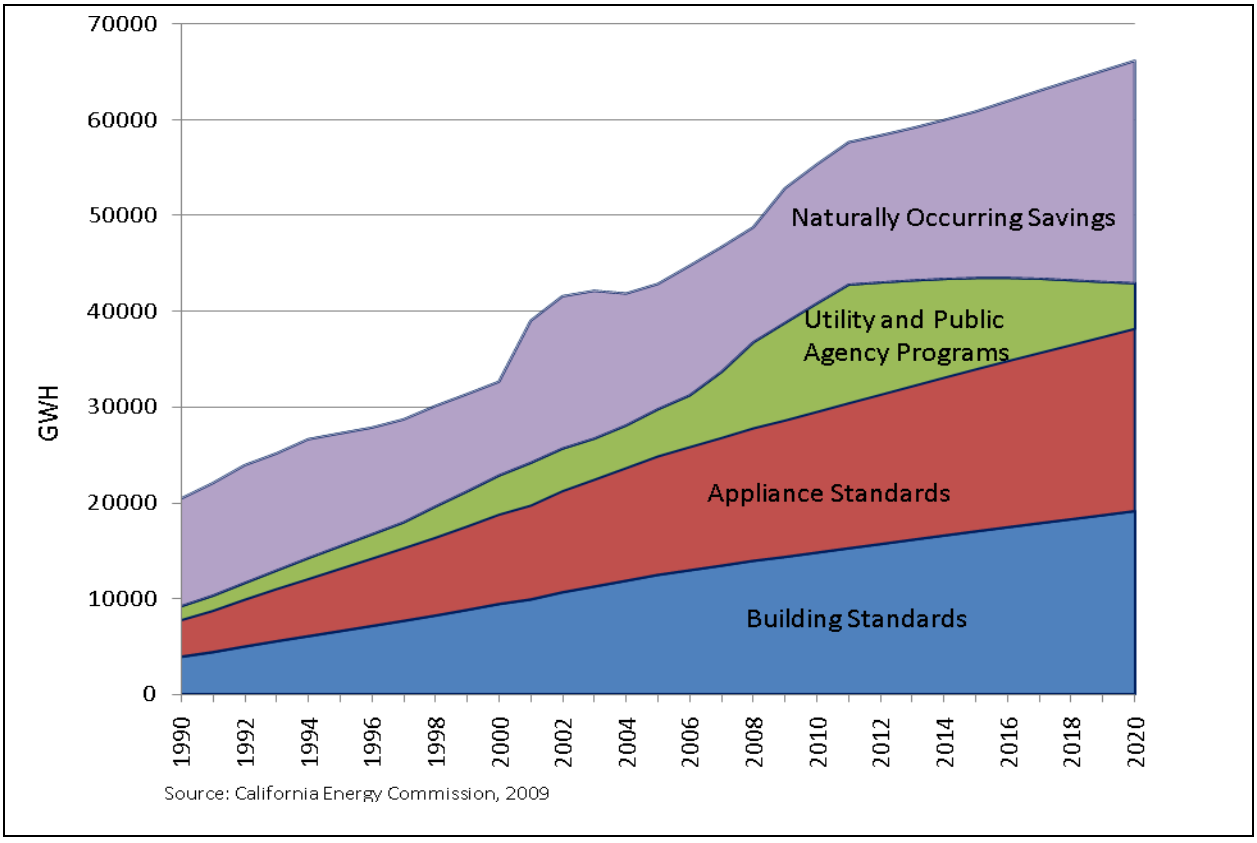
Conservation/Efficiency

With the state's adoption of the first *Energy Action Plan (EAP)* in 2003, energy efficiency became the resource of first choice for meeting the state's future energy needs. Assembly Bill 2021(Levine, Chapter 734, Statutes of 2006) set a statewide goal of reducing total forecasted electricity consumption by 10 percent over the next 10 years. Under AB 2021, the Energy Commission, in consultation with the California Public Utilities Commission (CPUC), is responsible for setting annual statewide efficiency targets in a public process using the most recent investor-owned and publicly owned utility targets. These targets, combined with California's greenhouse gas emission reduction goals, make it essential for the Energy

Commission to properly account for energy efficiency impacts when forecasting future electricity and natural gas demand.

Much time and effort was put into refining the staff's forecasting methods to account for energy efficiency and conservation impacts while preparing this forecast, particularly for utility efficiency programs. **Figure ES-3** shows electricity consumption savings estimates incorporated in the *CED 2009* for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and market trends not directly related to programs or standards.

Figure ES- 3: Efficiency/Conservation Consumption Savings by Source



CHAPTER 1: Statewide Forecast Results and Methods

Introduction

The *California Energy Demand 2010-2020 Staff Draft Forecast* (*CED 2009*), an Energy Commission staff report, presents forecasts of electricity and end-user natural gas consumption and peak electricity demand for California as a whole and for each major utility planning area within the state for 2010-2020. The *CED 2009* supports the analysis and recommendations in the *2007 Integrated Energy Policy Report (2007 IEPR)* and *2008 Integrated Energy Policy Report Update (2008 IEPR)*, including electricity and natural gas system assessments as well as analysis of progress towards increased energy efficiency. As a result of major staff effort to improve the measurement and attribution of efficiency impacts within the energy demand forecast, this report provides more detail on the impacts of energy efficiency programs and standards than has been the case in the past.

The Integrated Energy Policy Report Committee will conduct a workshop on June 26, 2009 to receive public comments on the *CED 2009*. Following the workshop, subject to the direction of the Committee, staff may prepare a revised forecast or range of forecasts for adoption by the Energy Commission.

The adopted forecast will be used in a number of applications, including the California Public Utilities Commission (CPUC) 2010 procurement process. The CPUC has identified the Integrated Energy Policy Report process as "the appropriate venue for considering issues of load forecasting, resource assessment, and scenario analyses, to determine the appropriate level and ranges of resource needs for load serving entities in California."[1] The final forecasts will also be an input to California Independent System Operator (California ISO) controlled grid studies and other transmission planning studies and in the *California Gas Report*[2] and electricity supply-demand assessments.

Summary of Changes to Forecast

The previous long run forecast, *California Energy Demand 2008-2018*[3] (*CED 2007*) was based on 2006 peak demand and energy. For the current forecast, staff added 2007 energy consumption data to the historic series used for forecasting. The peak demand forecast incorporates recent analysis of 2008 temperatures and peak demand at the planning area level.

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[1] California Public Utilities Commission. Assigned Commissioner's Ruling On Interaction Between The CPUC Long-Term Planning Process And The California Energy Commission Integrated Energy Policy Report Process, September 9, 2004 Rulemaking 04-04-003.

[2] The California Gas Report is prepared by California electric and gas utilities in compliance with California Public Utilities Commission Decision D.95-01-039.

[3] California Energy Commission. *California Energy Demand 2008–2018 Staff Revised Forecast,* November 2007,. CEC-200-2007-015-SF2.

In the residential sector, lighting was broken out as a separate end use for the first time to better capture the impacts of residential lighting efficiency programs. In the commercial sector, staff revised its estimates of existing floor space and projected new floor space using updated economic projections and a new econometric methodology. The economic projections used for this forecast result in lower projected floor space than was used in *CED 2007*. For self-generation, staff refined its methods to track various technologies and individual programs.

CED 2007 assumed constant electricity rates throughout the forecast period. For this forecast, three price scenarios were developed for electricity and natural gas rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010 for both electricity and natural gas, while the middle case assumed 15 percent and 10 percent higher rates for electricity and natural gas, respectively, over the same period. In the low-rate case, rates remained at 2010 levels through 2020. Three combinations of electricity and natural gas rates were input to the models: high rates for each, "mid" rates for each, and low rates for each.

The increased effort to capture the impacts of energy efficiency programs, along with including the expected effects of 2009-2011 utility programs, helped reduce forecasted energy demand in the investor-owned utility (IOU) service territories relative to *CED 2007*. Chapter 8 provides details on staff work related to efficiency program measurement and attribution for this forecast.

Statewide Forecast Results

Table 1-1 compares the *CED 2009* electricity forecast for select years with *CED 2007*, the forecast which was used in the *2007 IEPR*. The table shows results for the low-rate case scenario, which assumed no increase in rates from 2010-2020. This scenario is most directly comparable to the 2007 forecast, which assumed flat rates throughout the forecast period. Both the energy consumption and peak forecasts are lower than in the previous forecast over the entire forecast period, primarily due to worsening economic conditions. Projected electricity consumption is down by more than 9 percent and peak demand by almost 5 percent by 2018 compared to *CED 2007*. Electricity consumption is projected to grow at a rate of 0.8 percent per year from 2010-2018, versus 1.2 percent per year in *CED 2007*, while peak demand grows an average of 1.1 percent annually over the same period, compared to 1.3 percent in the previous forecast.

The historic data used for this forecast differs slightly from *CED 2007* because of revised data submitted by utilities, and because a detailed review of self-generation consumption data found some data had been misclassified.

Table 1-1: Comparison of CED 2007 and CED 2009 Statewide Electricity Demand

	Consumption (GWh)			Peak (MW)		
	2007 Forecast	Staff Draft (Low-Rate Case)	Percent Difference Staff Draft/2007 Forecast	2007 Forecast	Staff Draft (Low-Rate Case)	Percent Difference Staff Draft/2007 Forecast
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2007-2010	1. 37%	-0. 48%		1. 42%	-0. 09%	
2010-2018	1. 21%	0. 82%		1. 31%	1. 12%	
Historic values are shaded						
GWh=gigawatt-hour						
MW = megawatt						

Source: California Energy Commission, 2009

Annual Electricity Consumption

The staff draft statewide forecast of electricity consumption, shown in **Figure 1-1**, is lower than in the *CED 2007* forecast over the entire forecast period, beginning with a dip in 2008 and 2009, and thereafter rising at a lower rate than in the previous forecast. By 2018, projected consumption is more than 9 percent lower than the previous forecast. This difference reflects current economic conditions along with a lower rate of economic growth in the longer term. Economic conditions affect the forecast through lower personal income growth, lower employment, lower industrial output, and fewer additions to commercial floor space. Staff estimates that around 65 percent of the change in statewide consumption compared to *CED 2007* is from economic impacts in 2010, increasing to 80 percent by 2018. Economic inputs are discussed later in this chapter. Most of the remaining difference comes from increased efficiency program impacts assumed in this forecast, as discussed in Chapter 8.

Consistent with a much lower total consumption forecast, per capita electricity declines throughout the forecast period, as shown in **Figure 1-2**. By 2018, projected per capita consumption is reduced by more than 600 kWh compared to the previous forecast. This projected trend represents a departure from the past, although the historical data show that per capita consumption dropped from 2006 to 2007.

Figure 1-1: Statewide Annual Electricity Consumption
(CED 2009— Low-Rate Case)

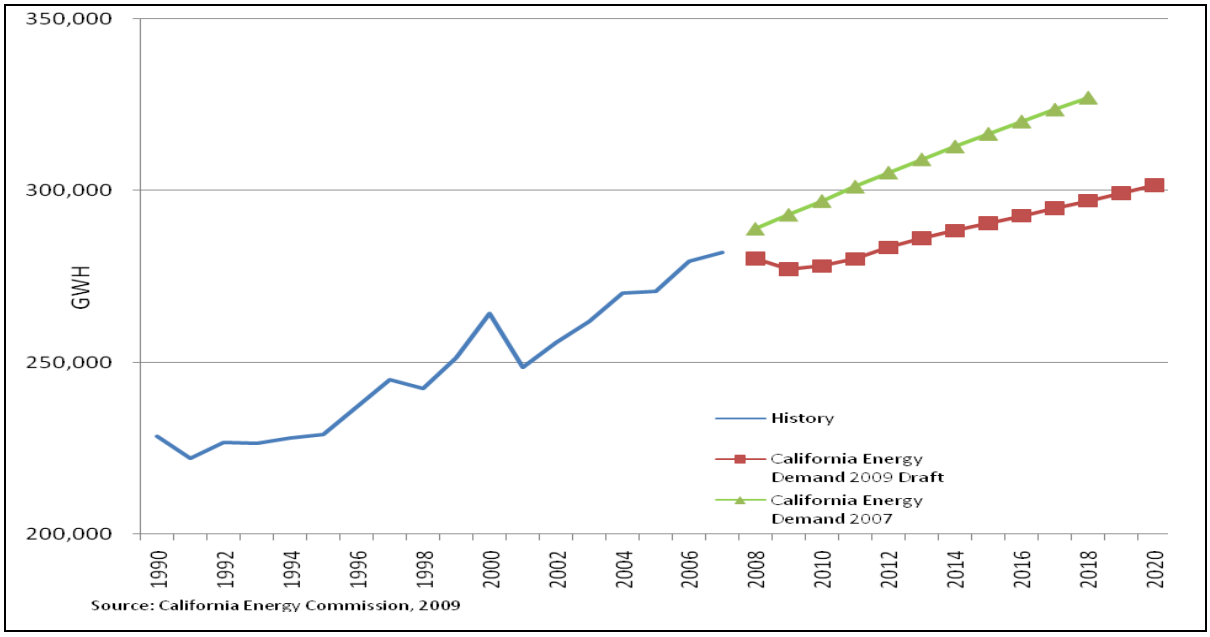


Figure 1-2: Statewide Annual Electricity per Capita
(CED 2009— Low-Rate Case)

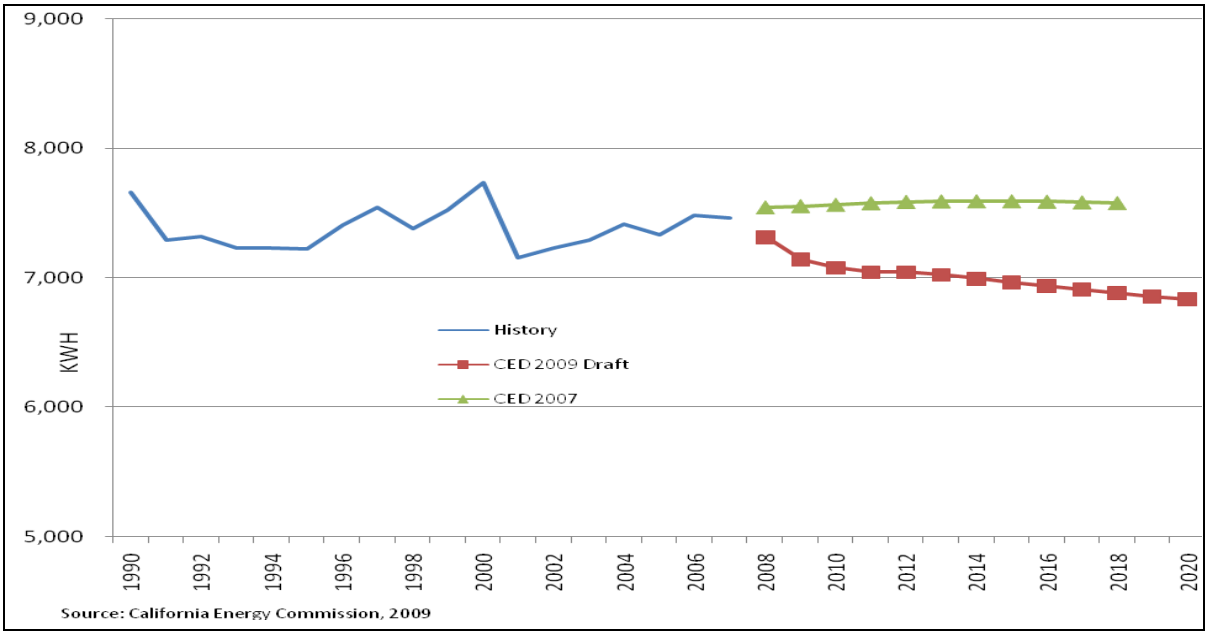


Figure 1-3 shows projected annual consumption by major economic sector, comparing the *CED 2009* low-rate case with *CED 2007*. The largest percentage reductions from *CED 2007* occur in the residential sector (-13.1 percent by 2018) and the commercial sector (-10.8 percent by 2018). In the residential case, the main driver for these reductions compared to the previous forecast is lower personal income per capita, which drops given significantly reduced projected personal income and slightly higher population projections. In the commercial case, reductions result from lower projections of floor space due to decreases in projected employment and commercial sector output. Industrial consumption compared to *CED 2007* decreases by a much lower percentage (-4. 2 percent by 2018), reflecting declines in industrial output projected in both forecasts. The only sector that increases compared to *CED 2007* is agricultural/water pumping (+4. 3 percent in 2018), which results from higher actual consumption in 2007 than the projected 2007 consumption used in the previous forecast.

Figure 1-4 shows projected total electricity consumption for the three rate scenarios. By 2020, under the high-rate scenario (rates 30 percent above those in 2010), projected electricity consumption is down by around 1.8 percent. In the mid-rate case (15 percent higher), projected consumption is reduced by slightly over one percent. The numbers correspond to an overall price elasticity for the models of around six percent.[4] The price response comes from the commercial, residential, and industrial sectors; the agricultural/water pumping and transportation, communications and utility and street lighting sectors are assumed to have a price elasticity of zero. Most of the response stems from the Commercial Model, with a much smaller effect for the Residential and Industrial Models. The estimated price response in the residential and industrial sectors may be conservative—staff plans to reexamine the impact of price on energy demand and consumption for the *2011 IEPR*.

To support sub-regional electricity system analysis, staff disaggregates the planning area forecasts to correspond to control areas and congestion zones. **Table 1-2** shows the forecast of energy required to meet demand by control area and congestion zone. Projections correspond to the mid-rate case; the numbers would be slightly higher or lower by one percent or less for the other scenarios. Compared with 2007, demand is projected to be down in all areas in 2010 with the exception of the Sacramento Municipal Utility District (SMUD) and Imperial Irrigation District (IID) control areas. After 2010, demand is expected to grow the fastest in the SMUD and IID control areas, reflecting strong population growth for SMUD and relatively high expected economic growth for IID. The slowest growth occurs in the Los Angeles Department of Water and Power (LADWP) control area because of relatively low projected economic growth in that area. In the California ISO control area, demand is projected to grow slightly faster in Southern California beyond 2010.

[4] Price elasticity is defined as percentage change in demand divided by percentage change in price and is a measure of how consumers react to a change in price..

Figure 1-3: Statewide Electricity Consumption by Sector (CED 2009— Low-Rate Case)

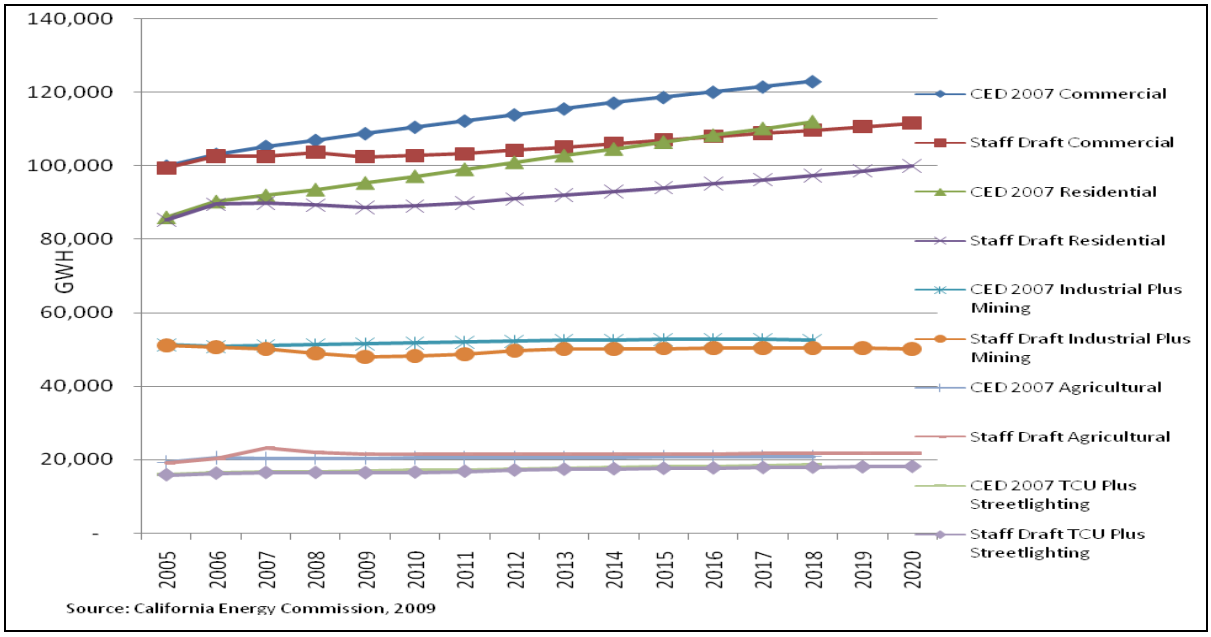


Figure 1-4: Annual Electricity Consumption by Rate Scenario

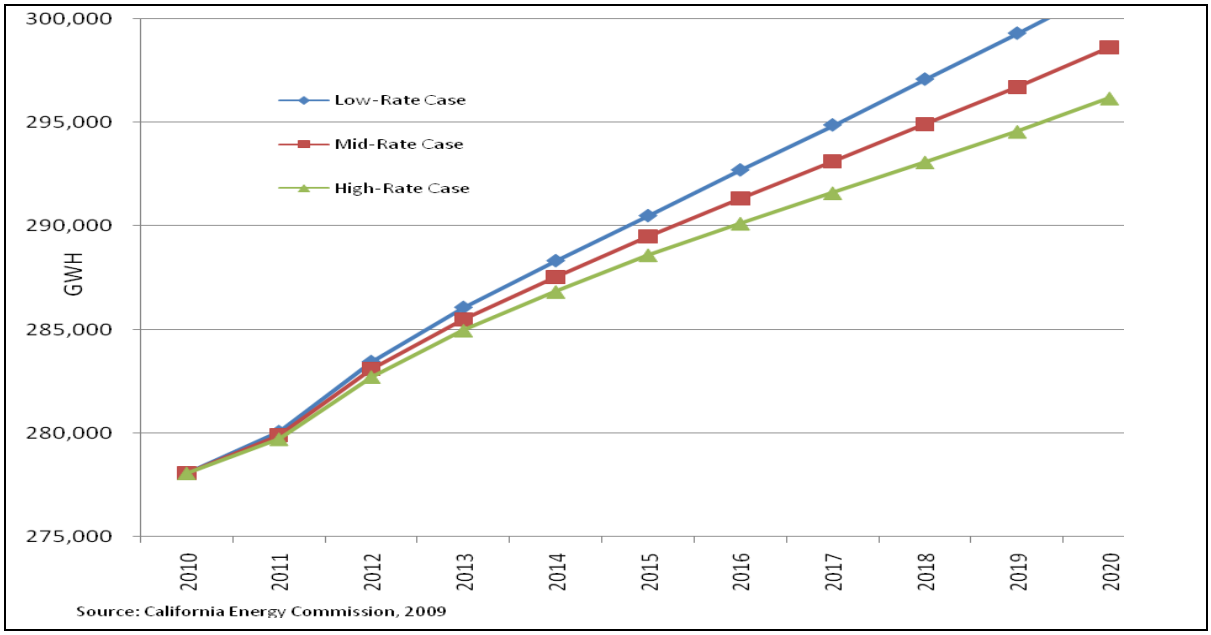


Table 1-2: Control Area Net Energy for Load (GWh)

	North of Path 15	South of Path 15	California ISO Total	SMUD	LADWP	Imperial Irrigation	Turlock Irrigation
2007	107,165	132,924	240,090	18,177	29,984	4,014	2,576
2010	105,218	129,744	234,961	18,260	29,277	4,065	2,521
2015	109,504	134,979	244,482	19,187	29,826	4,464	2,640
2020	112,871	139,791	252,662	19,887	29,967	4,888	2,720
	Annual Growth Rates						
2007-2010	-0. 61%	-0. 80%	-0. 72%	0. 15%	-0. 79%	0. 42%	-0. 72%
2010-2015	0. 80%	0. 79%	0. 80%	1. 00%	0. 37%	1. 89%	0. 92%
2010-2020	0. 70%	0. 75%	0. 73%	0. 85%	0. 23%	1. 86%	0. 76%

Source: California Energy Commission, 2009

Statewide Peak Demand

Figure 1-5 compares the draft forecast of statewide non-coincident[5] peak demand for the low-rate case with the *CED 2007* forecast. As with electricity consumption, current economic conditions have a major impact in the short term while long-term economic projections lead to a lower rate of growth beyond 2010. The projected statewide peak falls by 3.5 percent by 2010, declining further to 5.0 percent by 2018.

Figure 1-5 also shows the load factor for the state as a whole. The load factor represents the relationship between average energy demand and peak: the smaller the load factor, the greater the difference between peak and average hourly demand. The load factor varies with temperature; in extremely hot years (for example, 1998 and 2006) demand is "peakier." The general decline in the load factor over the last twenty years indicates a greater proportion of homes and businesses with central air conditioning. This trend is projected to continue over the forecast period. Energy efficiency measures, such as more efficient lighting, can also contribute to the declining load factor by reducing overall energy use while having an insignificant effect on peak demand.

The forecast of per capita non-coincident peak, shown in **Figure 1-6**, is projected to decrease over the forecast period from 1.64 kilowatts per person in 2008 to 1.58 kilowatts in 2020. As in the forecast for per capita consumption, economic conditions and energy efficiency impacts result in a marked reduction in projected per capita use relative to *CED 2007* at the beginning of the forecast period. Thereafter, the difference between the two forecasts becomes slightly more pronounced, as per capita peak declines slightly in the current forecast while rising in *CED 2007*.

[5] Non-coincident peak refers to the sum of the individual peak demands for each sector in an electrical system. These individual peaks often occur at different hours of the day.

Figure 1-5: Statewide Non-Coincident Peak Demand (Low-Rate Case)

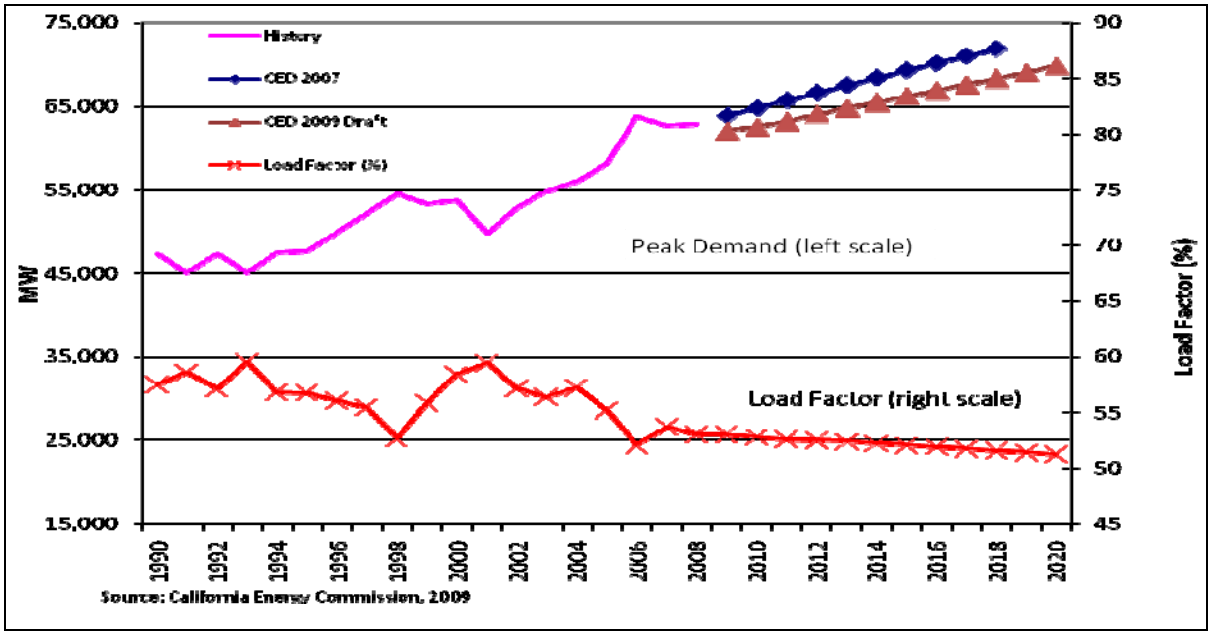


Figure 1-6: Statewide Non-Coincident Peak Demand per Capita (Low-Rate Case)

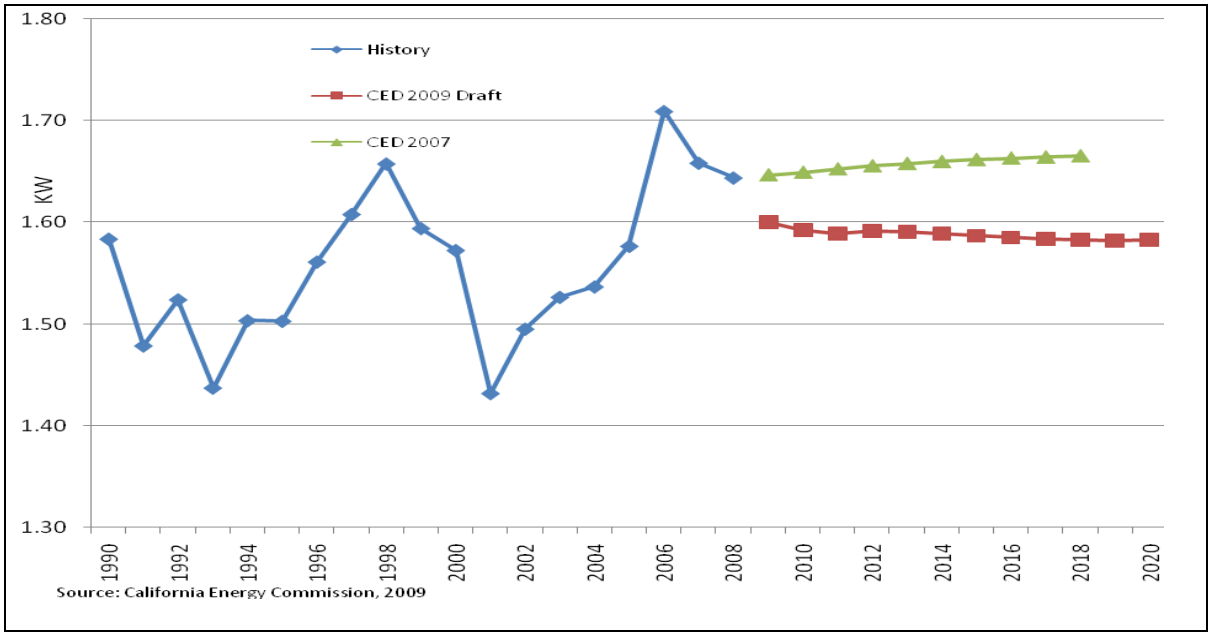


Figure 1-7 shows projected annual non-coincident peak demand for the three rate scenarios. The impact of the different rates on peak demand is similar to their projected effect on consumption. By 2020, under the high-rate scenario, the projected peak is down by around 1.7 percent. In the mid-rate case, projected peak demand is reduced by slightly less than one percent in the same year.

Figure 1-7: Statewide Non-Coincident Peak Demand by Rate Scenario

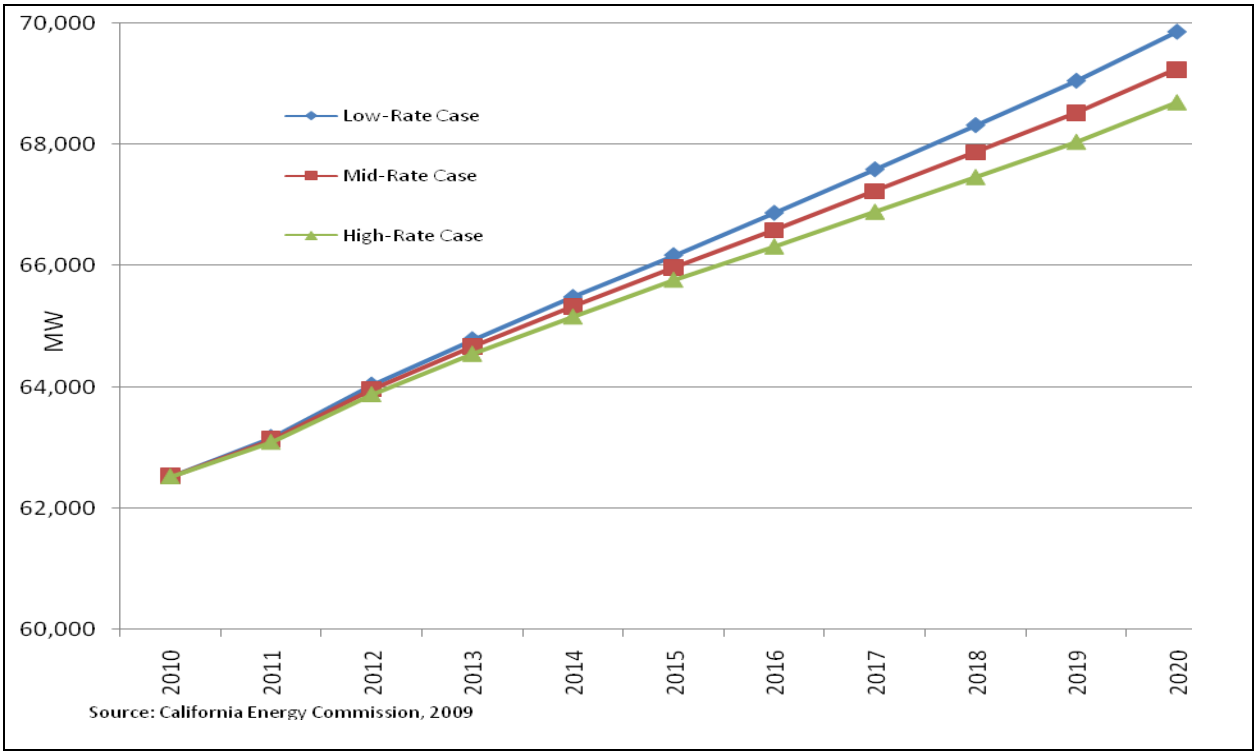


Figure 1-8 shows projected annual peak demand by the major economic sectors. As in the consumption forecast, the largest percentage reductions compared to *CED 2007* occur in the residential and commercial sectors (-5.5 percent and -8.0 percent by 2018, respectively). Projected industrial peak demand declines by around 2.8 percent in 2018 compared to the previous forecast. In all three cases, the drop in peak is less than the drop in consumption, a reflection of smaller reductions in cooling relative to other end uses. Projected agricultural/water pumping peak demand rises by 8.9 percent in 2018 compared to *CED 2007* because of significantly higher reported actual peaks in the final historical years (2007 and 2008) compared to peaks predicted in the previous forecast.

Figure 1-8: Statewide Peak Demand by Sector (Low-Rate Case)

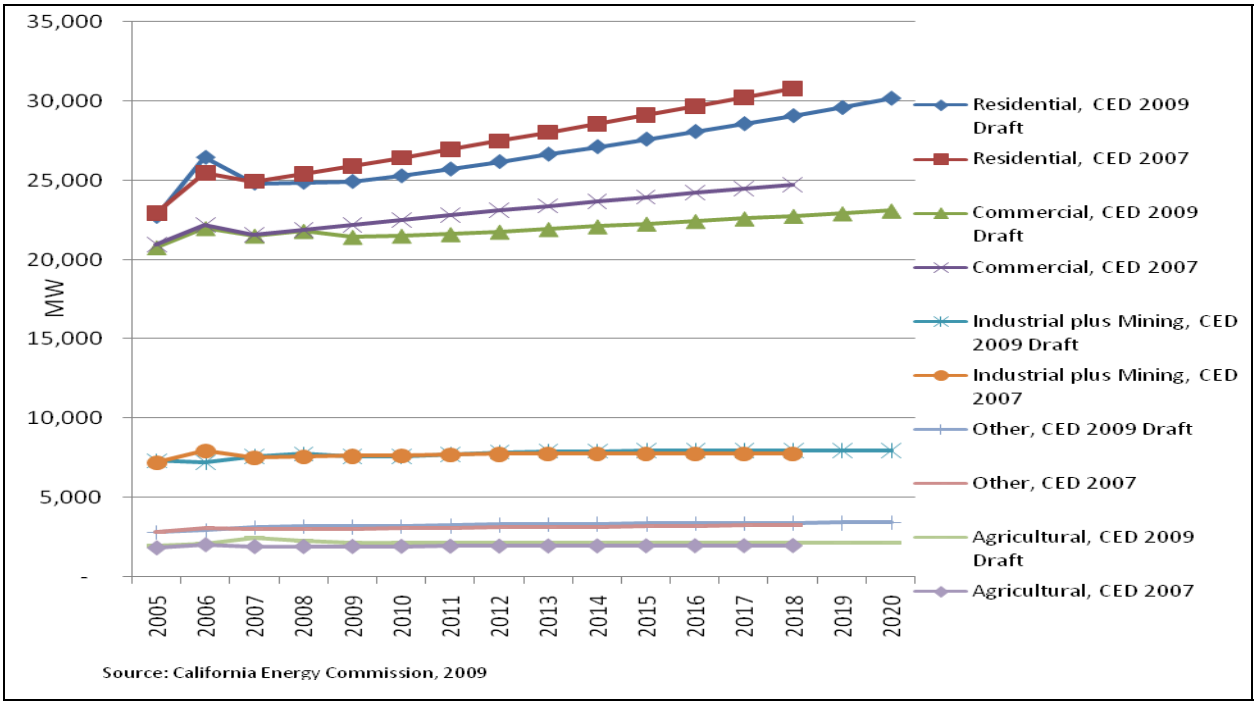


Table 1-3 shows peak demand by control area for the mid-rate scenario; the numbers would be higher or lower by one percent or less for the other scenarios. 2008 is the latest year for which staff had historical data on peaks, so the table begins with this year rather than 2007. Peak demand is up slightly in 2010 compared to 2008 in the Southern California portion of California ISO, IID, and the Turlock Irrigation District, and down in the other control areas. As with net energy, demand in the IID control area grows the fastest and LADWP the slowest beyond 2010, for the same reasons. Growth in peak demand is higher than growth for energy beyond 2010 because the trend toward increased air conditioning use is expected to continue.

Table 1-3: Annual Peak Demand (MW) By Control Area and Congestion Zone

	North of Path 15	South of Path 15	California ISO Coincident* Peak	SMUD	LADWP	Imperial Irrigation	Turlock Irrigation
2008	21,774	27,926	48,512	4,448	6,800	977	610
2010	21,618	27,980	48,412	4,434	6,466	994	615
2015	22,880	29,782	51,403	4,691	6,584	1,088	658
2020	24,051	31,453	54,177	4,917	6,655	1,190	687
	Annual Growth Rates						
2008-2010	-0. 36%	0. 10%	-0. 10%	-0. 16%	-2. 49%	0. 90%	0. 48%
2010-2015	1. 14%	1. 26%	1. 21%	1. 14%	0. 36%	1. 83%	1. 15%
2010-2020	1. 07%	1. 18%	1. 13%	1. 04%	0. 29%	1. 82%	1. 10%

Source: California Energy Commission, 2009

*Staff estimates coincident peak by applying an estimated factor (0. 9761) to non-coincident peak.

Natural Gas Demand Forecast

Table 1-4 compares the *CED 2009* natural gas forecast with the *CED 2007* forecast for selected years. This forecast does not include natural gas used for generating electricity. Staff developed three price scenarios for natural gas rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010, while the "mid" case assumed 10 percent higher rates over the same period. In the low case, rates remained at 2010 levels through 2020. For comparisons with the previous forecast, the high-rate case is used because rates in that scenario are most similar to rates used in *CED 2007*.

The draft forecast is lower in the near term (2010) given current economic conditions and because recorded 2007 consumption was lower than what was forecast for 2007 in *CED 2007*. In addition, longer-term growth declines relative to the previous forecast because of lower

projected economic growth for 2010-2018, with 2018 consumption projected to be almost six percent lower than in *CED 2007*.

Overview of Methods and Assumptions

Although the methods to estimate energy efficiency impacts, self-generation, and commercial floor space have been refined and residential lighting is now explicitly modeled, the staff draft forecast uses essentially the same methods as earlier long-term staff demand forecasts. The specific data sources and assumptions used for this forecast and any changes to methodology since *CED 2007* are described here. A more detailed discussion of forecast methods and data sources is available in the *Methods Report*. [6]

Table 1-4: Statewide End-User Natural Gas Consumption

	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
1990	12,893	12,893	0. 00%
2000	13,913	13,913	0. 00%
2007	13,386	13,216	-1. 27%
2010	13,616	12,992	-4. 59%
2018	14,058	13,236	-5. 85%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	0. 76%	0. 76%	
2000- 2007	-0. 55%	-0. 73%	
2007- 2010	0. 57%	-0. 57%	
2010- 2018	0. 40%	0. 23%	

Source: California Energy Commission, 2009

Models for the major economic sectors produce forecasts of annual energy consumption in each utility planning area. After adjusting for historic weather and usage, the annual consumption forecast is used to forecast annual peak demand.

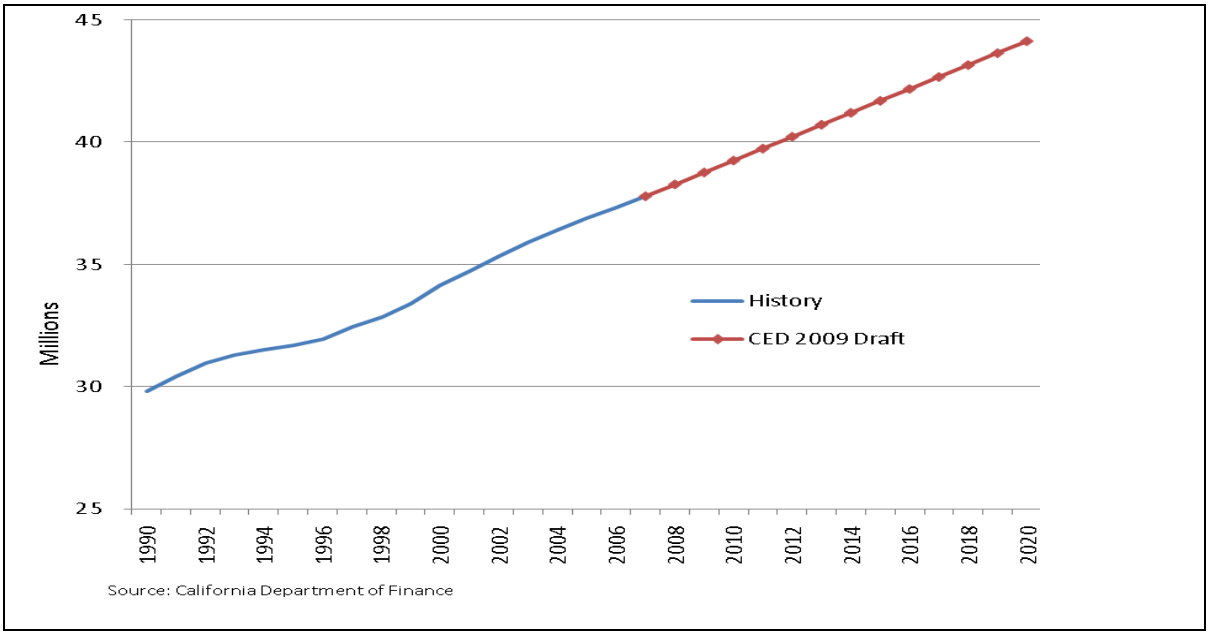
The commercial, residential, and industrial sector energy models are structural models that attempt to explain how energy is used by process and end-use. Structural models are critical to enable forecasts to account for the impacts of mandatory energy efficiency standards and other energy efficiency programs that seek to force or encourage adoption of more efficient technologies by end-users. The forecasts of agricultural and water pumping energy consumption are made using econometric methods, while projections for the street lighting and the transportation, communications, and utility sectors rely on trend analyses.

[6] California Energy Commission, *Energy Demand Forecast Methods Report,* CEC-400-2005-036, June, 2005.

Economic and Demographic Assumptions

Population growth is a key driver for residential energy demand and for commercial growth and demand for water pumping and other services. As in past forecasts, staff used the California Department of Finance's (DOF) most recent long-term population forecast, which has not been updated since the *CED 2007*. **Figure 1-9** shows the historic (through 2007) and forecasted population growth used in the *CED 2009*. Population is projected to grow at about 1.2 percent annually during the forecast period. For comparison, statewide population grew an average of 1.4 percent annually from 1990 to 2007. The declining growth rates over the forecast horizon reflect lower rates of fertility and immigration as the population of California and other regions age. Older age cohorts have a lower tendency to immigrate.[7]

Figure 1-9: Historic and Projected Total Statewide Population



[7] A "cohort" is a generational group as defined in demographics or statistics.

The main difference in reduced energy peak demand and consumption projections compared to the previous forecast comes from the economic outlook provided by Economy.com. The economic forecast reflects short-term economic impacts from the current recession, and also projects lower long-term rates of growth. These effects are indicated in **Figures 1-10** and **1-11**, which compare projected statewide real personal income and total non-agricultural employment projections used in this forecast with those used in *CED 2007*. The short-term impacts are clearly seen in both figures, as is less-favorable long-term growth. Projected average annual growth in personal income between 2010 and 2018 is 2.6 percent, down from 2.7 percent in *CED 2007*. Total employment increases at an annual rate of 0.9 percent over the same period, compared to 1.5 percent in the previous forecast.

Figure 1-10: Statewide Personal Income ($2007)

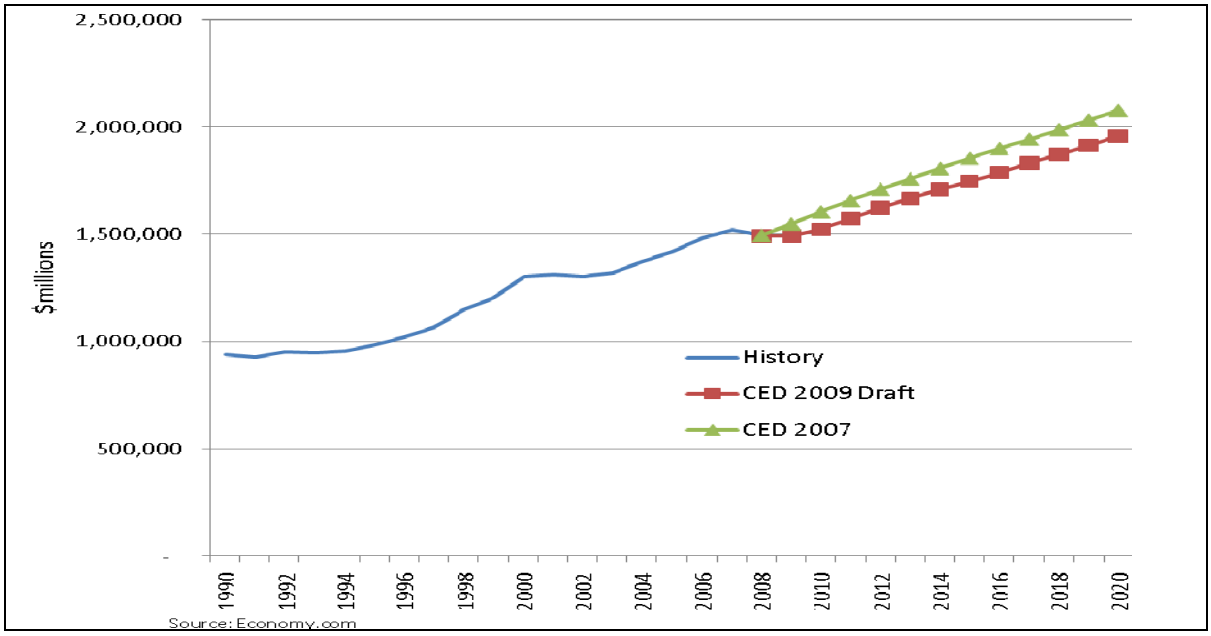
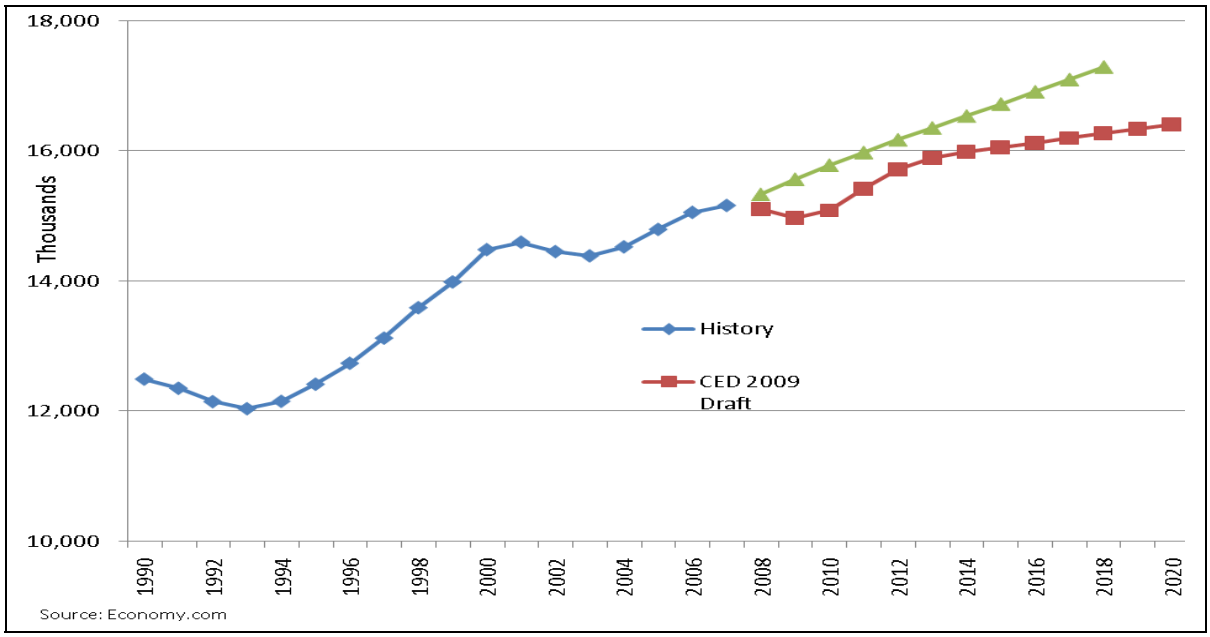


Figure 1-11: Statewide Total Non-Agricultural Employment



Electricity and Natural Gas Rate Projections

Three rate scenarios were developed for both electricity and natural gas rates: high rates, low (constant) rates, and a rate scenario in between the two. Three combinations of electricity and natural gas rates were used as inputs to the models: high rates for each, "mid" rates for each, and low rates for each. In the scenarios with increasing prices, rates were held constant between the last available historic year and 2010, and then allowed to grow until 2020. The high-rate case for electricity assumed 30 percent higher prices by 2020 relative to 2010, while the mid-rate case assumed 15 percent higher prices over the same period. The high-rate case for natural gas had prices 30 percent higher by 2020, matching the increase assumed in staff projections for the *2007 IEPR*,[8] and the mid case assumed 10 percent higher prices by 2020, equal to the rate of increase in the "base case" projections used for the scenario analyses undertaken for the *2007 IEPR*.[9] **Table 1-5** shows the increase in rates assumed over the first five and last five years of the forecast. Electricity rate projections assumed that most of the increase would occur in the last five years.

[8] These projections were not officially adopted for the *2007 IEPR*.

[9] *Scenario Analyses of California's Electricity System: Preliminary Results for the 2007 Integrated Energy Policy Report*, CEC-200-2007-010-SF, June 2007.

Table 1-5: Percentage Growth in Rates by Scenario and Fuel Type

	Electricity		Natural Gas	
Time Period	Mid-Rate Case	High-Rate Case	Mid-Rate Case	High-Rate Case
2010-2015	5. 0%	10. 0%	4. 9%	14. 2%
2015-2020	9. 5%	18. 2%	4. 9%	14. 2%

Source: California Energy Commission, 2009

Residential Lighting

Residential lighting was broken out as a separate end use to better capture the impacts of residential lighting efficiency programs. Functionally, this meant separating lighting from the "miscellaneous" end use in the Residential Model, estimating historic use of lighting per household, and projecting the use through 2020.

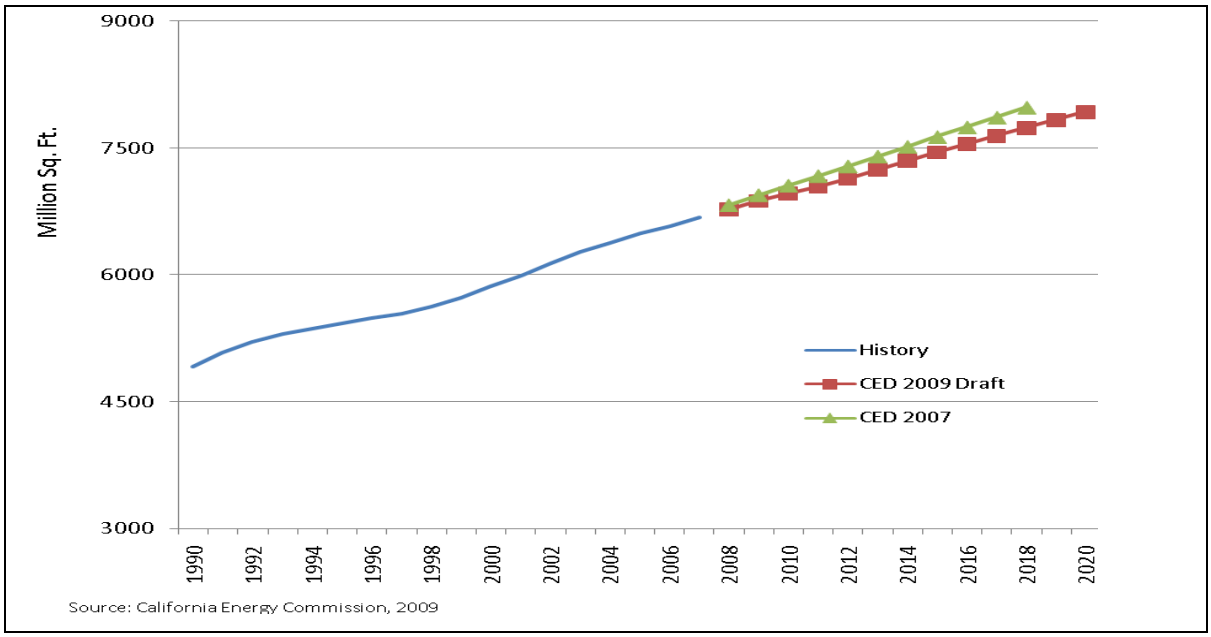
Historic estimates of lighting use per household through 2004 are based on values supplied by the consulting firm Itron along with various lighting studies. For the investor-owned utility (IOU) planning areas, reported energy savings and efficiency program plans were used to provide reductions to average lighting use relative to the 2004 estimates for 2005 – 2011. Details about average lighting input assumptions and the impact of residential lighting programs are provided in the Appendix.

Floor Space Forecast

Energy use in the commercial sector is modeled in terms of energy use per square foot for each of twelve different building types. A forecast of floor space in each county serves as the economic driver of demand trends. For the *CED 2009*, staff revised the econometric method for forecasting growth in floor space used in *CED 2007*. The new method forecasts additions rather than total floor space, using projected additions to create a forecast for total stock. The floor space methodology is further explained in the Appendix.

Figure 1-12 compares the resulting floor space projections used for this forecast with those used in *CED 2007*. Although the two sets of projections were derived from slightly different methodologies, the main reason for the difference in the two series is economic, a reflection of lower projected long-term growth in the commercial sector. Projected average annual growth between 2008 and 2018 is 1.34 percent, down from 1.57 percent in *CED 2007*.

Figure 1-12: Projected Growth in Commercial Floor Space Stock



Conservation/Efficiency Impacts

Energy Commission demand forecasts seek to account for all conservation that is "reasonably expected to occur." Since the 1985 *Electricity Report*, reasonably expected to occur conservation programs have been split into two types: committed and uncommitted. This demand forecast continues that distinction. Committed programs are defined as programs that have been implemented or for which funding has been approved. While conservation "reasonably expected to occur" includes both committed and uncommitted programs, only the effects of committed programs are included in the demand forecast. However, the Energy Commission models include naturally occurring or market-driven energy efficiency. Therefore, the forecasts include some impacts associated with the historic and ongoing levels of programs to the extent they represent impacts associated with replacement of aging building stock and equipment, or installation of new stock and equipment at efficiency levels that comply with current building and appliance standards. Uncommitted effects are thus defined as the incremental impacts of the level of future programs (for example, savings associated with new equipment that exceeds current standards, or early replacement of existing stock), impacts of new programs, and impacts from expansion of current programs.

Chapter 8 gives details regarding the committed energy efficiency impacts projected for this forecast. Staff will also provide a forecast of the impacts of uncommitted programs on energy demand after completing a revised demand forecast in August 2009.

Demand Response

The term "demand response" encompasses a variety of programs, including traditional direct control (interruptible) programs and new price-responsive demand programs. A key distinction is whether the program is dispatchable. Dispatchable programs, such as direct control, interruptible tariffs, or demand bidding programs, have triggering conditions that are not under the control of, and cannot be anticipated by, the customer. Energy or peak load saved from dispatchable programs is treated as a resource, and is therefore not accounted for in the demand forecast. Nondispatchable programs are not activated using a predetermined threshold condition but allow the customer to make the economic choice whether to modify usage in response to ongoing price signals. Impacts from committed nondispatchable programs should be included in the demand forecast.

At this time, all of the existing demand response programs have some form of triggering condition. Although the utility or California ISO may not have direct control, the customer only has the opportunity to participate in the program when the program operator has called an event, either because of high market prices or resource scarcity. Therefore, in this forecast, no demand response impacts are counted on the demand side.

Self-Generation

This forecast accounts for all the major programs designed to promote self-generation, building up from sales of individual systems. Incentive programs include:

- Emerging Renewables Program (ERP) - managed by the Energy Commission
- California Solar Initiative (CSI) - managed by the CPUC
- Self-Generation Incentive Program (SGIP) - managed by the CPUC
- New Solar Homes Partnership (NSHP) - managed by the Energy Commission
- Incentives administered by public utilities such as SMUD, LADWP, Burbank Water and Power, City of Glendale, City of Pasadena, and IID

The forecast also accounts for power plants that report information to the Energy Commission. The principal source of that information is Form CEC-1304, which must be submitted to the Energy Commission by owners of electric power plants located with California or within a control area with end users inside California. Staff only included power plants in the forecast that explicitly listed themselves as operating under cogeneration or self-generation mode.

The general strategy of the ERP, CSI, SGIP, and NSHP programs is to encourage demand for self-generation technologies with financial incentives until the size of the market increases to the point where economies of scale are achieved and capital costs decline. The extent to which consumers see real price declines will depend on the interplay of supplier expectations, the

future level of incentives, and demand as manifested by the number of states or countries offering subsidies.

The ERP and SGIP programs currently fund small wind turbines and fuel cells. Based on the availability of historical data, either a simple trend or the average rate of installations for the two last historical years (2006 and 2007) was used to project future capacity additions. For the CSI program, added future photovoltaic (PV) capacity was projected by taking the average capacity installed between 2007 and 2008. The NSHP projections used the average of the installed and pending PV additions from 2008 and 2009. These values are carried forward until 2016, when both the CSI and NSHP programs are scheduled to end. Capacity additions between 2017 and 2020 are derived by allowing the cumulative installed capacity to grow at the historic rate of electricity consumption for each sector. The difference in cumulative capacity between successive years is assumed to reflect new additions once the programs have ended. Assumptions about PV system performance were derived from the scenario analyses performed for the *2007 IEPR*. [10]

Capacity additions for programs administered by the public utilities were assumed to increase at the same rate as electricity growth by sector. For the large generators reporting under CEC 1304, cumulative capacity was assumed to remain constant at 2007 levels throughout the forecast period. Inspection of historical data revealed no trend upward or downward in installations. Since many of these plants sell electricity back to the grid, the effective plant generating capacity for projecting future onsite generation was derived by weighting overall plant capacity by the ratio of historical total electricity consumed by the plant to the overall electricity generated.

To translate self-generation capacity into effects on system peak demand requires assumptions about load shape, the coincidence of self-generation peak with system peak, and the extent to which self-generation units are operating during peak hours. Staff used the evaluation studies of the SGIP program for these assumptions.[11] For example, the 2004 study found that the load impact at the time of the 2004 California ISO peak was 58 MW out of 103 MW of installed capacity.

Table 1-6 shows the impacts of self-generation, which are projected to reduce peak load by almost 2,600 MW and consumption by more than 12,000 GWh in 2018. Consumption from self-generation is lower than in *CED 2007*, mainly due to historical data updates showing reductions in 2006 and 2007. The growth in consumption from 2007-2010 is higher than that projected in *CED 2007*, reflecting the large number of installations and pending installations in 2008 and 2009. Estimates of peak impacts are slightly higher than in the previous forecast, due to a greater penetration of PV systems, which have more impact during peak periods than other

[10] PV characteristics are described in Appendix E and G of *Scenario Analysis of California's Electricity System: Preliminary Results for the 2007 IEPR*, Draft Staff Report. Publication # CEC-200-2007-010-SD, June 2007.

[11] CPUC Self-Generation Incentive Program Fourth-Year Impact Report Final Report, ITRON, Submitted to Southern California Edison and The Self-Generation Incentive Program Working Group, April 15, 2005.

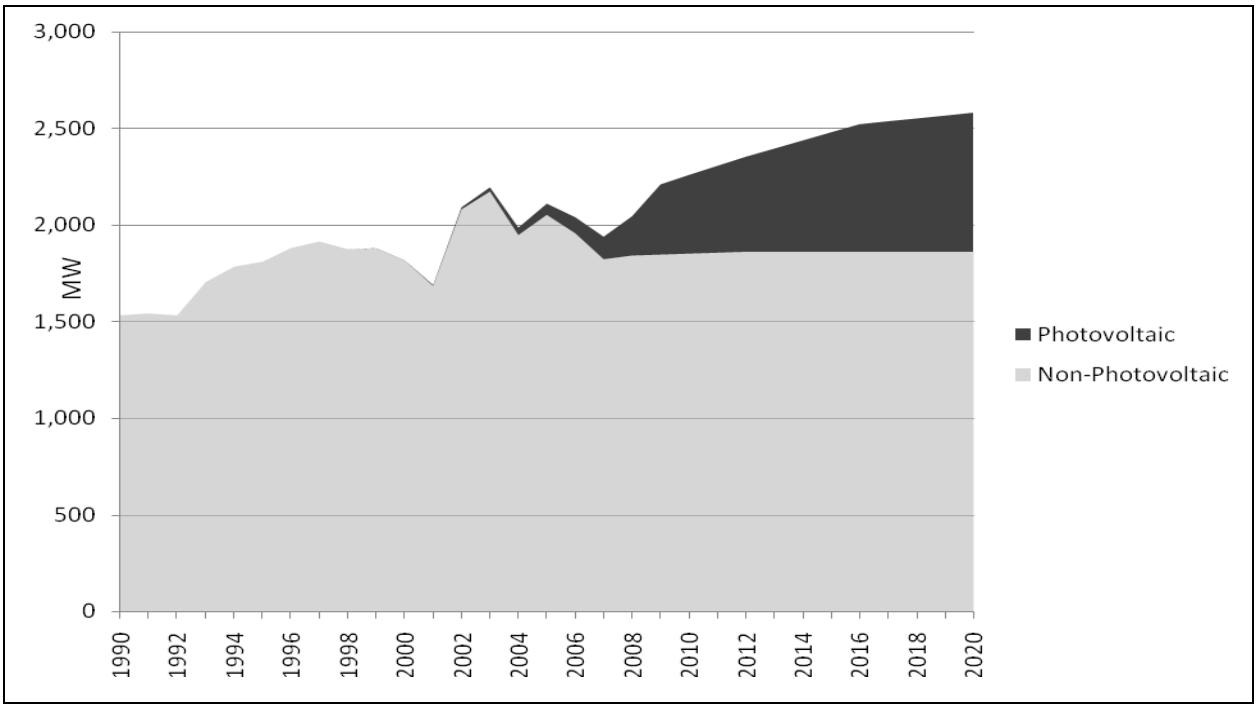
technologies. **Figure 1-13** shows the growing peak impact of PV systems relative to other technologies.

Table 1-6: Self-Generation Forecast

	Consumption (GWh)			Demand at System Peak (MW)		
	CED 2007	Staff Draft	Percent Difference	*CED 2007*	Staff Draft	Percent Difference
1990	9,132	9,132	--	1,488	1,533	3. 02%
2000	10,823	10,823	--	1,767	1,818	2. 89%
2007	11,305	10,153	-10. 19%	1,895	1,940	2. 37%
2010	11,880	11,395	-4. 08%	2,058	2,260	9. 82%
2015	12,839	12,226	-4. 77%	2,329	2,480	6. 48%
2018	13,414	12,455	-7. 15%	2,492	2,552	2. 41%
Annual Average Growth Rates						
1990-2000	1. 71%	1. 71%		1. 73%	1. 72%	
2000-2007	0. 62%	-0. 91%		1. 00%	0. 93%	
2007-2010	1. 67%	3. 92%		2. 79%	5. 22%	
2010-2018	1. 53%	1. 11%		2. 42%	1. 53%	
Historic values are shaded						

Source: California Energy Commission, 2009

Figure 1-13: Peak Impacts of PV and Non-PV Self-Generation



Source: California Energy Commission, 2009

These projections are consistent with current demand but may prove to be conservative. Staff is currently developing predictive models for some of the self-generation technologies based on estimated payback periods and cost-effectiveness, determined by up-front costs, energy rates, and incentive levels. The first model, near completion, is designed to project residential demand for PV systems. This model is based on one used by the Energy Information Administration as part of its National Energy Modeling System. Details of the model are provided in the Appendix. The model is still being tested by staff, but **Table 1-7** provides some preliminary simulation results for the Pacific Gas and Electric planning area that show the relationship between installed capacity in MW, electricity rates, and system price per kilowatt (kW).

The model simulations indicate that demand rises quickly as system price falls below $5,000, with percentage increases largest at lower electricity rates. These results are meant to be illustrative, but they do suggest the potential for significant increases in installed capacity as system prices drop. Currently, systems average a little more than $8,000/kW.[12]

Table 1-7: Residential Photovoltaic System Penetration* in MW by Electricity and System Price

	Electricity Rate (2007 $kWh)								
		$ 0. 08	$0. 10	$0. 12	$0. 14	$0. 16	$0. 18	$0. 20	$0. 22
Photovoltaic System Price (2007 $/kW)	$1,000	277	356	406	575	587	587	959	1076
	$3,000	20	63	104	124	139	176	206	260
	$5,000	4	6	18	48	67	84	98	108
	$7,000	3	3	5	6	18	42	58	72
	$9,000	3	3	3	4	5	6	20	40

Source: California Energy Commission, 2009

*Assumes a discount rate of 3 percent.

Historic Electricity Consumption Estimates

Energy Commission demand forecasting models are organized by sector according to economic activity: commercial, industrial, agricultural, and so on. Each of these models develops a forecast based on sub-activities within the sector (for example, commercial building type or industrial activity). Under the Energy Commission's Quarterly Fuel and Reporting (QFER) regulations, each load serving entity (LSE) is required to file monthly and annual reports that document energy consumption by activity group.

[12] From CSI program data available on PG&E's website: https://pge. Powerclerk. com /CSIProgramData. aspx.

The quality of the QFER data continues to be undermined by LSE data coding errors, lack of adherence to regulations by some LSE's, and failure to provide economic classification for some of the data. However, unclassified consumption has declined significantly in recent years. From a high of almost 20,000 GWh in 2003, unclassified energy use dropped to less than 8,000 GWh in 2007 as economic classification is now provided for direct access customers, per current reporting requirements. Staff allocated unclassified consumption to economic sectors using professional judgment, relying on such factors as apparently unrealistic changes in historic consumption in a given sector.

Demand Forecast Disaggregation

Many uses for demand forecasts require more disaggregation than the planning area forecasts presented in the following chapters. For example, electricity system analysis requires identification of load by congestion zone or load pocket; evaluation of progress towards renewable energy goals requires sales data by individual LSEs; development of energy efficiency goals requires projections of per capita sales by LSEs; and controlled grid studies require forecasts for each LSE, sometimes with geographic subdivisions. The statewide tables following this chapter include forecast disaggregations developed by staff to support some of these applications.

Structure of Report

Chapters 2-6 provide *CED 2009* electricity forecasts for the following planning areas: Pacific Gas and Electric, Southern California Edison, San Diego Gas and Electric, SMUD, and LADWP, in that order. All of the planning areas included in this forecast are described in **Table 1-8**. Chapter 7 provides more statewide results from the end-user natural gas forecast, along with results for the Pacific Gas and Electric, Southern California Gas, and San Diego Gas and Electric distribution areas. Chapter 8 describes recent staff work focused on refining and improving methods to incorporate energy efficiency and conservation savings within the forecast, and presents staff estimates of the impacts resulting from utility efficiency programs, building and appliance standards, and other conservation-related factors.

Table 1-8: Utilities within Forecasting Areas

Planning Area	Utilities Included	
Electric Areas		
Pacific Gas and Electric (PG&E)	PG&E	Plumas – Sierra
	Alameda	Port of Stockton
	Biggs	PWRPA
	Calaveras	Redding
	Gridley	Roseville
	Healdsburg	San Francisco
	Lassen MUD	Shasta
	Lodi	Silicon Valley
	Lompoc	Tuolumne
	Merced	Turlock Irrigation District
	Modesto	Ukiah
	Palo Alto	USBR-CVP
Sacramento Municipal Utility District (SMUD)	SMUD	
Southern California Edison (SCE)	Anaheim	Ranch Cucamonga
	Anza	Riverside
	Azusa	Southern California Edison
	Banning	USBR-Parker Davis
	Bear Valley	Valley Electric
	Colton	Vernon
	MWD	Victorville
Los Angeles Department of Water and Power (LADWP)	LADWP	
San Diego Gas and Electric (SDG&E)	SDG&E	
Cities of Burbank and Glendale (BUGL)	Burbank,Glendale	
Pasadena (PASD)	Pasadena	
Imperial (IID)	Imperial Irrigation District	
Department of Water Resources (DWR)	DWR	
Natural Gas Distribution Areas		
PG&E	PG&E Electric Planning Area, SMUD	
SDG&E	SDG&E	
Southern California Gas Company (SCG)	SCG, Long Beach	
OTHER	Avista Energy, Southwest Gas Corporation	

Source: California Energy Commission, 2009

CHAPTER 2: Pacific Gas and Electric Planning Area

The Pacific Gas and Electric (PG&E) planning area includes:

- PG&E bundled retail customers.[13]
- Customers served by energy service providers (ESPs) using the PG&E distribution system to deliver electricity to end users.
- Customers of publicly owned utilities and irrigation districts in PG&E's transmission system, with the exception of the Sacramento Municipal Utility District (SMUD).[14] SMUD is treated as its own planning area and is discussed in a later chapter.

For purposes of this chapter, the PG&E planning area forecast includes the members of the SMUD control area (Roseville, Redding, and Western Area Power Administration [WAPA]). To support electricity and transmission system analysis, staff uses historic consumption and load data to develop individual forecasts for all medium and large utilities in the planning area. Those results are presented in Forms 1.5a and 1.5b in the Appendix. The results in this chapter are for the entire PG&E transmission planning area.

This chapter is organized as follows. First, forecasted consumption and peak loads for the PG&E planning area are discussed; both total and per capita values are presented. The proposed *CED 2009* values are compared to the adopted *CED 2007* forecast, with differences between the two forecasts explained. The forecasted load factor, jointly determined by the consumption and peak load estimates, is also discussed. Second, the chapter presents sector consumption and peak load forecasts. The residential, commercial, industrial, and "other" sector forecasts are compared to those in *CED 2007* and differences between the two are discussed. Third, the chapter discusses the forecasts self generation and impacts of conservation and efficiency programs.

[13] Bundled customers receive electric generation, transmission, distribution, and related customer service and support functions as a combined service.

[14] The public utilities in the PG&E planning area are Calaveras Public Power Agency; Central Valley Project; Cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, San Francisco, and Ukiah; Lassen Municipal Utility District; Merced Irrigation District; Modesto Irrigation District; Plumas-Sierra Rural Electric Cooperation; Shasta Dam Area Public Utility District; Silicon Valley Power; Tuolumne County PPA; and Turlock Irrigation District.

Planning Area Results

Table 2-1 compares the *CED 2009* high- and low-rate scenarios and *CED 2007* electricity consumption and peak demand forecasts for selected years.

Table 2-1: PG&E Planning Area Forecast Comparison

Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	86,803	86,803	86,803	0.00%	0.00%
2000	101,331	101,331	101,331	0.00%	0.00%
2007	106,311	107,529	107,529	1.15%	1.15%
2010	110,503	106,240	106,240	-3.86%	-3.86%
2015	117,806	111,254	110,588	-5.56%	-6.13%
2018	121,873	113,732	112,414	-6.68%	-7.76%
Average Annual Growth Rates					
1990-2000	1.56%	1.56%	1.56%		
2000-2007	0.69%	1.19%	1.19%		
2007-2010	1.30%	-0.40%	-0.40%		
2010-2018	1.23%	0.86%	0.71%		
Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	17,055	17,043	17,043	-0.07%	-0.07%
2000	20,716	20,665	20,665	-0.25%	-0.25%
2007	23,114	22,836	22,836	-1.20%	-1.20%
2010	24,050	23,240	23,240	-3.37%	-3.37%
2015	25,760	24,676	24,550	-4.21%	-4.70%
2018	26,754	25,488	25,233	-4.73%	-5.69%
Average Annual Growth Rates					
1990-2000	1.96%	1.95%	1.95%		
2000-2007	2.21%	2.02%	2.02%		
2007-2010	1.33%	0.59%	0.59%		
2010-2018	1.34%	1.16%	1.03%		
Historic values are shaded					

Source: California Energy Commission, 2009

In the PG&E planning area, the *CED 2009* forecasts for both price scenarios are much lower than the *CED 2007* forecast. This is caused by lower economic and demographic forecasts as well as increased projections of savings from efficiency programs. In the near term, both *CED 2009* consumption forecasts are nearly 4 percent lower than the *CED 2007* forecast. By the end of the

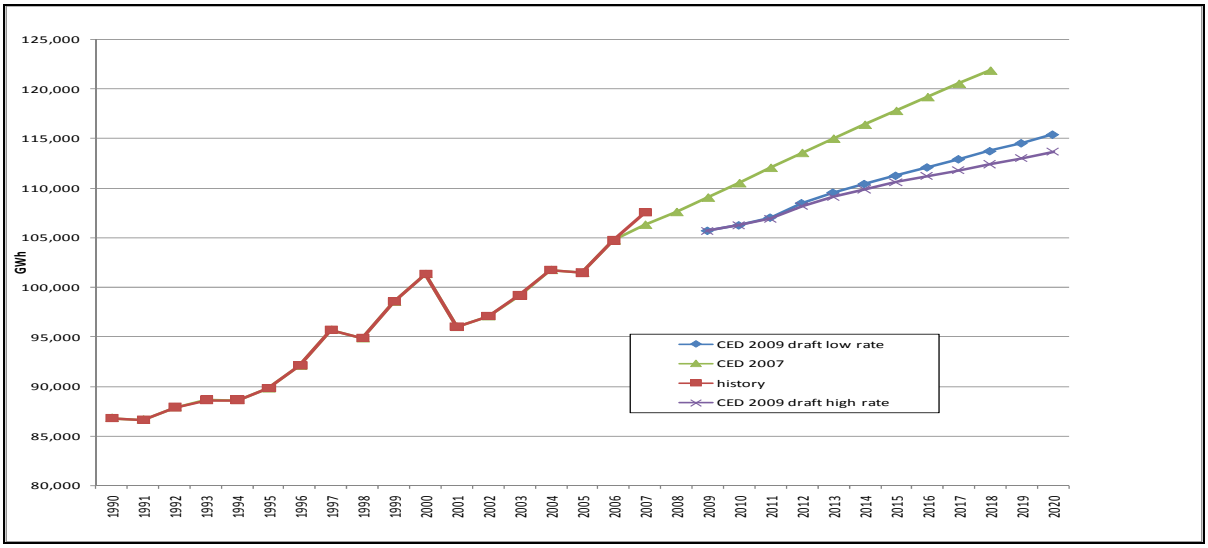
forecast period the *CED 2009* low-rate forecast is 6.7 percent lower than the *CED 2007* forecast while the *CED 2009* high-rate forecast is 7.8 percent lower.

CED 2007 assumed constant electricity rates throughout the forecast period. For this forecast, three price scenarios were developed for electricity rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010, while the "mid-rate" case assumed 15 percent higher rates over the same period. In the low-rate case, rates remained at 2010 levels through 2020. Chapter 1 provides more details.

The difference in peak forecasts is not as great with the near term *CED 2009* peak forecast being 3 percent lower than the *CED 2007* forecast in the near term. This difference increases to more than 4.7 percent for the low-rate forecast and about 5.7 percent for the high-rate forecast by the end of the forecast period. The smaller reduction in peak forecasts compared to consumption forecasts is caused by greater reduction in energy uses which have little impact on peak (i.e., residential lighting).

As shown in **Figure 2-1**, the *CED 2009* electricity consumption forecast for the PG&E planning area is lower over the entire forecast period than the adopted *CED 2007* forecast. This result is attributed to lower economic forecasts and increased savings from efficiency programs.

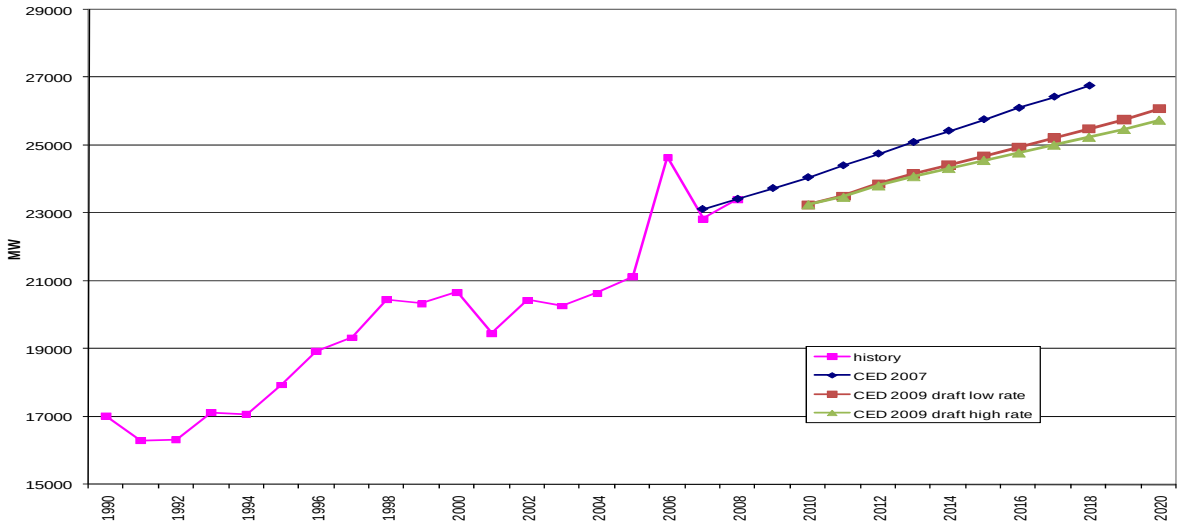
Figure 2-1: PG&E Planning Area Electricity Forecast



Source: California Energy Commission, 2009

The *CED 2009* PG&E planning area peak demand forecasts, shown in **Figure 2-2**, are also lower over the entire forecast period than the *CED 2007* forecast. The decrease in the peak demand forecasts is somewhat less than the corresponding energy forecast because most of the energy reductions come from areas that do not have as large of an impact on peak demand.

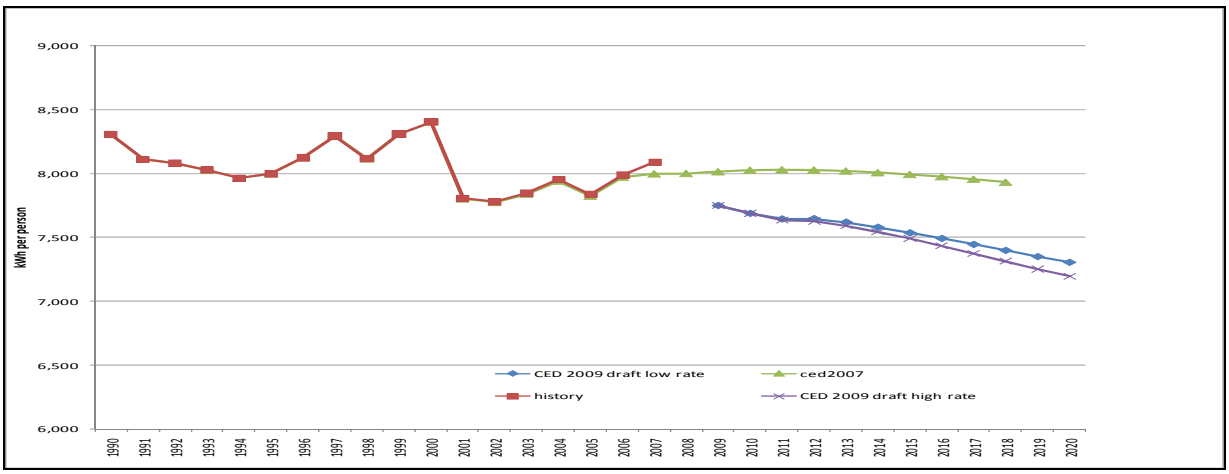
Figure 2-2: PG&E Planning Area Peak



Source: California Energy Commission, 2009

Figure 2-3 compares PG&E planning area per capita electricity consumption in the *CED 2009* and *CED 2007* forecasts. Similar to the consumption forecasts, there is a reduction in near-term levels caused by lower economic and demographic projections as well as near term increases in efficiency program savings. This reduction also continues throughout the forecast period causing a projected decline in per capita electricity use over the entire forecast.

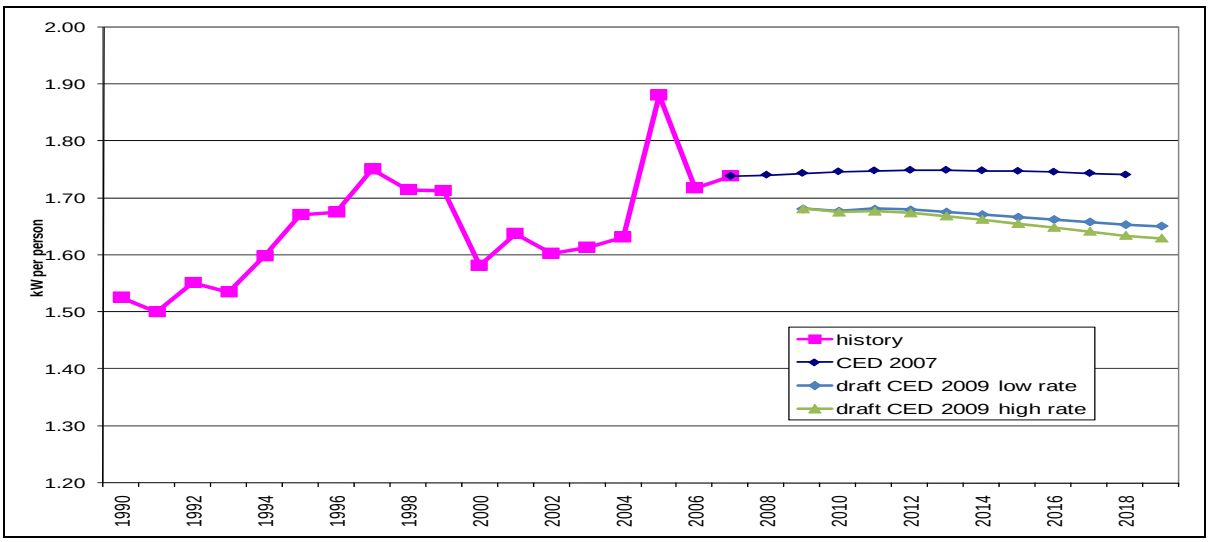
Figure 2-3: PG&E Planning Area Per Capita Electricity Consumption



Source: California Energy Commission, 2009

Per capita peak demand, shown in **Figure 2-4**, declines only slightly over the forecast period. The *CED 2009* projected levels of per capita peak are estimated to be at a level similar to the mid-to late-1990s, prior to the energy crisis.

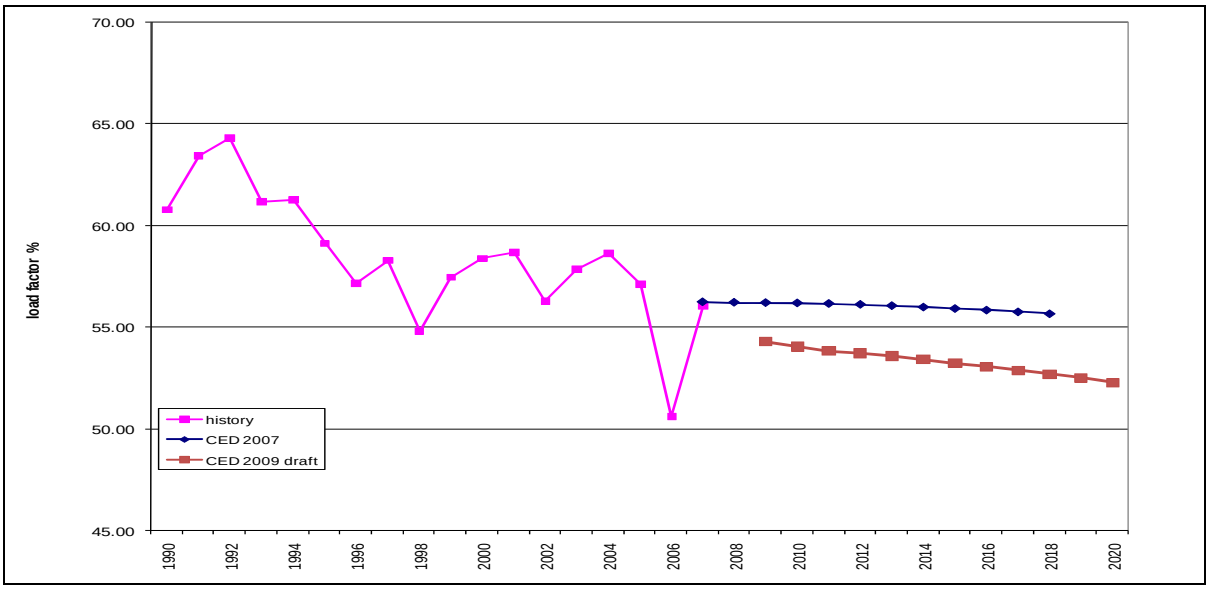
Figure 2-4: PG&E Planning Area per Capita Peak Demand



Source: California Energy Commission, 2009

Figure 2-5 compares the respective implied forecast load factors. The load factor is a measure of the increase in peak demand relative to annual electricity consumption. Lower load factors indicate "a needle peak"; higher load factors indicate a more stable load. Actual data show a long-term downward trend as consumption shifts away from the industrial sector toward residential and commercial use. Further, more population and economic growth in the PG&E planning area is taking place in hotter inland areas, leading to greater saturation of central air conditioning and to a greater use of air conditioning equipment in the cooler Bay Area on the peak day compared to previous historic years. The *CED 2009* projected load factors continue to decline over the forecast period because of greater reductions in the energy consumption forecast compared to the peak forecast.

Figure 2-5: PG&E Planning Area Load Factor



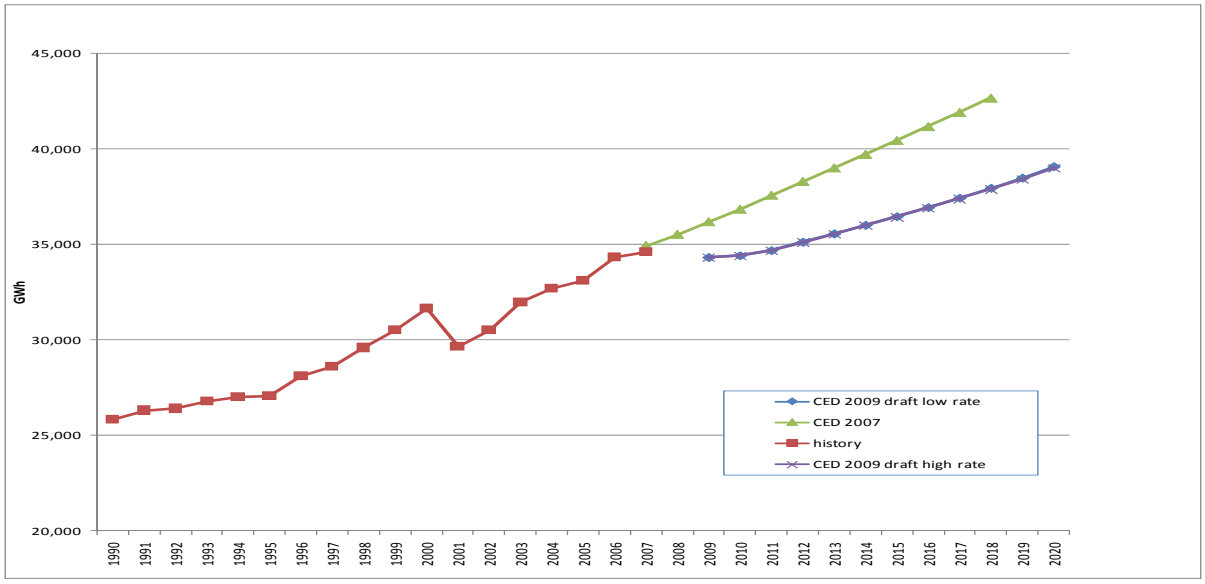
Source: California Energy Commission, 2009

Sector Level Results and Input Assumptions

Residential Sector

Figure 2-6 compares between the *CED 2009* and *CED 2007* PG&E planning area residential forecasts. The *CED 2009* forecast is lower throughout the entire forecast period mainly because of lower projections of personal income and increased savings assumptions from efficiency programs and standards. There is little difference between the low and high-rate cases in the residential forecast because of the relatively inelastic nature of residential consumption.

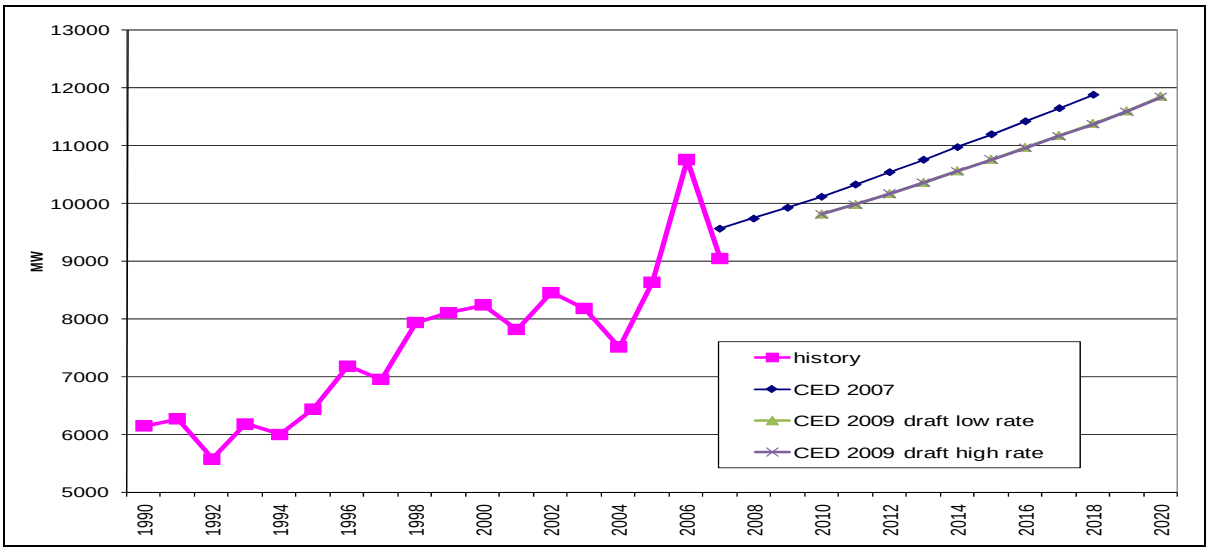
Figure 2-6: PG&E Planning Area Residential Consumption



Source: California Energy Commission, 2009

Figure 2-7 compares the *CED 2009* and *CED 2007* residential peak demand forecasts. As in the electricity consumption forecast, the *CED 2009* residential peak forecast is lower than that for *CED 2007*. The difference between the two peak forecasts is less than the difference in the electricity consumption forecasts because most of the consumption reductions come from measures that are not peak related (i.e., lighting and miscellaneous). Also the savings from 2005 federal air conditioner standards are assumed to have a greater impact on annual electricity consumption than on peak.

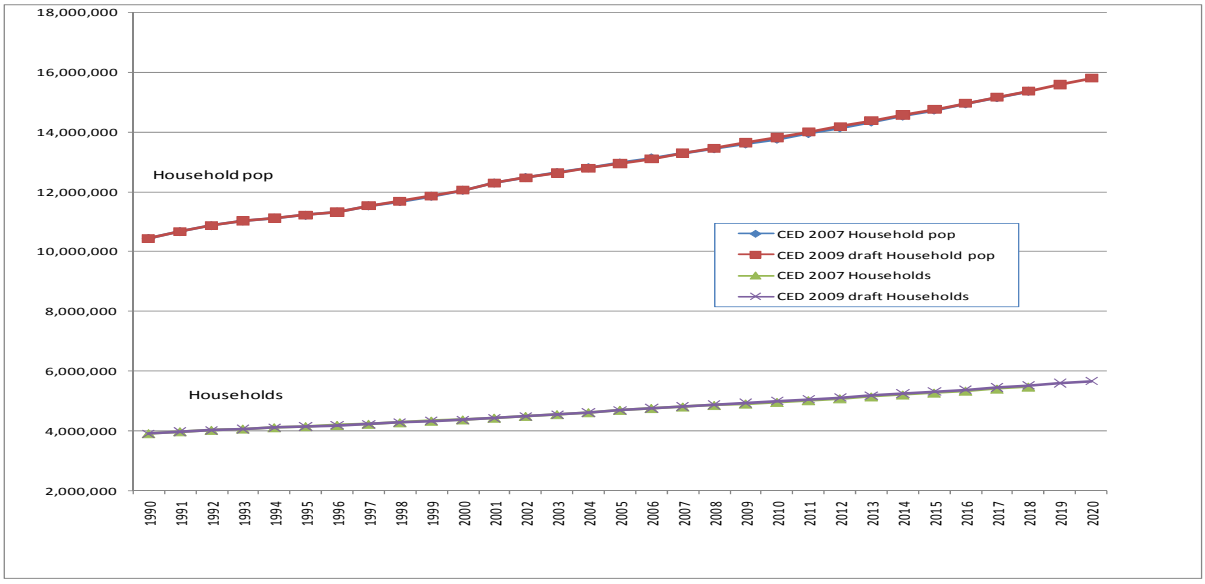
Figure 2-7: PG&E Planning Area Residential Peak



Source: California Energy Commission, 2009

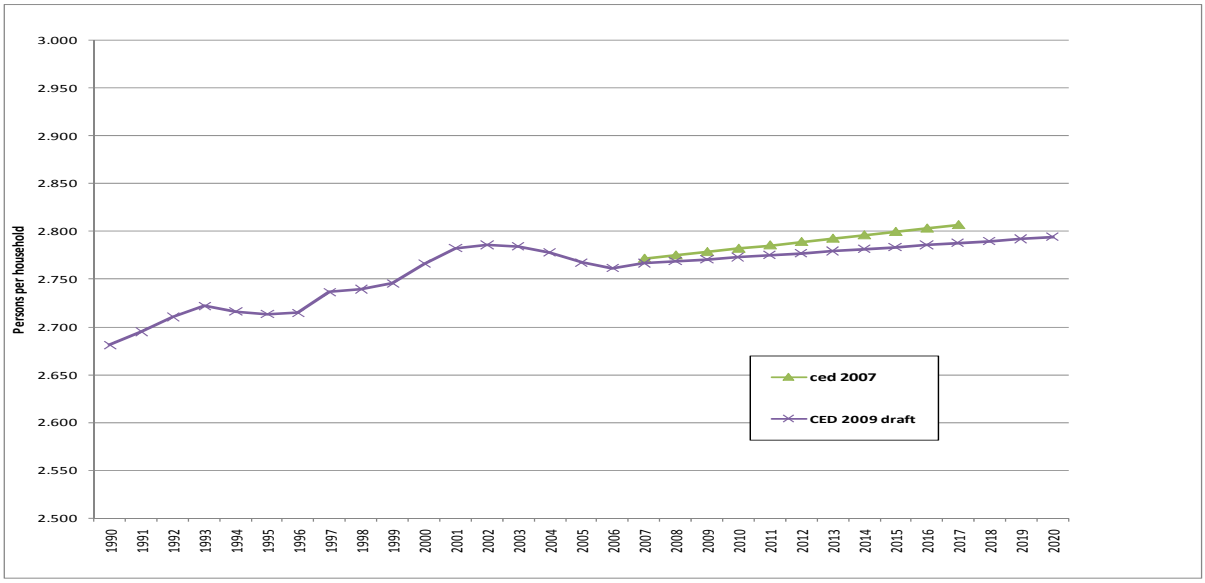
Figures 2-8, 2-9 and **2-10** compare the residential drivers used in the *CED 2009* forecast with those used previously. **Figure 2-8** provides comparisons of household population and total households. The *CED 2009* forecast of total population and households is virtually the same as the previous forecast. There is a slight difference, given the inclusion of 2007 historic population and household estimates at the county level. This served to lower the projection of persons per household slightly as shown in **Figure 2-9**. The California Department of Finance has recently released updated population and household estimates for 2008 which will be included in the staff revised forecast due out later this summer. **Figure 2-10** compares household income (per capita income multiplied by persons per household) between the two forecasts. The *CED 2009* estimate of household income is higher in recent history than the previous forecast but the near term forecast is much lower than that projected in the *CED 2007* forecast. This lower projection continues throughout the entire forecast period.

Figure 2-8: PG&E Planning Area Residential Demographic Projections



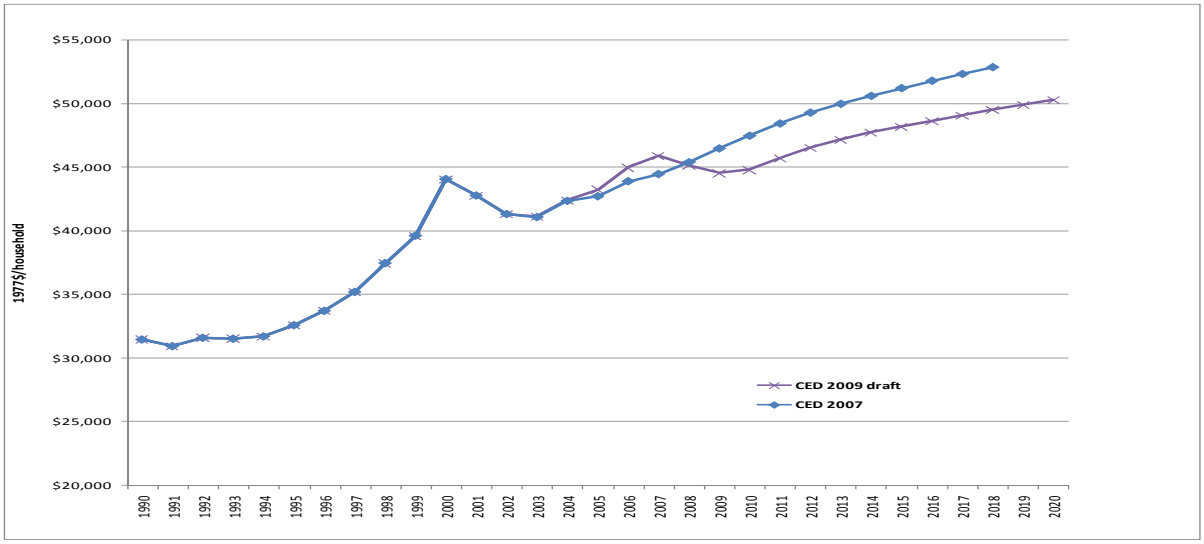
Source: California Energy Commission, 2009

Figure 2-9: PG&E Planning Area Persons per Household Projections



Source: California Energy Commission, 2009

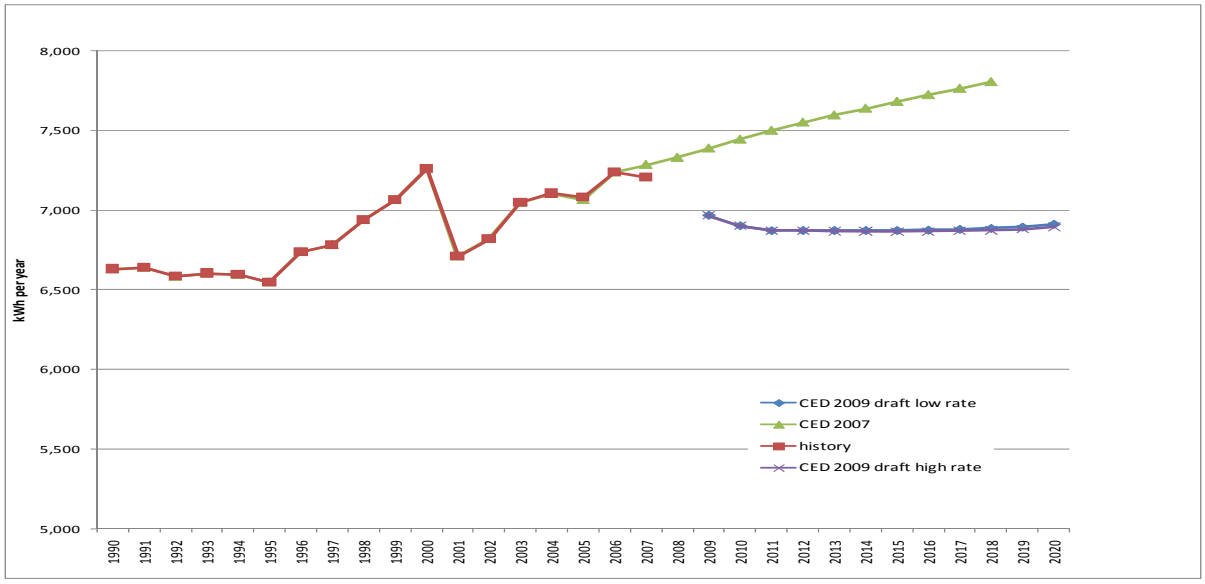
Figure 2-10: PG&E Planning Area Household Income Projections



Source: California Energy Commission, 2009

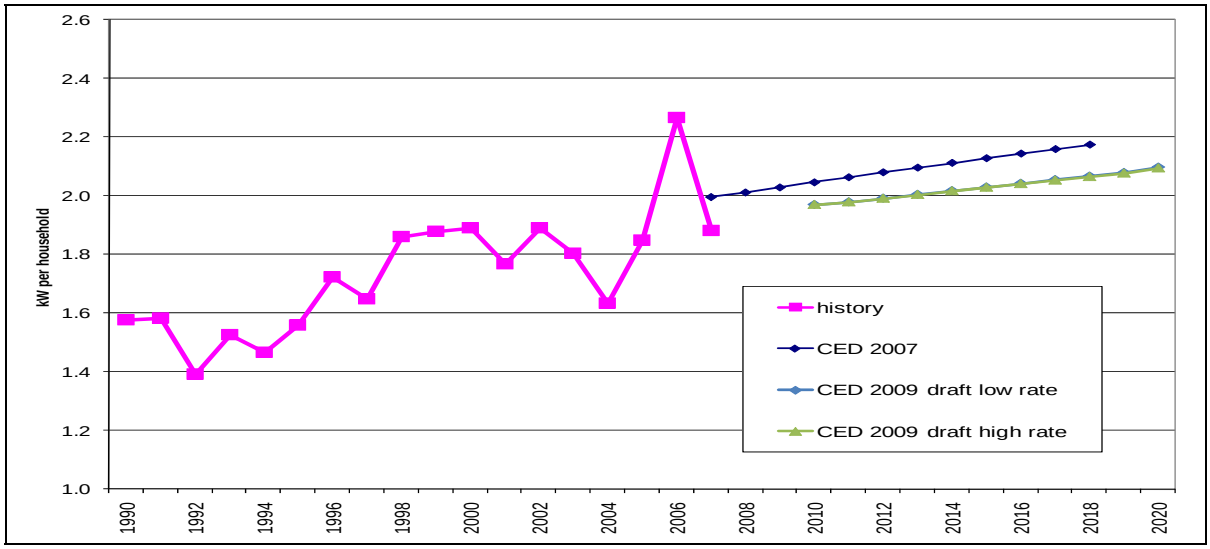
Figures 2-11 and **2-12** compare electricity use per household between the two forecasts. **Figure 2-11** compares annual use per household and **Figure 2-12** compares peak use per household. The *CED 2009* forecast for both annual energy and peak demand is somewhat lower than that projected in *CED 2007*. The decline in use per household in the short term is caused by recent economic conditions and increases in savings from efficiency measures (primarily lighting). This decline tapers off after 2012 and use per household is projected to remain relatively constant after that at the level of mid-1990 household use. The *CED 2009* forecast of peak use per household is projected to increase over the forecast period in a pattern similar to that in the *CED 2007* forecast although at a lower level. The decrease in level is primarily caused by lower economic projections.

Figure 2-11: PG&E Planning Area Use per Household



Source: California Energy Commission, 2009

Figure 2-12: PG&E Planning Area Peak Use per Household



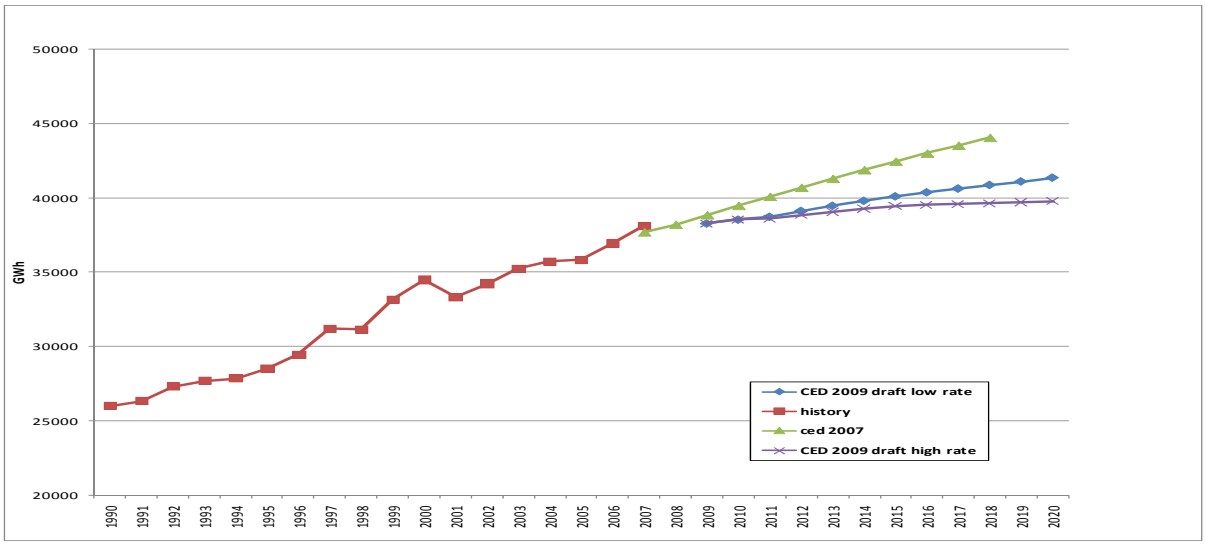
Source: California Energy Commission, 2009

Commercial Building Sector

Figure 2-13 compares the commercial building sector forecasts. Both *CED 2009* forecast price scenarios are lower throughout the entire forecast period than the *CED 2007* forecast. This is primarily caused by a decrease in commercial floor space projections and an increase in the assumptions related to compliance of the recently enacted commercial lighting standards in retrofit applications. The high-rate scenario produces a somewhat lower forecast than the low-rate scenario because of the assumed price elasticity of commercial energy use.

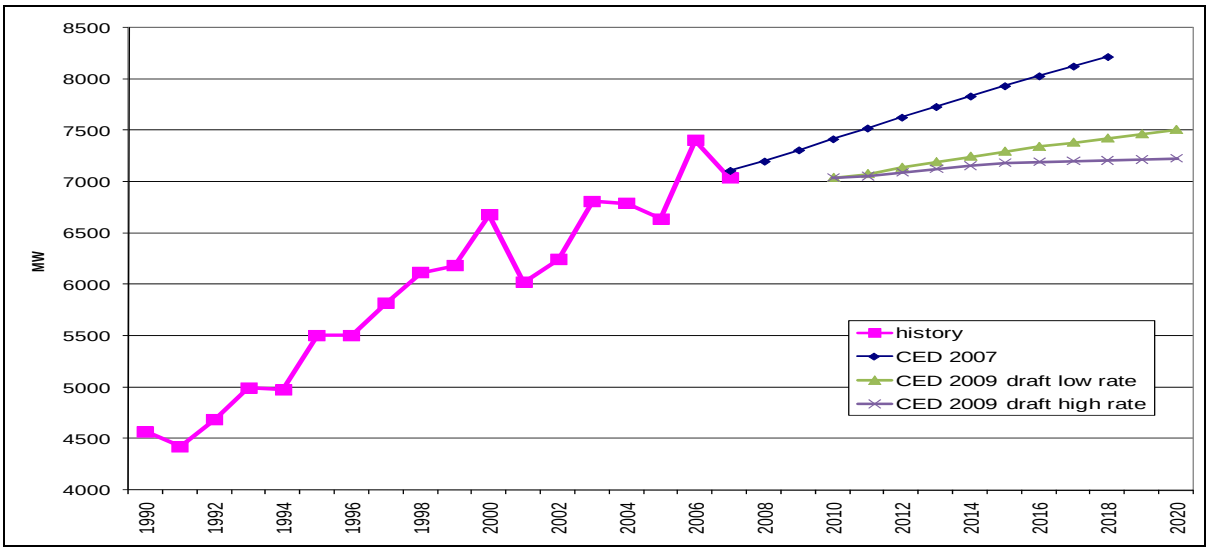
Figure 2-13 compares the commercial peak demand forecasts. Growth in both forecasts is driven primarily by the underlying electricity consumption forecast and exhibits the same pattern. Energy savings from programs and end uses in the commercial sector are assumed to directly translate into peak savings as most commercial use is more uniform over the day in contrast to residential usage patterns.

Figure 2-13: PG&E Planning Area Commercial Consumption



Source: California Energy Commission, 2009

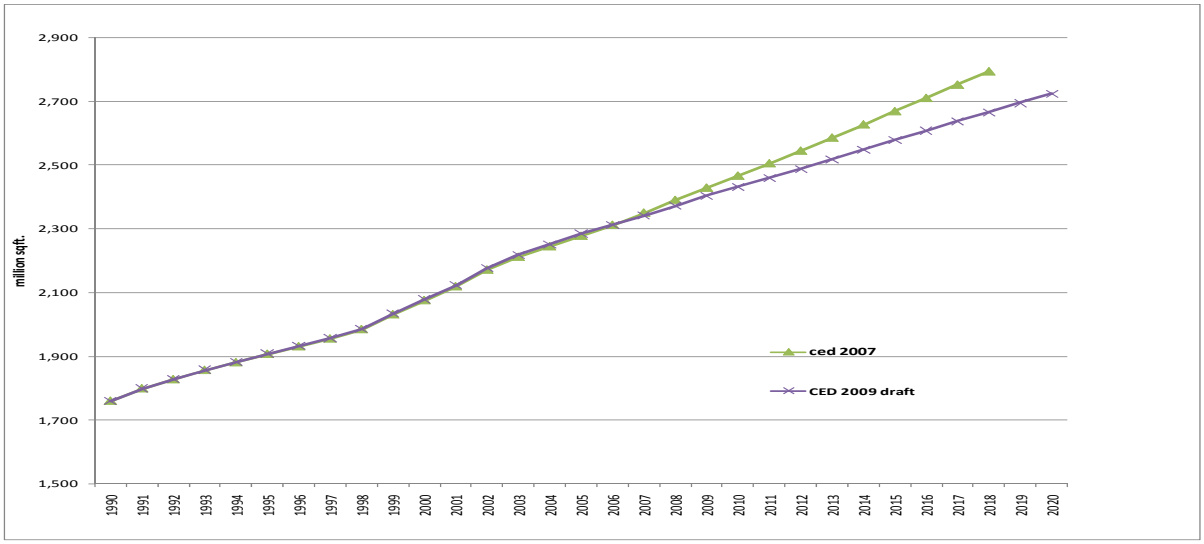
Figure 2-14: PG&E Planning Area Commercial Sector Peak



Source: California Energy Commission, 2009

In staff's commercial building sector forecasting model, floor space by building type, such as retail, offices, and schools, is the key driver. **Figure 2-16** compares total commercial floor space projections and historic estimates used in the two forecasts. The *CED 2009* floor space projections are somewhat lower over the forecast period than those used in the previous forecast. This is because of the lower economic and demographic drivers used in developing the floor space estimates.

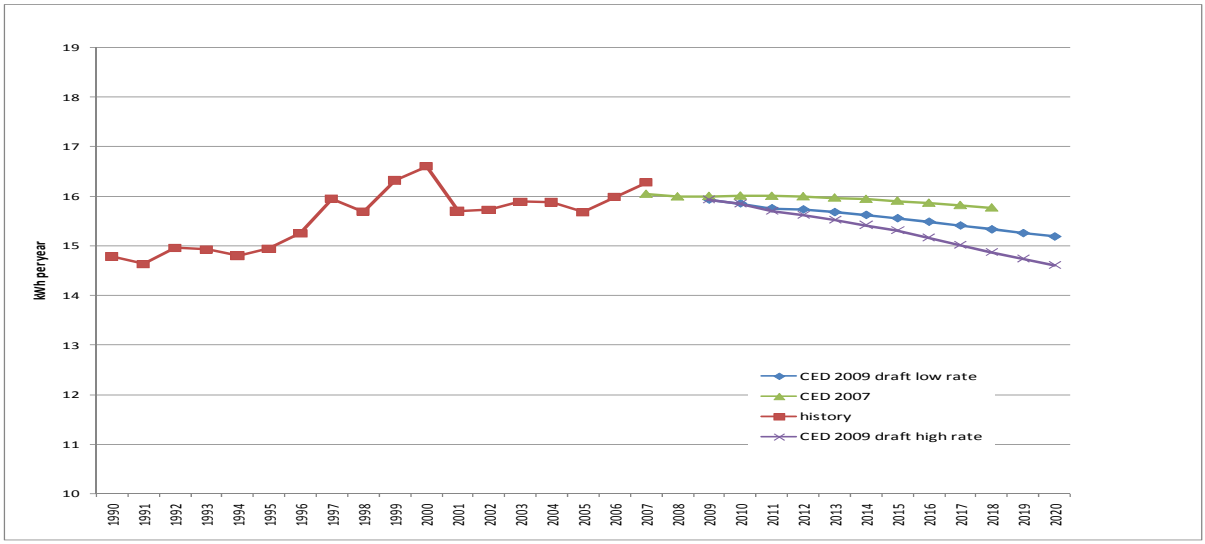
Figure 2-15: PG&E Planning Area Commercial Floor Space



Source: California Energy Commission, 2009

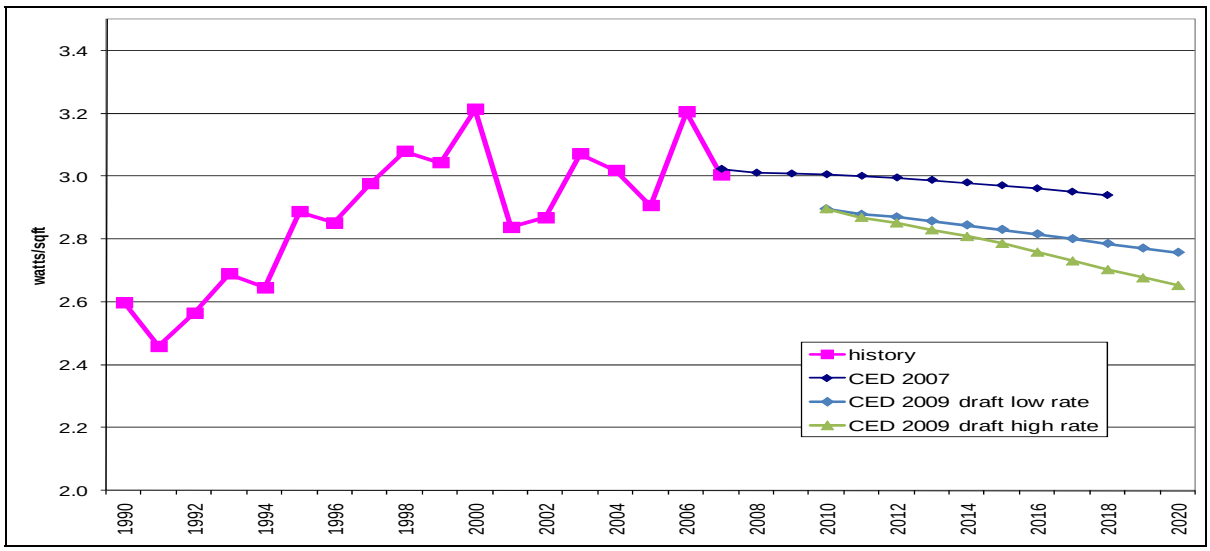
Historic and projected commercial sector annual and peak use per square foot are shown in **Figures 2-16** and **2-17**, respectively. The *CEC 2009* annual use per square foot declines over the forecast period at a faster rate than the *CED 2007* forecast, as does commercial peak use (**Figure 2-17**). Both the energy and peak forecasts decline over the forecast period due to projected impacts of commercial building and appliance standards. By the end of the forecast period both *CED 2009* price scenarios of use per square foot return to levels of the early 1990's. Peak use per square foot follows the same pattern as total consumption per square foot which corresponds to the total commercial energy and peak patterns.

Figure 2-16: PG&E Planning Area Commercial kWh per Square Foot



Source: California Energy Commission, 2009

Figure 2-17: PG&E Planning Area Commercial Sector Peak Watts per Square Foot

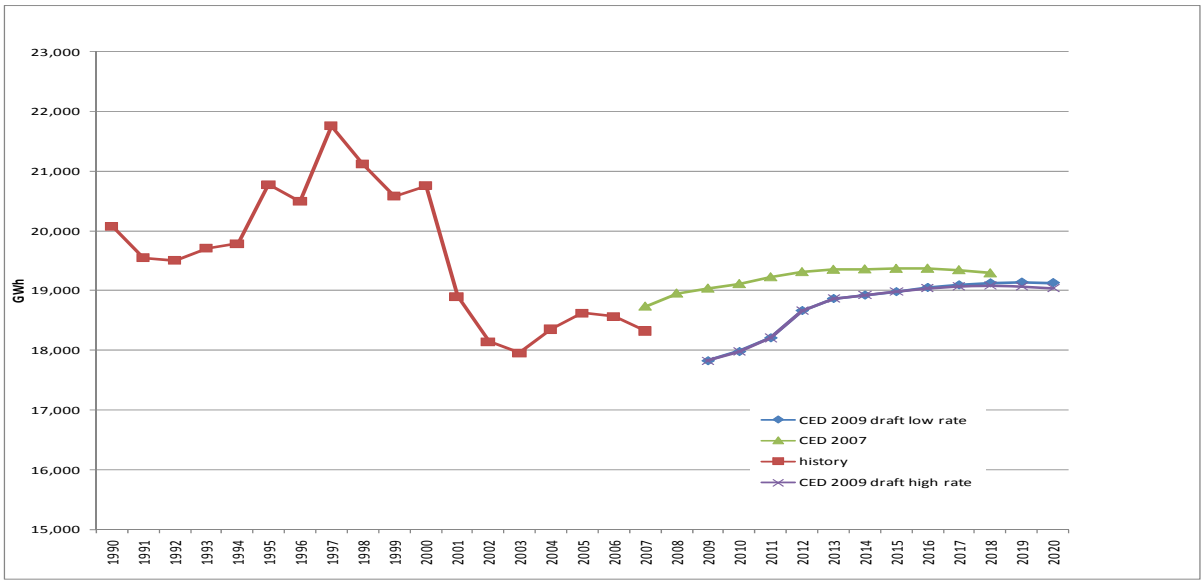


Source: California Energy Commission, 2009

Industrial Sector

Figure 2-18 compares the PG&E planning area industrial sector electricity consumption forecasts. The *CEC 2009* draft industrial consumption forecast is lower in the short term than the *CED 2007* forecast because of recent economic developments. However, the projected growth in the *CED 2009* forecast is higher in the short term than was projected in the *CED 2007* forecast but does not return to the level of the previous forecast. The net result is a somewhat lower *CEC 2009* forecast after 2012. This is caused by lower forecasted industrial economic drivers used in the *CEC 2009* draft forecast. There is little difference in the low and high-rate forecast because of the low price elasticity in the industrial sector.

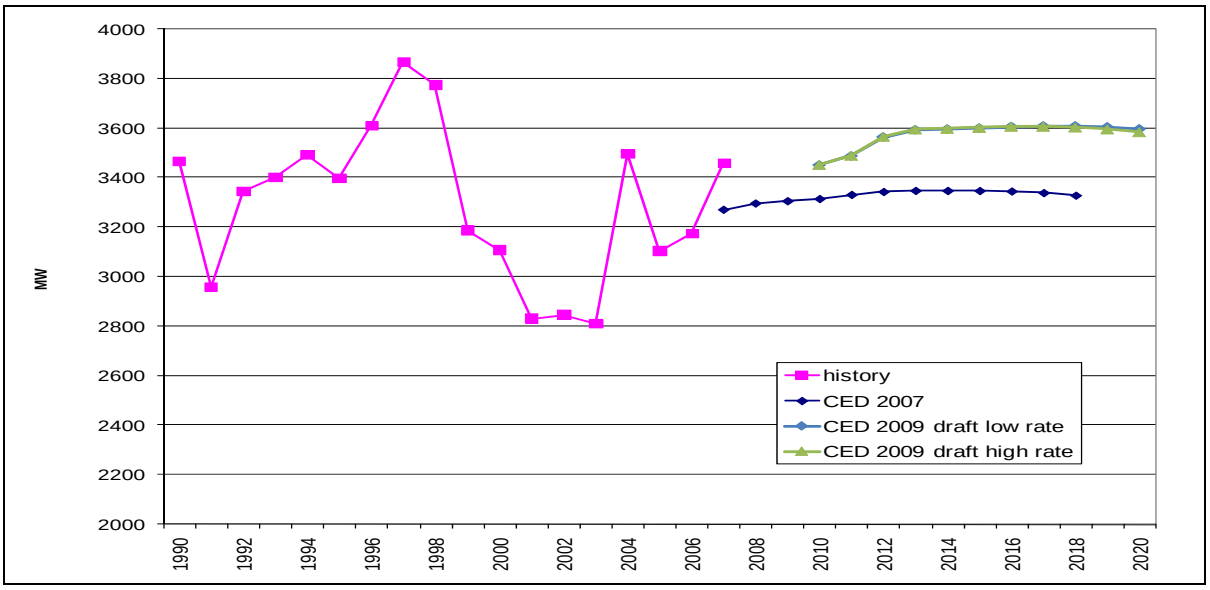
Figure 2-18: PG&E Planning Area Industrial Consumption



Source: California Energy Commission, 2009

Figure 2-19 compares the industrial sector peak forecasts. The *CED 2009* peak is higher due to an increase in the starting point value. The *CED 2009* industrial peak forecast follows the same pattern as the forecast of electricity consumption with an increase in peak through 2012 before flattening out over the remainder of the forecast period.

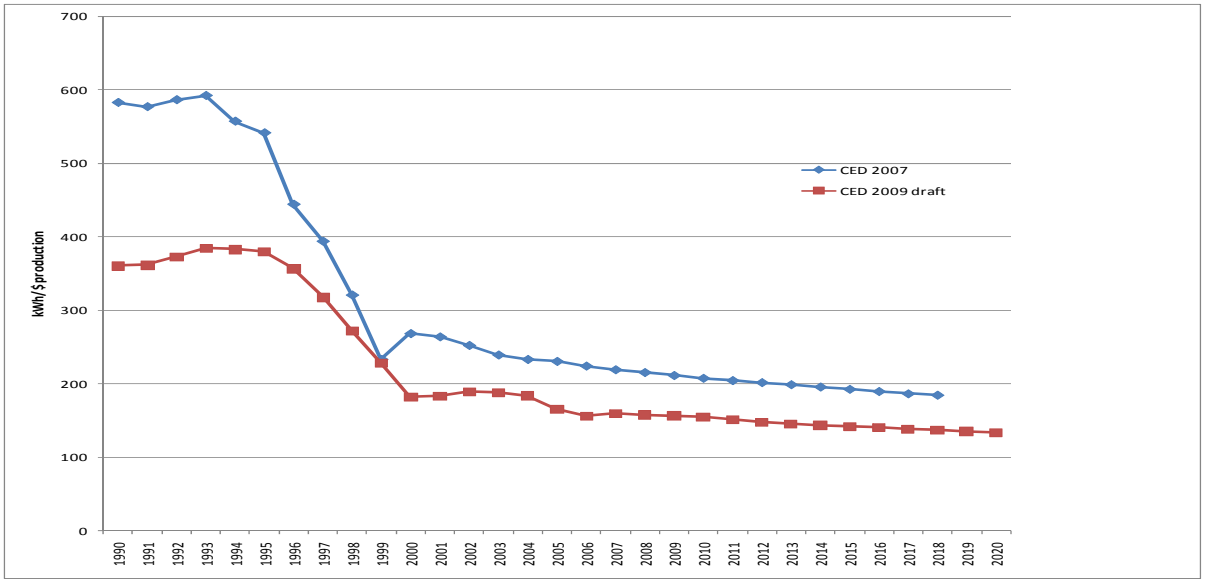
Figure 2-19: PG&E Planning Area Industrial Sector Peak



Source: California Energy Commission, 2009

Figure 2-20 compares electricity use per dollar of industrial production value between the *CED 2009* and *CED 2007* forecasts. Both forecasts exhibit similar patterns caused by increases in productivity in the industrial sector. The decline in use per dollar of production is slightly lower in the *CED 2009* than the previous forecast.

Figure 2-20: PG&E Planning Area Industrial Sector Use per Production Unit

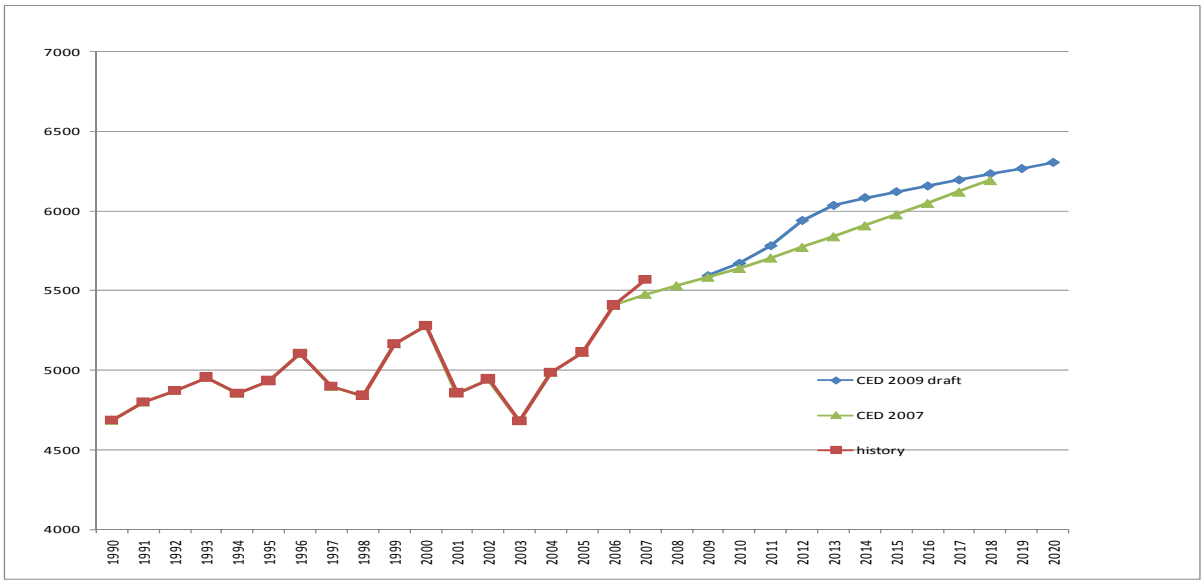


Source: California Energy Commission, 2009

Other Sectors

Figure 2-21 compares the electricity consumption forecasts for the transportation, communication, and utilities sector. The *CED 2009* transportation, communication, and utilities and street lighting forecast is higher than the *CED 2007* forecast given the higher starting point. The higher starting point is a result of assigning previously unclassified consumption to this sector based on more recent QFER filings.

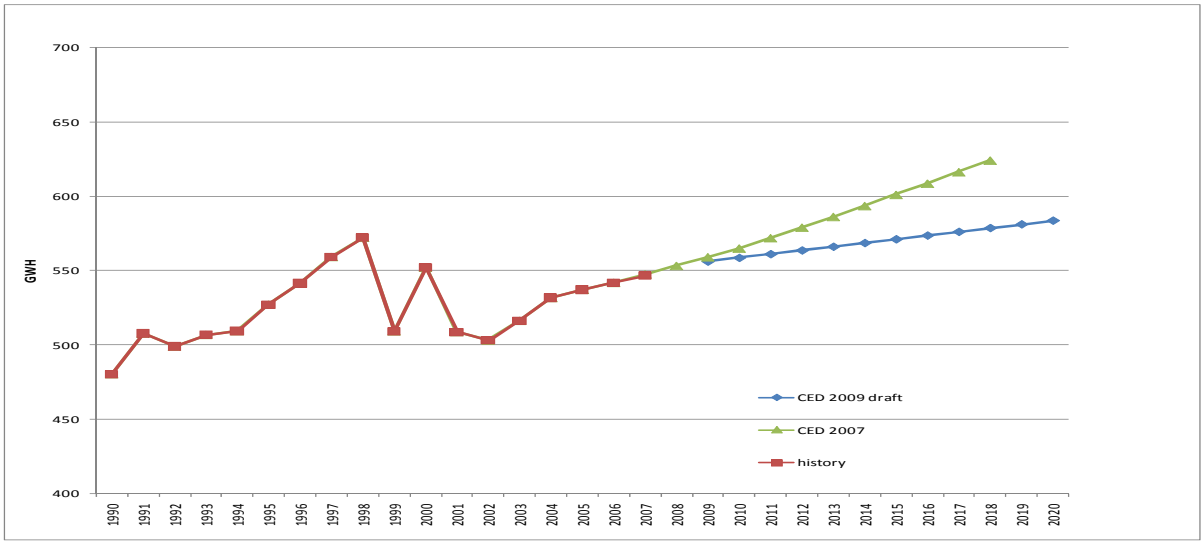
Figure 2-21: PG&E Planning Area Transportation, Communication, and Utilities Sector Electricity Forecast



Source: California Energy Commission, 2009

Figure 2-22 compares the electricity consumption forecasts for the street lighting sectors. The *CED 2009* street lighting forecast is lower than the *CED 2007* forecast because of lower economic projections and increases in lighting efficiency.

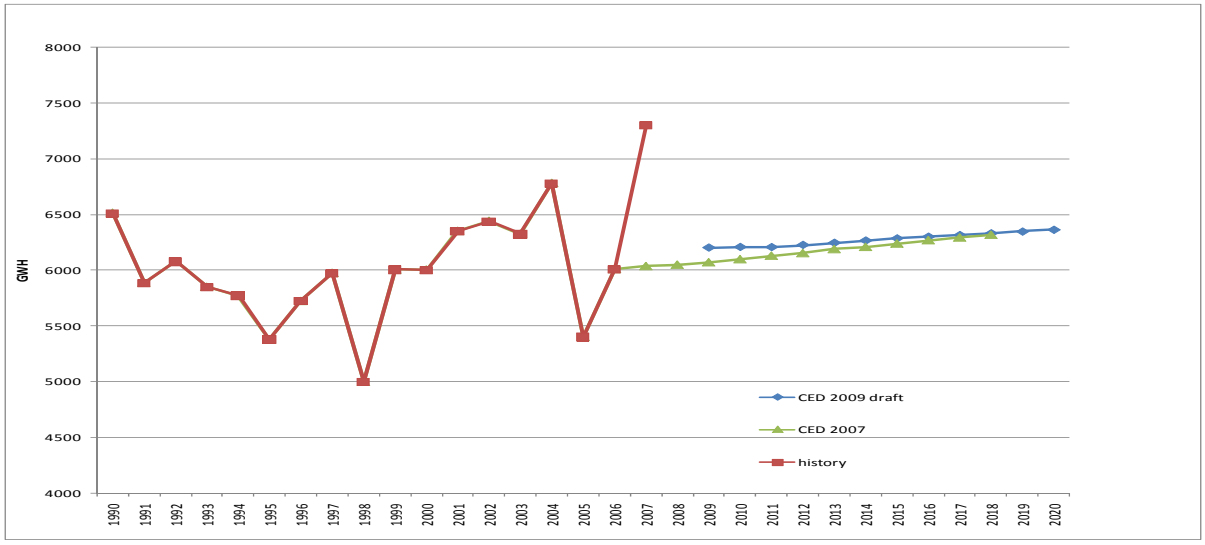
Figure 2-22: PG&E Planning Area Street Lighting Sector Electricity Forecasts



Source: California Energy Commission, 2009

Figure 2-23 compares the electricity consumption forecasts for the agriculture and water pumping sectors. The *CED 2009* agriculture and water pumping forecast is slightly higher than *CED 2007* forecast but is projected to grow at a flatter rate over the forecast period. The result is a forecast that is about the same by the end of the forecast period.

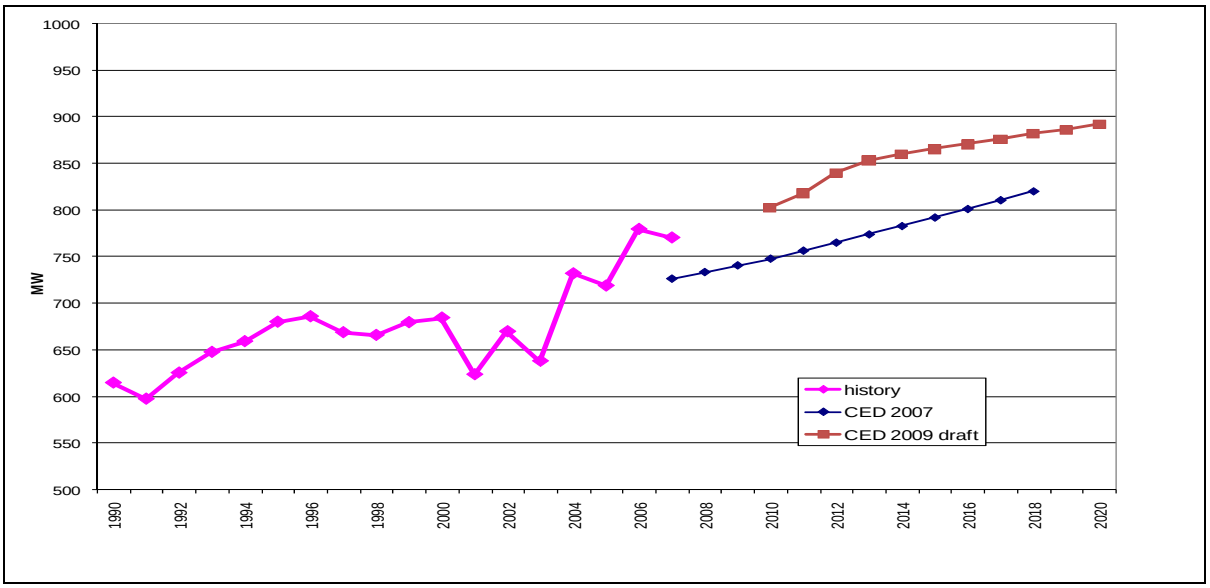
Figure 2-23: PG&E Planning Area Agriculture & Water Pumping Sector Electricity Forecasts



Source: California Energy Commission, 2009

Figure 2-24 provides a comparison between the two forecasts of the combined peak for these sectors. The *CED 2009* forecast is higher over the entire forecast period than the *CED 2007* due to a higher assumed starting point. However, the growth rate of the *CED 2009* forecast is lower than that of the *CED 2007* forecast toward the end of the forecast period.

Figure 2-24: PG&E Planning Area Other Sector Peak

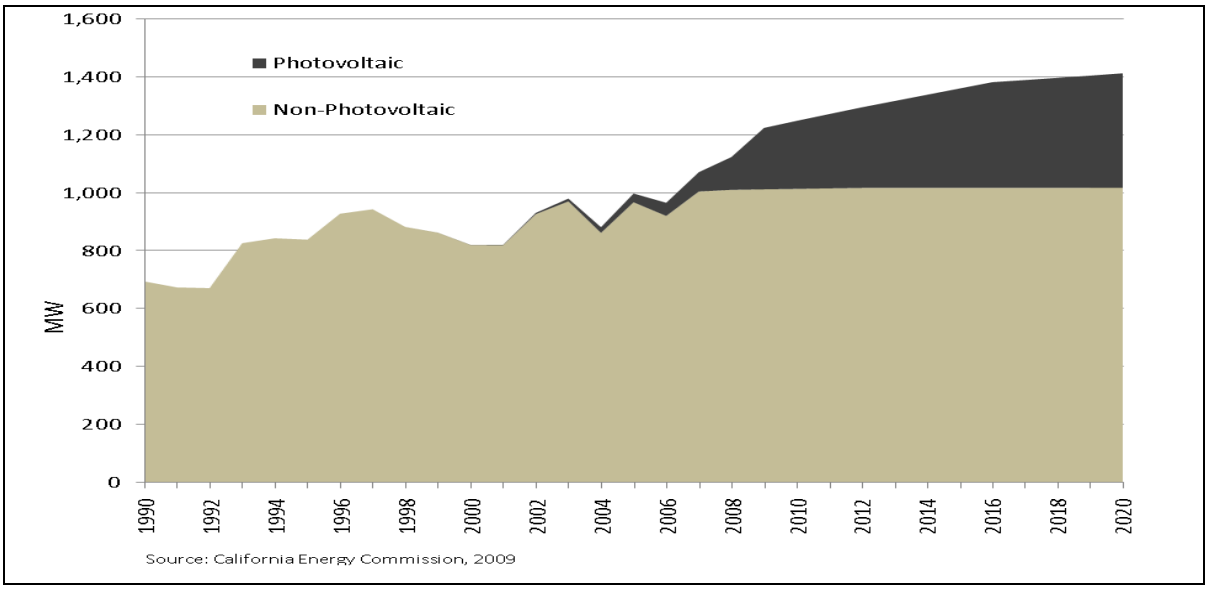


Source: California Energy Commission, 2009

Self-Generation

The peak demand forecast is reduced by self-generation, including the effects of SGIP, CSI, and other programs, as discussed in Chapter 1. The effects of these programs are forecast based on recent trends in installations. **Figure 2-25** shows the staff draft forecast of peak impacts from photovoltaic and non-photovoltaic self-generation. Based on current trends, staff projects about 400 MW of peak reduction from photovoltaic systems by 2020.

Figure 2-25: PG&E Planning Area Self Generation Peak Forecasts



Conservation/Efficiency Impacts

Staff spent a great deal of time refining methods to account for energy efficiency and conservation impacts while preparing this forecast, particularly for utility efficiency programs. **Tables 2-2** and **2-3** show electricity consumption and peak savings estimates for selected years, for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and certain market trends not directly related to programs or standards. Savings are measured against a baseline before 1975, so they incorporate more than 30 years of impacts from rate changes and standards. Chapter 8 provides more detail on staff work related to energy efficiency and conservation.

Table 2-2: PG&E Planning Area Electricity Consumption Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (GWh)							
Building Standards	1010	1830	2354	2689	3002	3463	4079
Appliance Standards	1190	2575	3469	4185	4556	5051	5649
Utility and Public Agency Programs	646	984	997	2298	3646	2912	1152
Naturally Occurring Savings	67	90	106	119	129	513	1901
Total Residential Savings	2912	5479	6925	9291	11334	11939	12781
Commercial Energy Savings (GWh)							
Building Standards	474	806	1290	1730	1949	2280	2707
Appliance Standards	249	571	823	1085	1206	1376	1591
Utility and Public Agency Programs*	168	759	1020	1835	2113	1313	811
Naturally Occurring Savings	6190	6293	9091	6694	7472	7920	8763
Total Commercial Savings	7081	8429	12224	11344	12740	12889	13872
Total Energy Savings	9994	13908	19149	20635	24074	24829	26654

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

Table 2-3: PG&E Planning Area Electricity Peak Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (MW)							
Building Standards	240	491	602	759	842	996	1205
Appliance Standards	283	691	888	1181	1277	1452	1669
Utility and Public Agency Programs	154	264	255	648	1022	837	340
Naturally Occurring Savings	16	24	27	34	36	148	562
Total Residential Savings	693	1470	1772	2622	3177	3433	3776
Commercial Energy Savings (MW)							
Building Standards	83	158	249	317	341	398	471
Appliance Standards	44	112	159	199	211	240	277
Utility and Public Agency Programs*	29	149	197	337	370	229	141
Naturally Occurring Savings	1087	1236	1757	1228	1309	1382	1526
Total Commercial Savings	1244	1655	2363	2082	2232	2249	2415
Total Energy Savings	1937	3125	4135	4704	5409	5682	6191

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

CHAPTER 3: Southern California Edison Planning Area

The Southern California Edison (SCE) planning area includes:

- SCE bundled retail customers.
- Customers served by energy service providers (ESPs) using the SCE distribution system to deliver electricity to end users.
- Customers of the various southern California municipal and irrigation district utilities with the exception of the cities of Los Angeles, Pasadena, Glendale, and Burbank and the Imperial Irrigation District. Also excluded from the SCE planning area are San Diego County and the southern portion of Orange County served by SDG&E.

This chapter is organized as follows. It first presents forecasted consumption and peak loads for the SCE planning area, including both total and per capita values. The *CED 2009* values are compared to the adopted *CED 2007* forecast; differences between the two forecasts are explained. The forecasted load factor, jointly determined by the consumption and peak load estimates, is also discussed. Next, it presents sector consumption and peak load forecasts. The residential, commercial, industrial, and "other" sector forecasts are compared to those in *CED 2007*; again, differences between the two are discussed. Finally, assumptions on prices, self generation and energy efficiency are discussed.

Forecast Results

Table 3-1 compares the *CED 2007* and *CED 2009* forecasts of electricity consumption and peak demand for selected years. The *CED 2009* electricity consumption forecast is 9. 5 percent lower than the *CED 2007* forecast in the short term. This difference grows to over 13 percent by the end of the forecast period for the low-rate scenario and over 14 percent for the high-rate scenario. The lower forecast is caused by much lower short term economic projections in the short term and an increase in the savings assumptions from efficiency programs. The difference in peak forecasts is somewhat less pronounced than the consumption forecast. The *CED 2009* peak forecast is nearly 5 percent lower in the short term than the *CED 2007* forecast. This difference grows to 6.7 percent for the low-rate scenario and 8 percent for the high-rate scenario by the end of the forecast period. The smaller decrease in peak forecast relative to energy forecasts is caused by reductions which are more consumption oriented than peak oriented (for example, residential lighting).

Table 3-1: SCE Planning Area Forecast Comparison

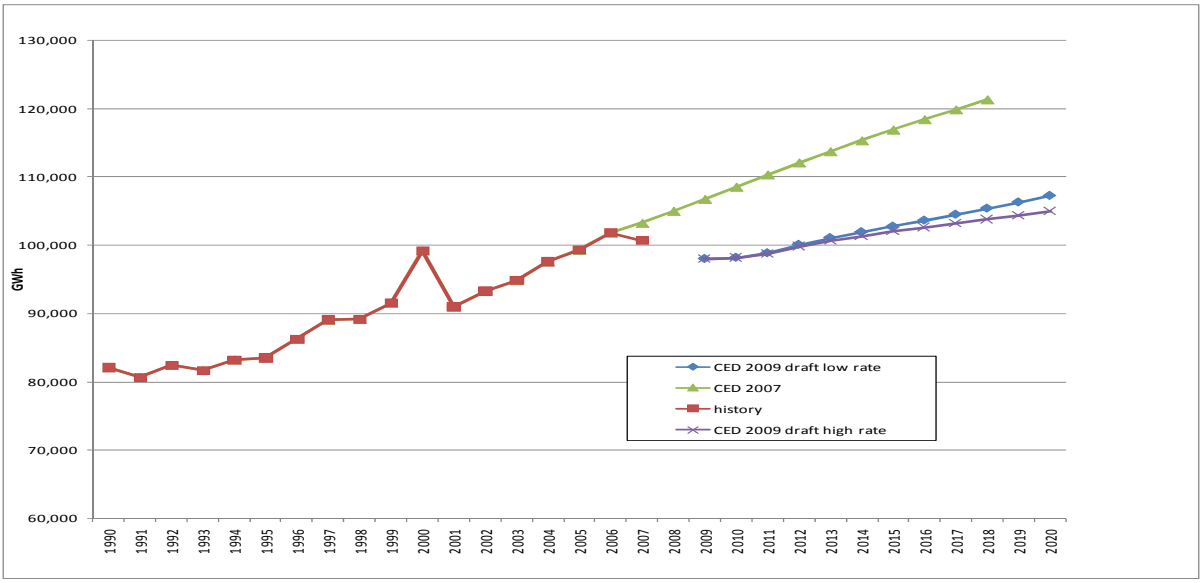
Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	82,069	82,069	82,069	0.00%	0.00%
2000	99,146	99,146	99,146	0.00%	0.00%
2007	103,214	100,636	100,636	-2.50%	-2.50%
2010	108,503	98,190	98,190	-9.50%	-9.50%
2015	116,872	102,761	102,040	-12.07%	-12.69%
2018	121,298	105,372	103,768	-13.13%	-14.45%
Average Annual Growth Rates					
1990-2000	1.91%	1.91%	1.91%		
2000-2007	0.58%	0.30%	0.30%		
2007-2010	1.68%	-0.82%	-0.82%		
2010-2018	1.40%	0.89%	0.69%		
Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	17,635	17,647	17,647	0.07%	0.07%
2000	19,408	19,506	19,506	0.50%	0.50%
2007	22,876	23,111	23,111	1.03%	1.03%
2010	24,082	22,898	22,898	-4.92%	-4.92%
2015	26,013	24,379	24,221	-6.28%	-6.89%
2018	27,112	25,290	24,944	-6.72%	-8.00%
Average Annual Growth Rates					
1990-2000	0.96%	1.01%	1.01%		
2000-2007	3.34%	3.45%	3.45%		
2007-2010	1.73%	-0.31%	-0.31%		
2010-2018	1.49%	1.25%	1.08%		
Historic values are shaded					

Source: California Energy Commission, 2009

As shown in **Figure 3-1**, the *CED 2009* electricity consumption forecast is about 9. 5 percent lower at the beginning of the forecast period (2010) than the *CED 2007* forecast because of the recent economic downturn and an increase in efficiency program savings assumptions.

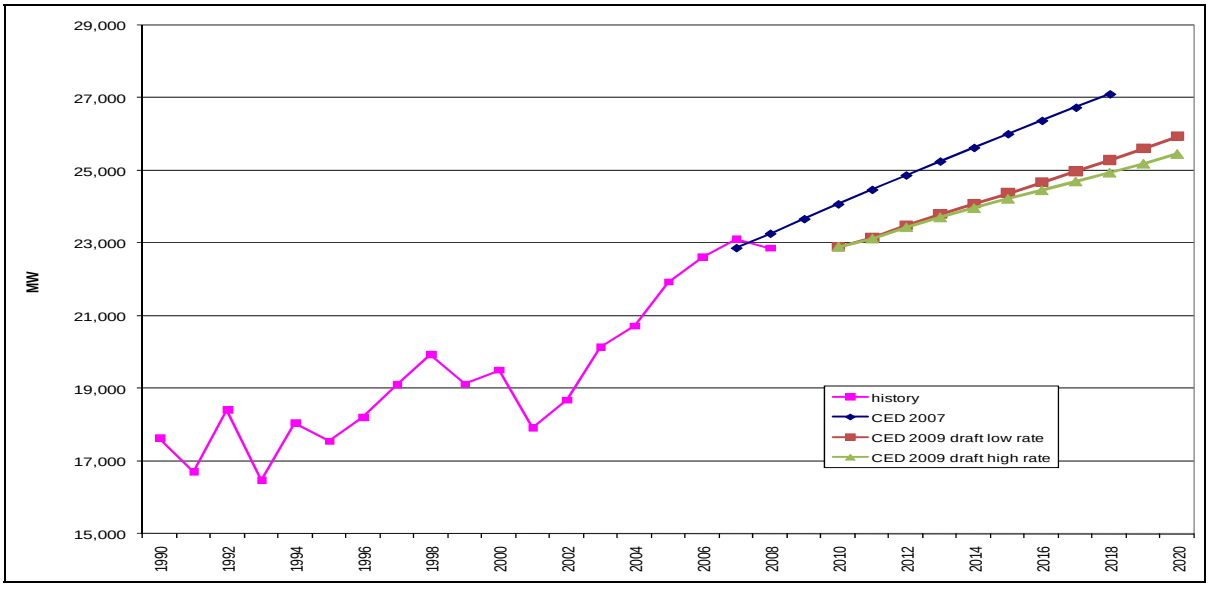
The *CED 2009* SCE planning area peak demand forecast, shown in **Figure 3-2**, is also lower over the entire forecast period compared to the *CED 2007* forecast. This is consistent with the differences seen in the electricity forecasts.

Figure 3-1: SCE Planning Area Electricity Forecast



Source: California Energy Commission, 2009

Figure 3-2: SCE Planning Area Peak

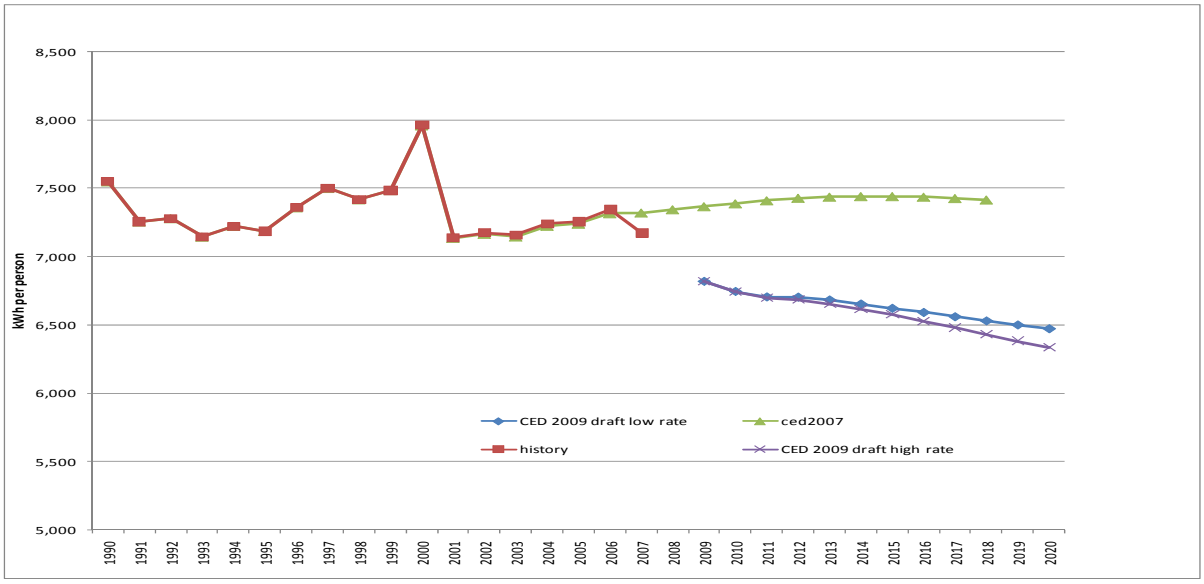


Source: California Energy Commission, 2009

As **Figure 3-3** shows, per capita electricity consumption is lower in the *CED 2009* forecast throughout the entire period than in the *CED 2007* forecast. Per capita consumption in the *CED 2009* forecast starts from a lower value in 2009 and declines over the forecast period for both the high- and low-rate scenarios. Both of the *CED 2009* values remain below levels of per capita electricity consumption witnessed in recent history.

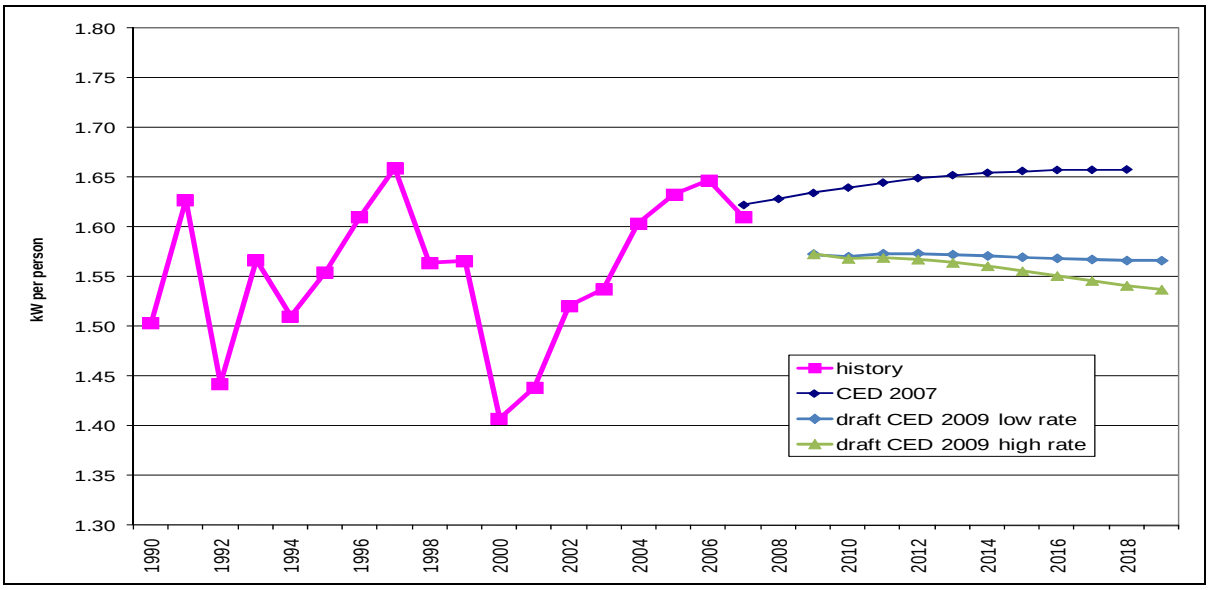
Figure 3-4 compares per capita peak demand. Both *CED 2009* forecast scenarios are also lower than the *CED 2007* forecast. In contrast to the electricity consumption values the per capita peak values still remain in the range of recent historic occurrences.

Figure 3-3: SCE Planning Area per Capita Electricity Consumption



Source: California Energy Commission, 2009

Figure 3-4: SCE Planning Area per Capita Peak Demand

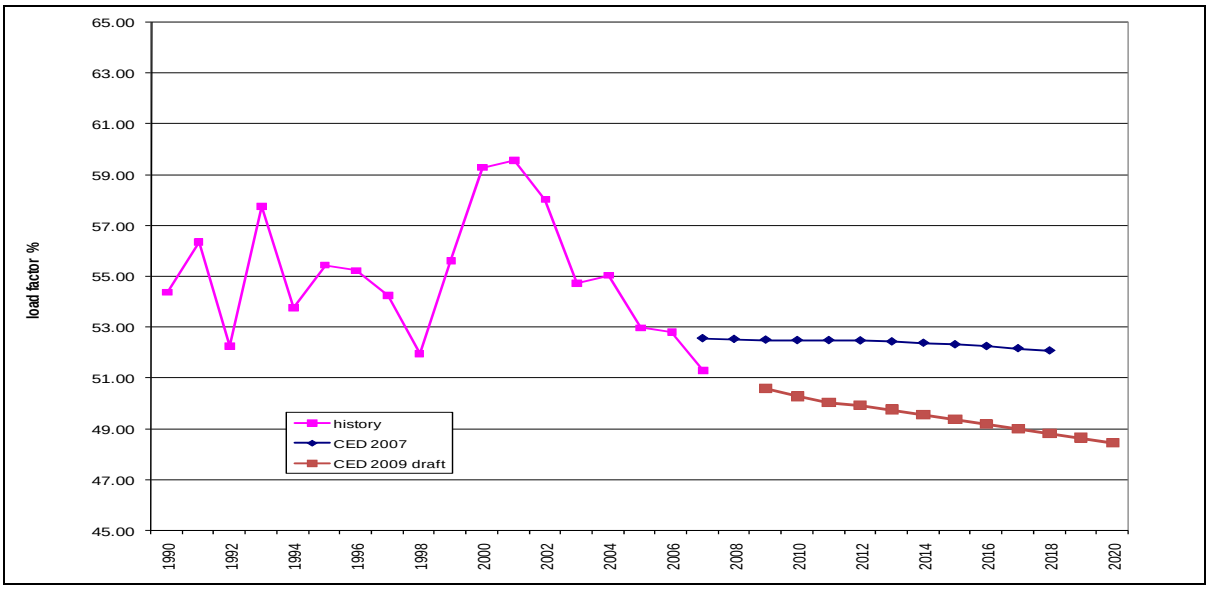


Source: California Energy Commission, 2009

Figure 3-5 compares the load factors for the *CED 2009* and *CED 2007* forecasts. The load factor is a measure of the relative increase in peak demand with respect to annual electricity consumption. Lower load factors indicate a sharper needle peak, and higher load factors indicate a more stable load. Historic variation in load factors is caused in part by variation in annual weather patterns. In southern California, recent peak temperatures before 2006 were lower than the 57-year median value, resulting in higher-than-expected load factors. The 2006 load factor is low because of the higher-than-normal peak conditions experienced last summer. The *CED 2009* projected load factors are on the low end of the range of recent values.

Over the forecast period, the *CED 2009* load factor declines slightly, which is consistent with higher weather-sensitive load growth in relation to baseload energy growth. Consumption in the SCE planning area is shifting toward residential and commercial sectors and away from the industrial sectors. Growth is also increasingly taking place in hotter inland areas leading to greater saturation of central air conditioning and greater use of air conditioning equipment compared to earlier concentrations in cooler coastal areas. Additionally, air conditioning loads are increasing along the coast as more households install air conditioning units for the few days they may be needed each year.

Figure 3-5: SCE Planning Area Load Factor



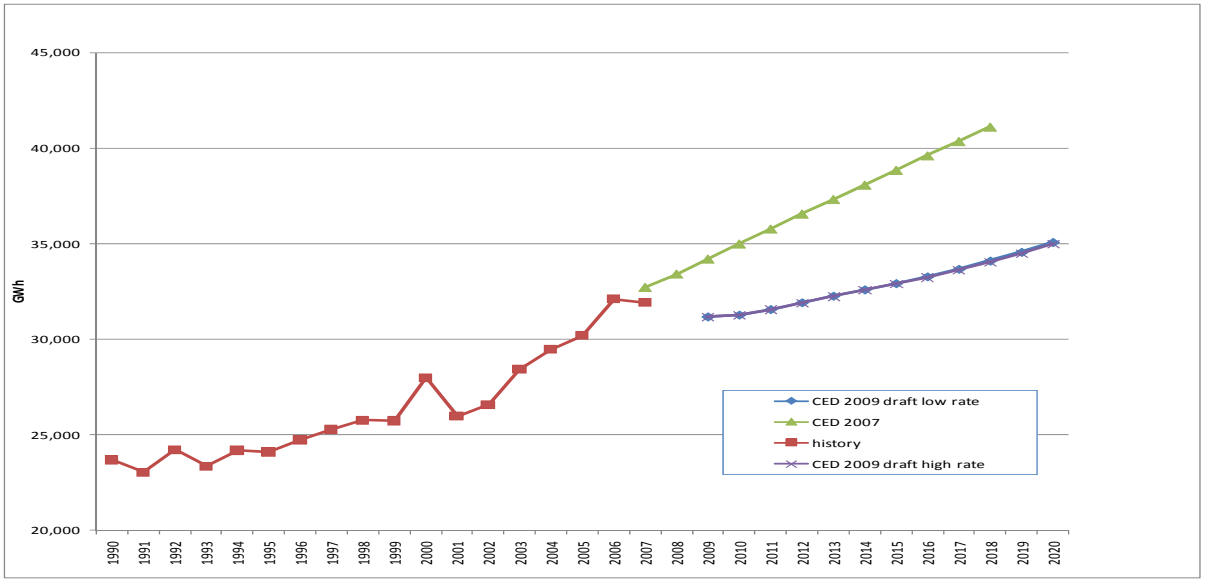
Source: California Energy Commission, 2009

Sector Level Results and Input Assumptions

Residential

Figure 3-6 compares the *CED 2009* and *CED 2007* SCE planning area residential forecasts. Both *CED 2009* forecast scenarios are lower throughout the entire forecast period. This is caused by revised economic and demographic projections and reductions in future use from residential lighting efficiency programs.

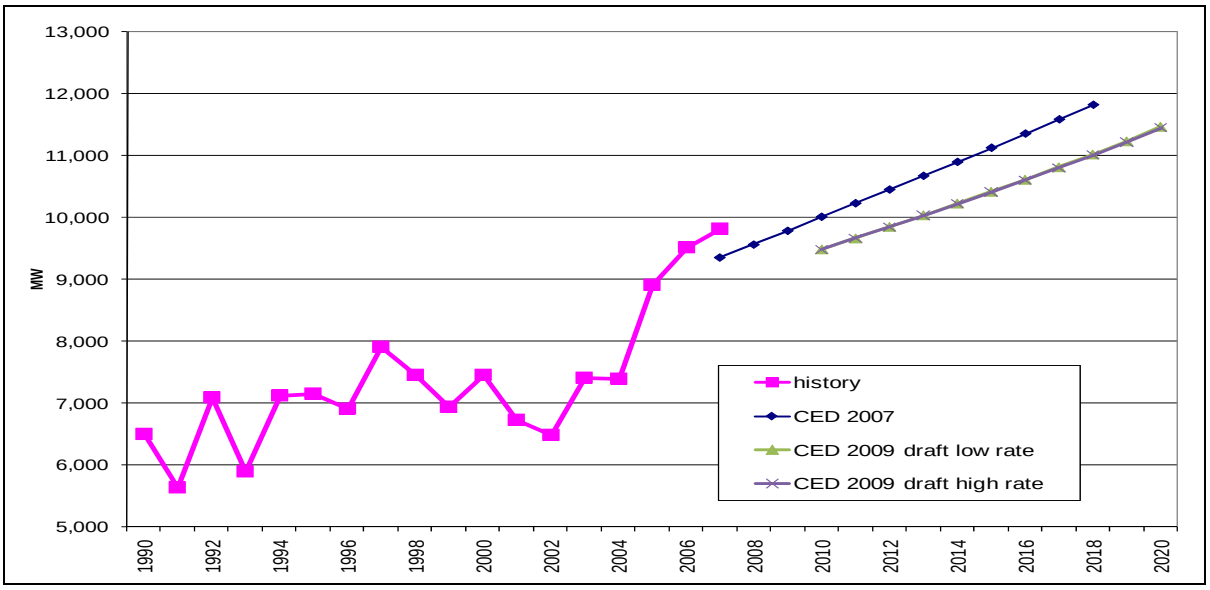
Figure 3-6: SCE Planning Area Residential Consumption



Source: California Energy Commission, 2009

Figure 3-7 compares the *CED 2009* and *CED 2007* residential peak demand forecasts. As is the case for residential consumption, the *CED 2009* residential peak forecast is lower throughout the forecast period than *CED 2007*. The difference between the two peak forecasts is driven primarily by the difference in electricity consumption forecasts.

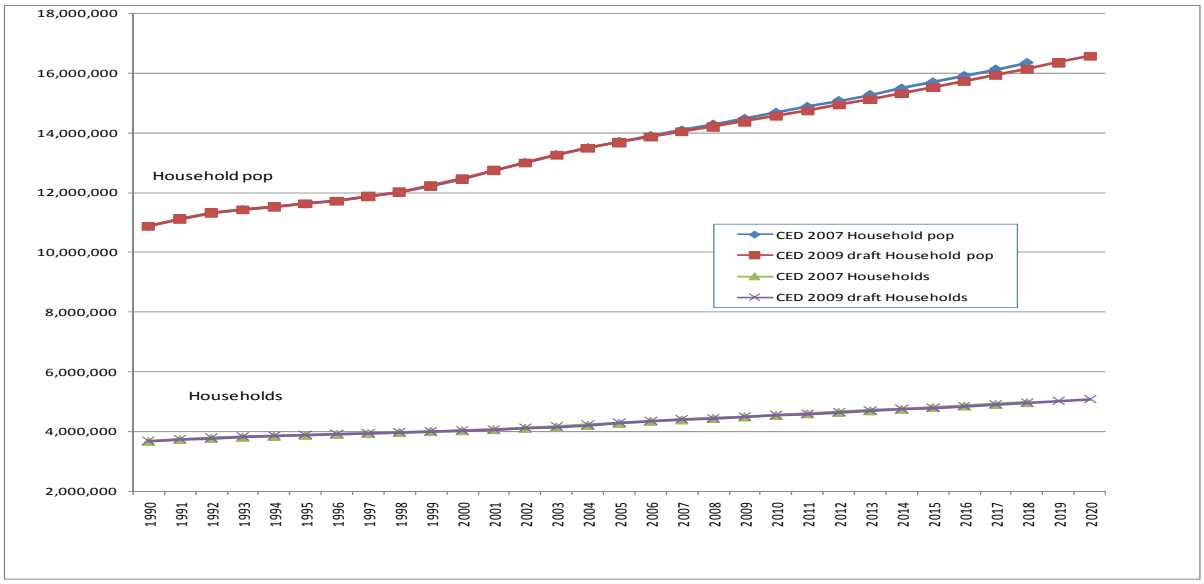
Figure 3-7: SCE Planning Area Residential Peak



Source: California Energy Commission, 2009

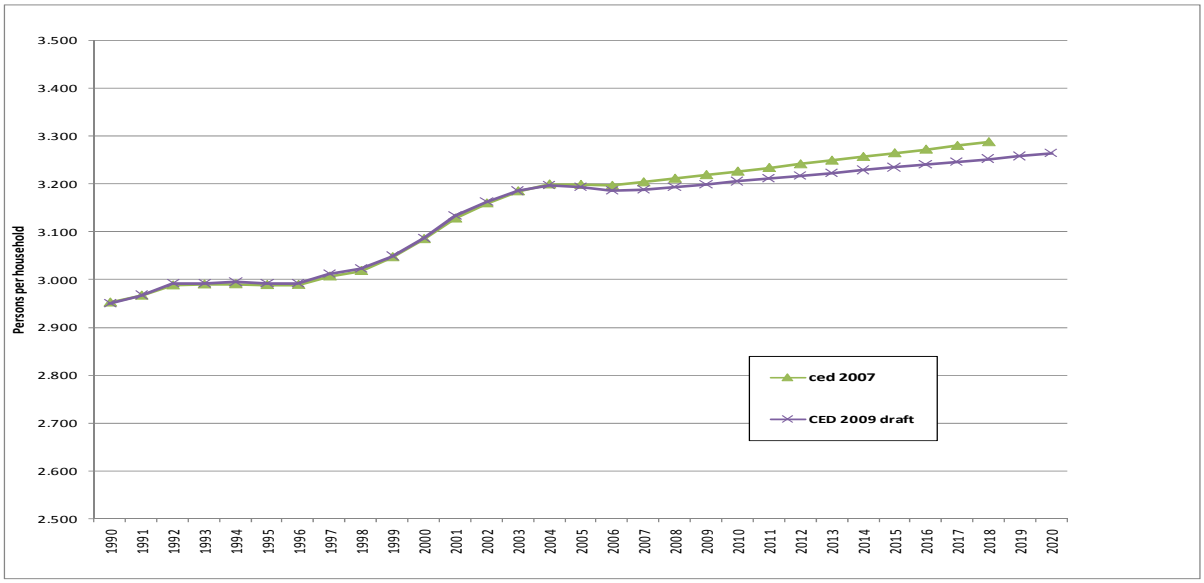
Figures 3-8, 3-9 and **3-10** compare the residential drivers used in the *CED 2009* forecast with the *CED 2007* values. **Figure 3-8** provides comparisons of total population and total household projections. The *CED 2009* forecast of total population is slightly lower as it is based on a revised split of the Los Angeles county population into component planning areas. In addition, incorporation of updated historic estimates leads to a slight downward revision in projected persons per household (**Figure 3-10**). The *CED 2009* persons per household projections incorporate annual Department of Finance E-5A interim updates to county population and household estimates through 2007. The interim estimates indicate that the average number of persons per household in the SCE region has increased at a slightly slower rate than was projected in the *CED 2007* forecast, and this has decreased the current 2007 actual estimate of persons per household. The *CED 2009* projected growth in persons per household per year is assumed to be half of the annual 1990-2007 growth. This is a slightly lower growth rate than was used in the *CED 2007* projection. The net result of these changes is a slightly higher household forecast than was used in the *CED 2007* forecast.

Figure 3-8: SCE Planning Area Residential Demographic Projections



Source: California Energy Commission, 2009

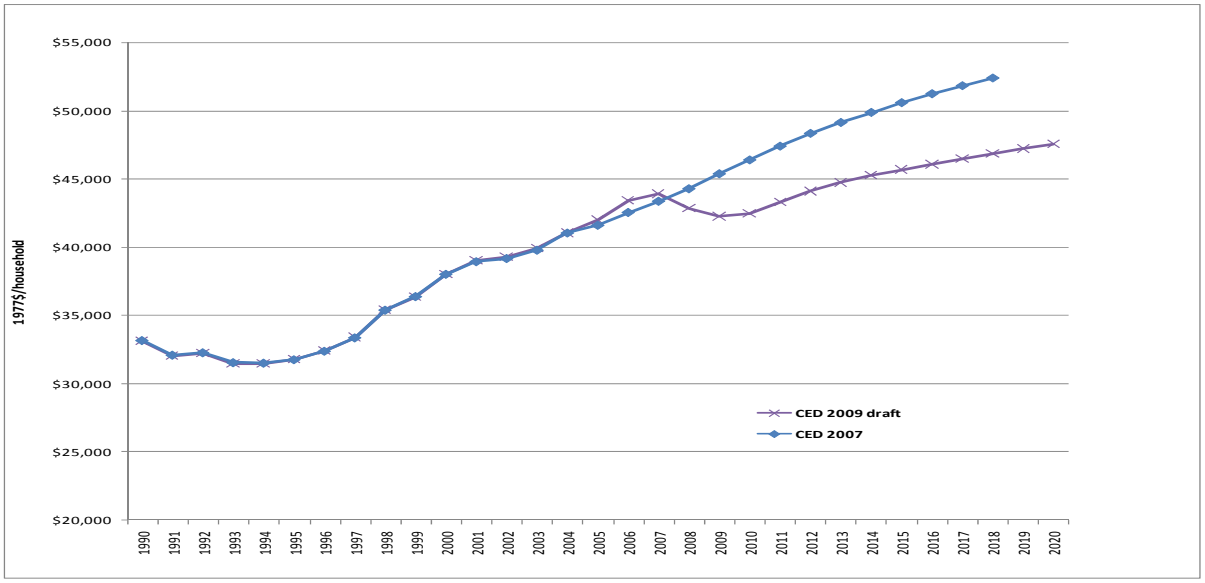
Figure 3-9: SCE Planning Area Persons per Household Projections



Source: California Energy Commission, 2009

Figure 3-10 compares household income between the two forecasts. Household income is derived as the product of per capita income and persons per household. The *CED 2009* projection drops significantly in the near term and then increases at a slower rate than the previous forecast. The lower household income growth serves to reduce forecasted residential consumption over the forecast period.

Figure 3-10: SCE Planning Area Household Income Projections

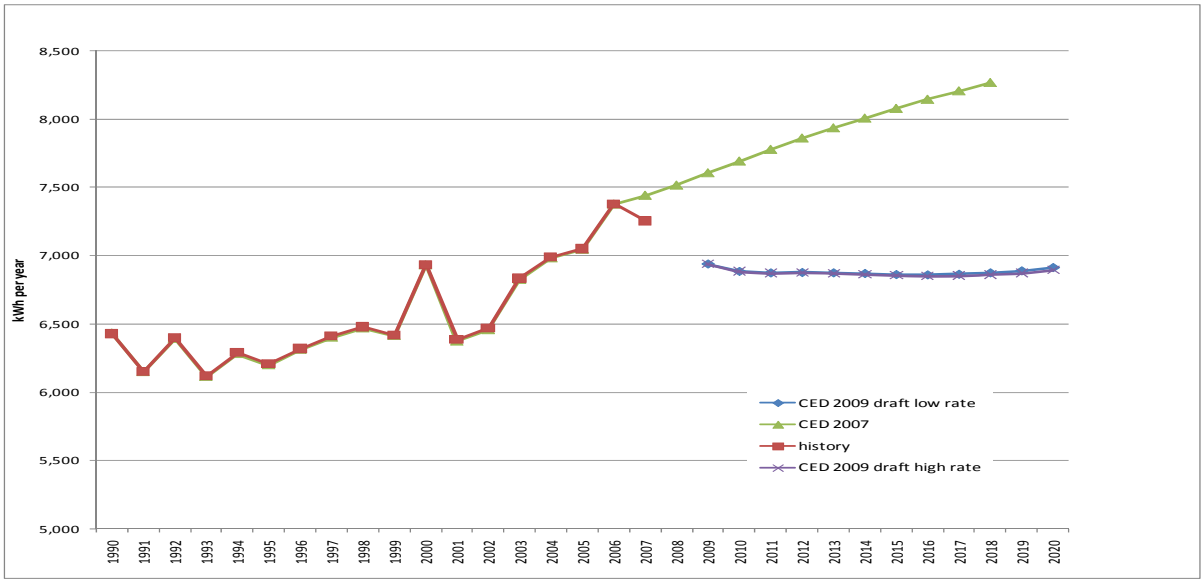


Source: California Energy Commission, 2009

Figure 3-11 is a comparison of annual electricity use per household, and **Figure 3-12** is a comparison of peak demand per household. The *CED 2009* forecast of annual electricity use per household is significantly lower than that projected in *CED 2007*. This is primarily due to lower short-term household income growth projections and incorporation of savings from lighting programs in the *CED 2009* forecast. The new projection of annual residential use per household is projected to remain relatively constant over the forecast period compared to the continued increase seen in the *CED 2007* forecast.

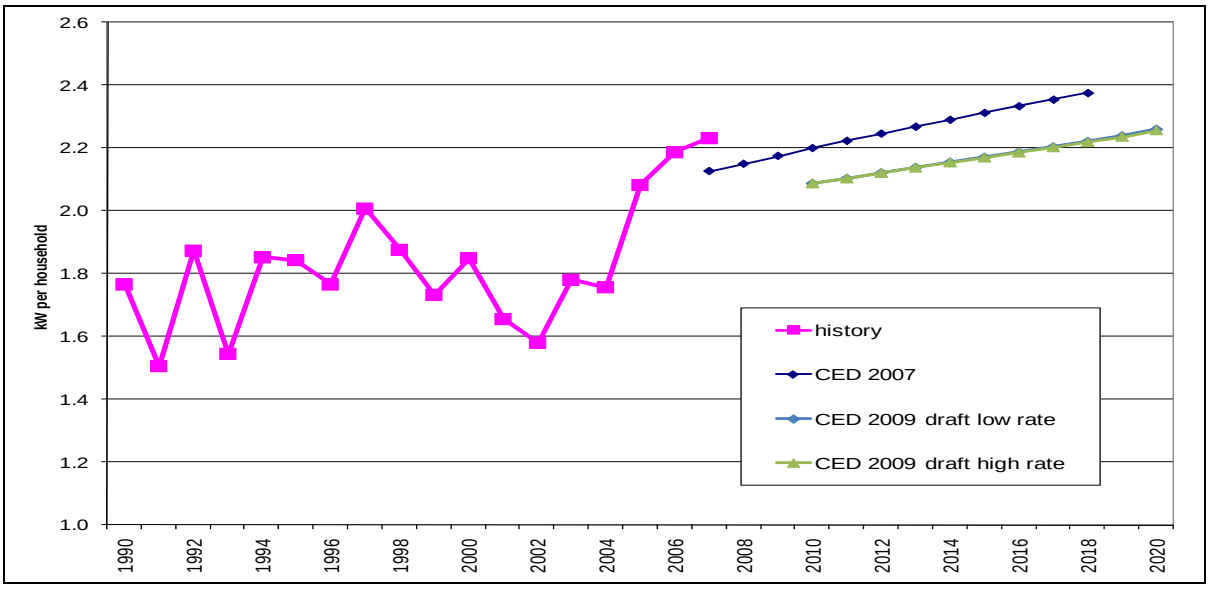
CED 2009 peak use per household, presented in **Figure 3-12**, is also lower than what was projected in *CED 2007*. This is in part driven by the short-term difference in energy forecasts. The mid- to-long term growth in peak is similar to the *CED 2007* forecast because much of the annual electricity savings does not directly translate into peak savings.

Figure 3-11: SCE Planning Area Use per Household



Source: California Energy Commission, 2009

Figure 3-12: SCE Planning Area Peak Use per Household

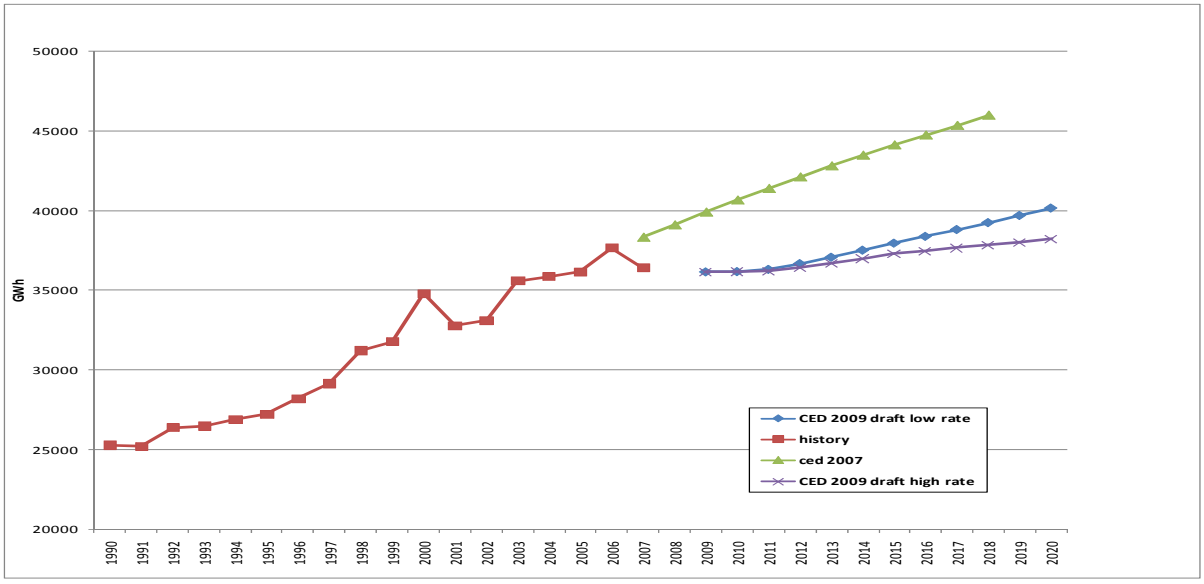


Source: California Energy Commission, 2009

Commercial Building Sector

Figure 3-13 compares the commercial building sector forecasts. The *CED 2009* forecast is lower throughout the entire forecast period. The *CED 2009* forecast's starting value is lower than that projected in *CED 2007*, because of a drop in recent historic values. The *CED 2009* forecast also grows at a slower rate in both scenarios than the *CED 2007* forecast as a result of lower economic and demographic projections. This is caused mainly by revisions in the estimation of commercial square footage in the SCE planning area

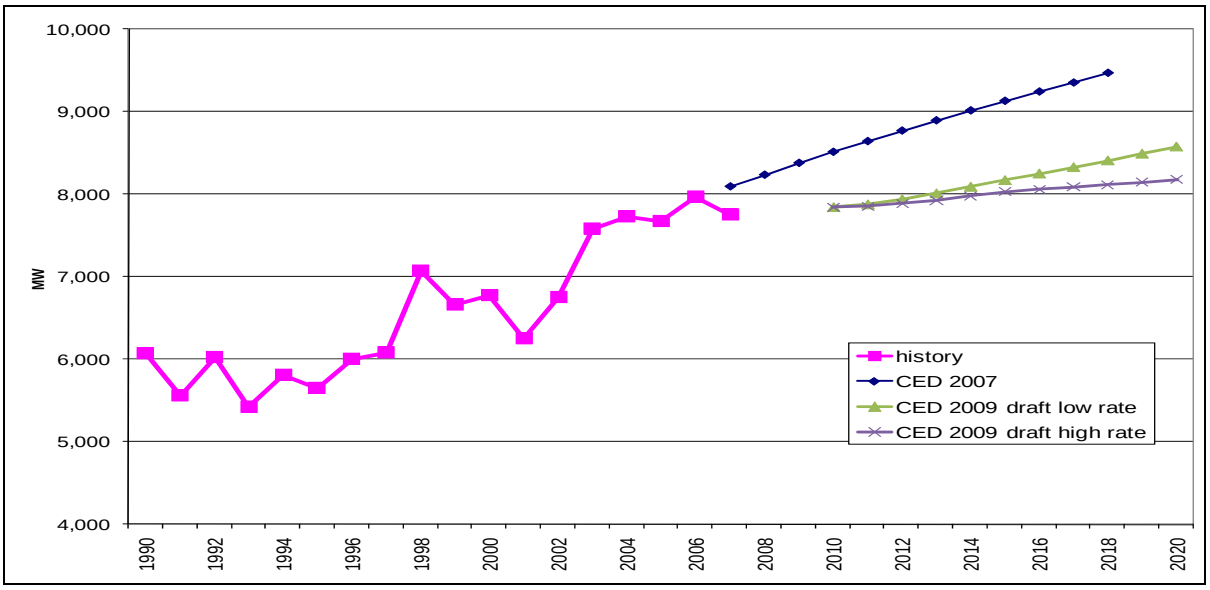
Figure 3-13: SCE Planning Area Commercial Consumption



Source: California Energy Commission, 2009

Figure 3-14 compares the commercial peak demand forecasts. Growth in the commercial peak demand forecasts is driven primarily by the underlying electricity consumption forecasts. Therefore, the consumption and peak forecasts exhibit the same patterns.

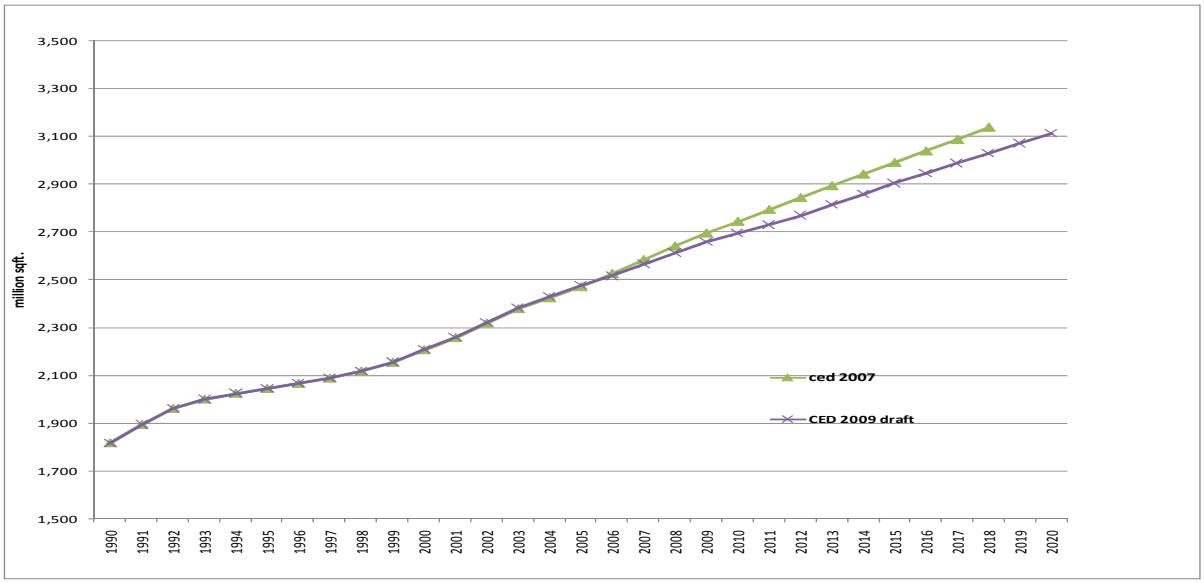
Figure 3-14: SCE Planning Area Commercial Sector Peak



Source: California Energy Commission, 2009

In staff's commercial building sector forecasting model, floor space by building type (that is, retail, schools, offices, etc.) is the key driver of energy use for each specific building type. **Figure 3-15** compares total commercial floor space projections. The lower the *CED 2009* floor space projections compared to the *CED 2007* floor space estimates is caused by lower economic drivers used in the floor space model.

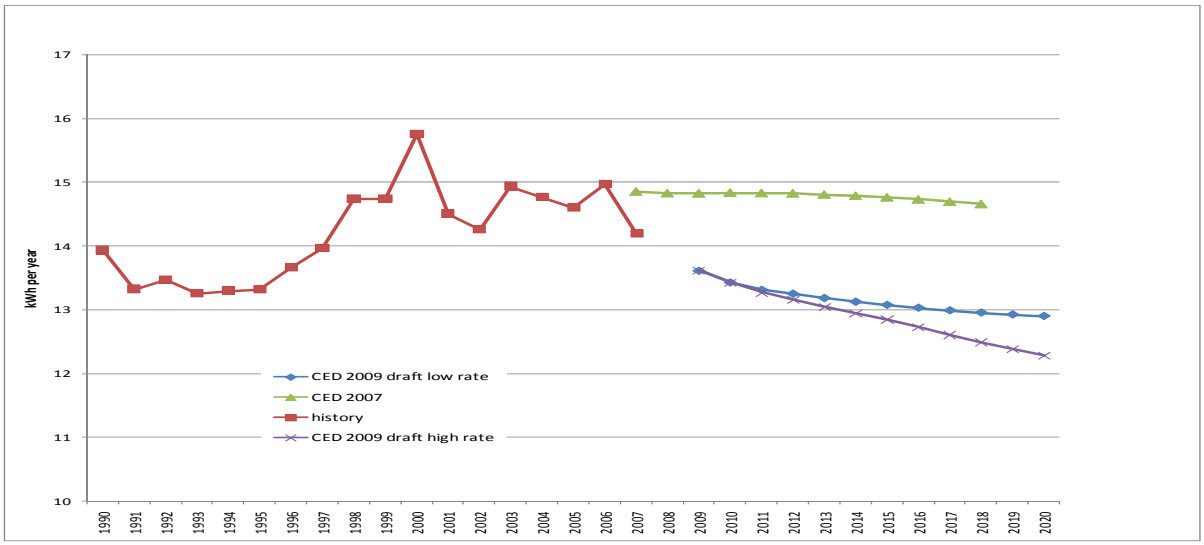
Figure 3-15: SCE Planning Area Commercial Floor Space



Source: California Energy Commission, 2009

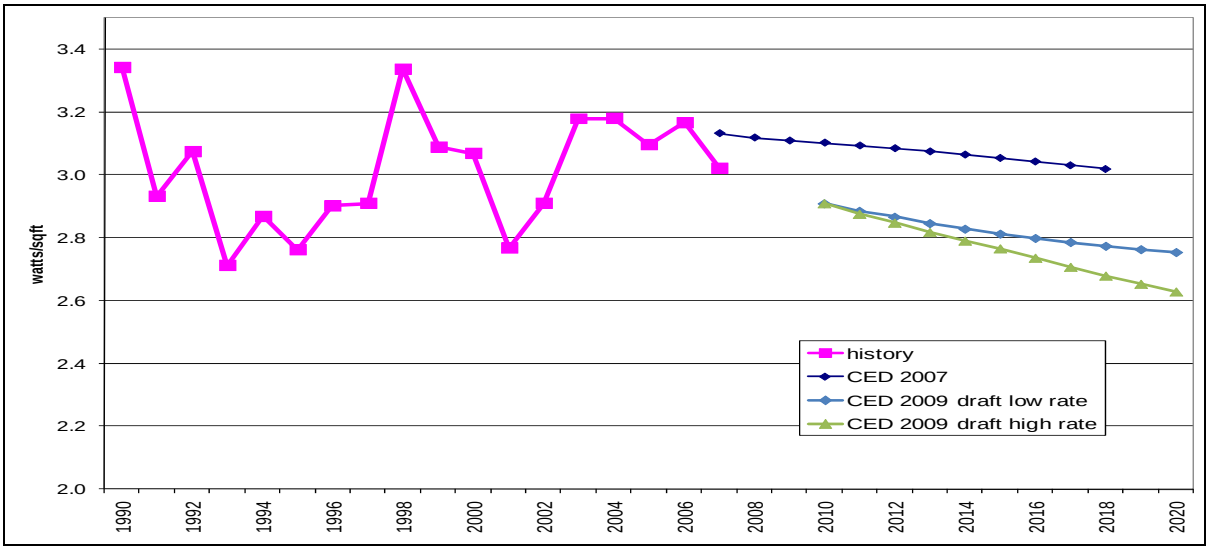
Figures 3-16 and **3-17** show historic and projected commercial sector annual and peak use per square foot, respectively. Annual use per square foot (**Figure 3-15**) starts at a lower value and declines over the forecast period at a faster rate in the *CED 2009* than in the *CED 2007* forecast for both rate scenarios. This is caused by the recent economic conditions as well as an increase in efficiency program savings. The same is true for commercial peak use, as shown in **Figure 3-16**. The lower starting values, in both instances, result from revised estimates of historic use.

Figure 3-16: SCE Planning Area Commercial kWh per Square Foot



Source: California Energy Commission, 2009

Figure 3-17: SCE Planning Area Commercial Peak watts per Square Foot

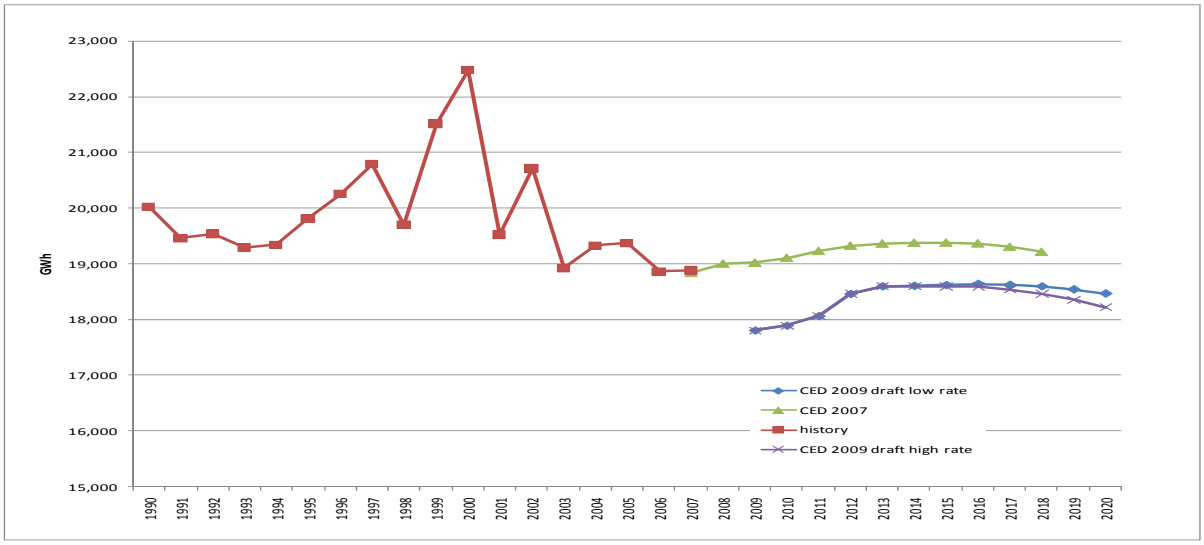


Source: California Energy Commission, 2009

Industrial Sector

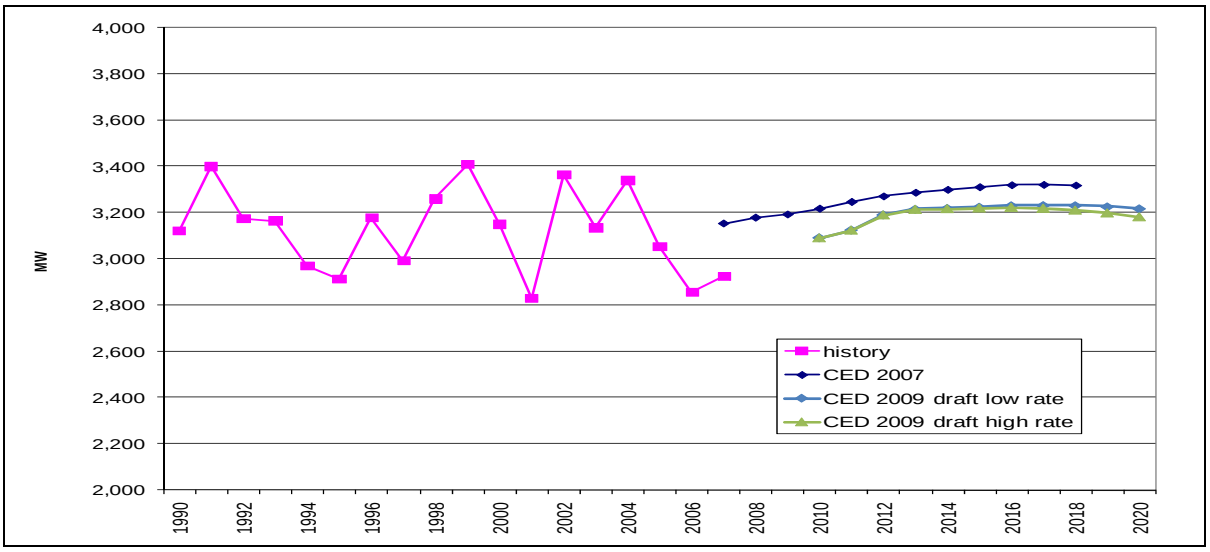
Figure 3-18 provides comparisons of the forecasts' industrial sector electricity consumption for the SCE planning area. The *CED 2009* forecast starts from a lower point than the *CED 2007* forecast and remains below the *CED 2007* forecast level throughout the forecast period. This is a result of the current economic projections used to drive the industrial forecast. **Figure 3-19** compares the industrial sector peak forecasts. Re-estimation of the industrial sector peak causes the *CED 2009* industrial sector peak to start at a lower value. Forecasted growth patterns are similar to those seen in the electricity consumption case.

Figure 3-18: SCE Planning Area Industrial Consumption



Source: California Energy Commission, 2009

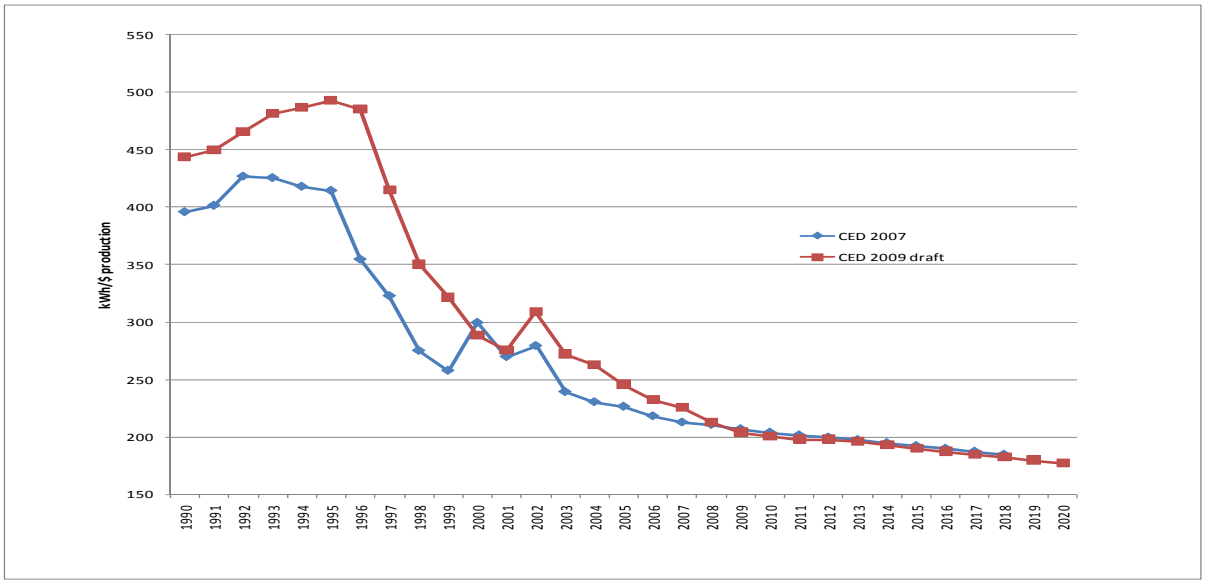
Figure 3-19: SCE Planning Area Industrial Sector Peak



Source: California Energy Commission, 2009

Figure 3-20 compares electricity use per dollar of industrial production value between the *CED 2009* and *CED 2007* forecasts. The *CED 2009* forecast is essentially the same in terms of kWh per dollar of production for the forecast period as that used in the *CED 2007* forecast.

Figure 3-20: SCE Planning Area Industrial Use per Production Unit

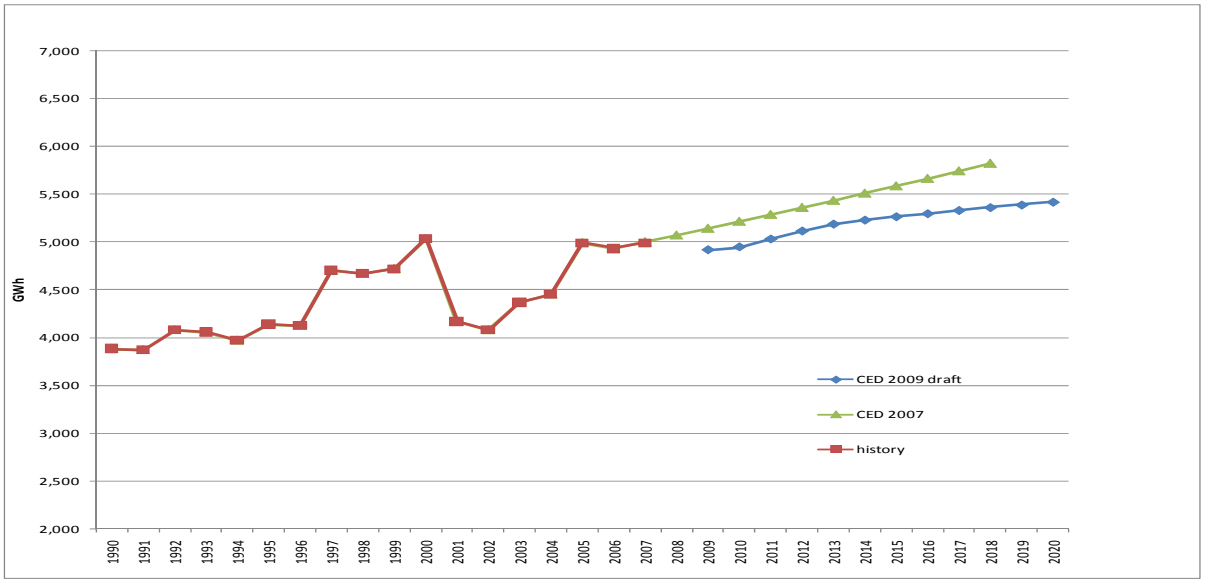


Source: California Energy Commission, 2009

Other Sectors

Figure 3-21 compares the electricity consumption forecasts for the transportation, communication, and utilities sector. The *CED 2009* transportation, communication, and utilities forecast is lower than the *CED 2007* forecast because of the revised economic and demographic drivers. The difference in growth rates of the two forecasts reflects the difference in economic projections.

Figure 3-21: SCE Planning Area Transportation, Communication, and Utilities Sector Electricity Forecasts



Source: California Energy Commission, 2009

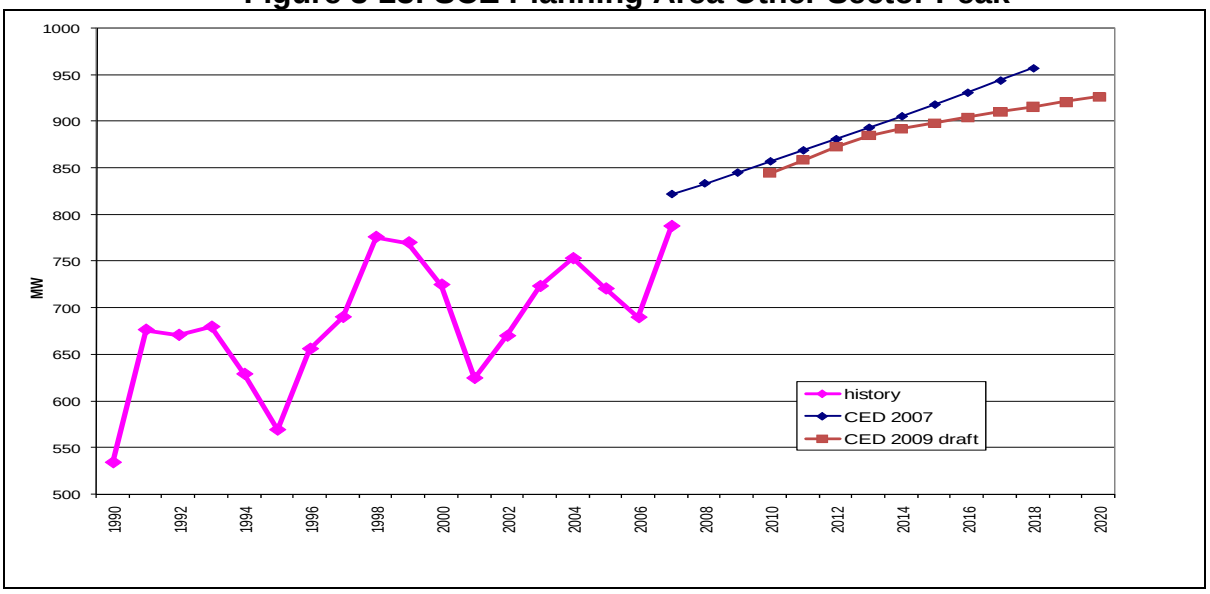
Figure 3-22 compares the electricity consumption forecasts for the agriculture and water pumping. The *CED 2009* agriculture and water pumping forecast is higher in the short than the *CED 2007* forecast because of a higher starting point. The *CED 2009* forecast then declines to a slightly lower level than the previous forecast because of lower economic and demographic projections.

Figure 3-22: SCE Planning Area Agriculture & Water Pumping Sector Forecast

Source: California Energy Commission, 2009

Figure 3-23 compares the combined peak for these sectors between the two forecasts. The *CED 2009* peak forecast is somewhat lower than the *CED 2007*, reflecting the difference in electricity consumption forecasts.

Figure 3-23: SCE Planning Area Other Sector Peak

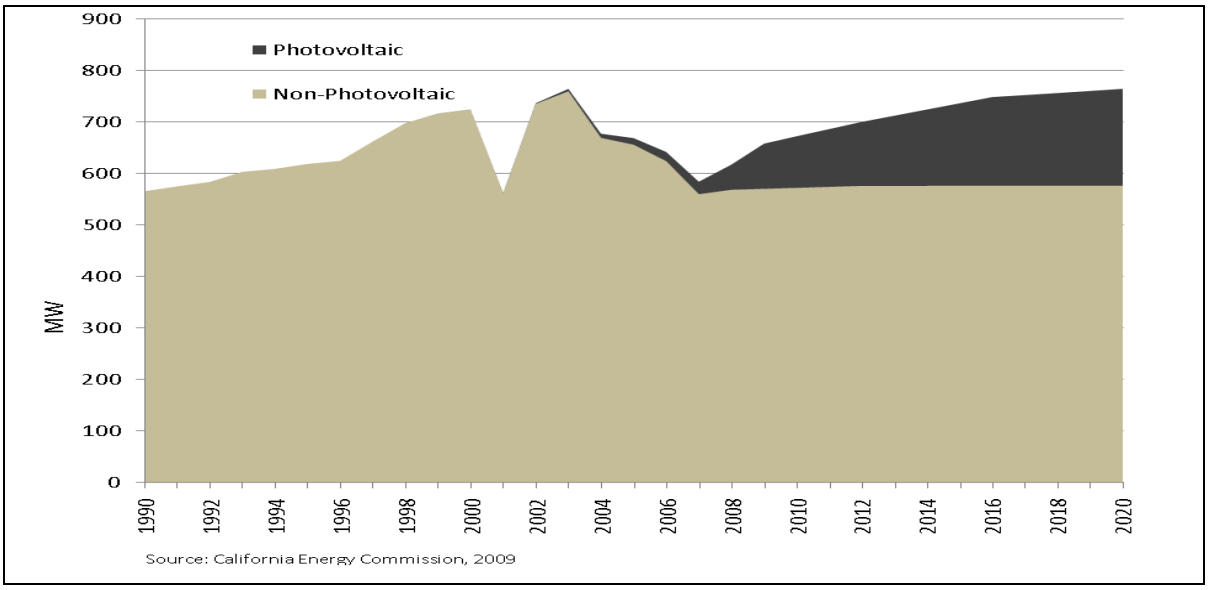


Source: California Energy Commission, 2009

Self-Generation

The peak demand forecast is reduced by self generation, including the effects of the SGIP, CSI, and other programs, as discussed in Chapter 1. The effects of these programs are forecast based on recent trends in installations. **Figure 3-24** shows the staff draft forecast of peak impacts from photovoltaic and non-photovoltaic self generation. Based on current trends, staff projects about 190 MW of peak reduction from photovoltaic systems by 2020.

Figure 3-24: SCE Planning Area Self Generation Peak Forecasts



Conservation/Efficiency Impacts

Staff spent a great deal of time refining methods to account for energy efficiency and conservation impacts while preparing this forecast, particularly for utility efficiency programs. **Tables 3-2** and **3-3** show electricity consumption and peak savings estimates for selected years, for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and certain market trends not directly related to programs or standards. Savings are measured against a baseline before 1975, so they incorporate more than 30 years of impacts from rate changes and standards. Chapter 8 provides much more detail on staff work related to energy efficiency and conservation.

Table 3-2: SCE Planning Area Electricity Consumption Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (GWh)							
Building Standards	1147	1420	1591	1817	2051	2370	2786
Appliance Standards	1223	2318	3033	3699	4044	4470	4969
Utility and Public Agency Programs	176	207	577	2558	3480	2767	1047
Naturally Occurring Savings	9	15	20	26	31	561	1950
Total Residential Savings	2556	3961	5221	8100	9606	10168	10752
Commercial Energy Savings (GWh)							
Building Standards	515	1099	1638	2319	2631	3225	3989
Appliance Standards	348	776	1096	1477	1628	1889	2222
Utility and Public Agency Programs*	89	581	888	1077	1736	1439	1105
Naturally Occurring Savings	2647	1645	3676	2879	4293	4788	5821
Total Commercial Savings	3600	4101	7298	7752	10288	11341	13138
Total Energy Savings	6156	8061	12519	15852	19894	21508	23890

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

Table 3-3: SCE Planning Area Electricity Peak Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (MW)							
Building Standards	315	411	415	521	620	741	900
Appliance Standards	336	672	791	1061	1222	1397	1605
Utility and Public Agency Programs	48	60	151	734	1052	865	338
Naturally Occurring Savings	3	4	5	7	9	175	630
Total Residential Savings	702	1147	1361	2323	2904	3178	3472
Commercial Energy Savings (MW)							
Building Standards	124	249	349	480	550	669	821
Appliance Standards	84	176	233	306	340	392	458
Utility and Public Agency Programs*	21	132	189	223	363	299	228
Naturally Occurring Savings	635	372	783	596	897	993	1199
Total Commercial Savings	864	929	1554	1606	2150	2353	2705
Total Energy Savings	1566	2076	2915	3928	5054	5531	6178

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

CHAPTER 4: San Diego Gas & Electric Planning Area

The San Diego Gas & Electric (SDG&E) planning area includes SDG&E bundled retail customers and customers served by various energy service providers (ESPs) using the SDG&E distribution system to deliver electricity to end users.

This chapter is organized the same as Chapters 2 and 3. First, forecasts of total and per capita consumption and peak loads for the planning area are presented. For perspective, *CED 2009* forecast values are compared to those in the *CED 2007* forecast. The forecasted load factor, jointly determined by the consumption and peak load estimates, is also discussed. Then, sector consumption and peak load forecasts are presented and compared to the sector level *CED 2007* forecast values.

CED 2007 assumed constant electricity rates throughout the forecast period. For this forecast, three price scenarios were developed for electricity rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010, while the "mid-rate" case assumed 15 percent higher rates over the same period. In the low-rate case, rates remained at 2010 levels through 2020. Chapter 1 provides more details.

Forecast Results

Table 4-1 compares the planning area electricity consumption and peak demand forecasts for selected years. Both the *CED 2009* low and high-rate scenarios are compared to the *CED 2007* forecast. The draft forecast scenarios are lower that the *CED 2007* forecast for both electricity consumption and peak demand over the entire forecast period. This is caused by lower economic assumptions and increased savings from efficiency programs. The decline in the peak forecast is less than the decline in consumption because most of the efficiency programs have a greater impact on overall consumption than peak.

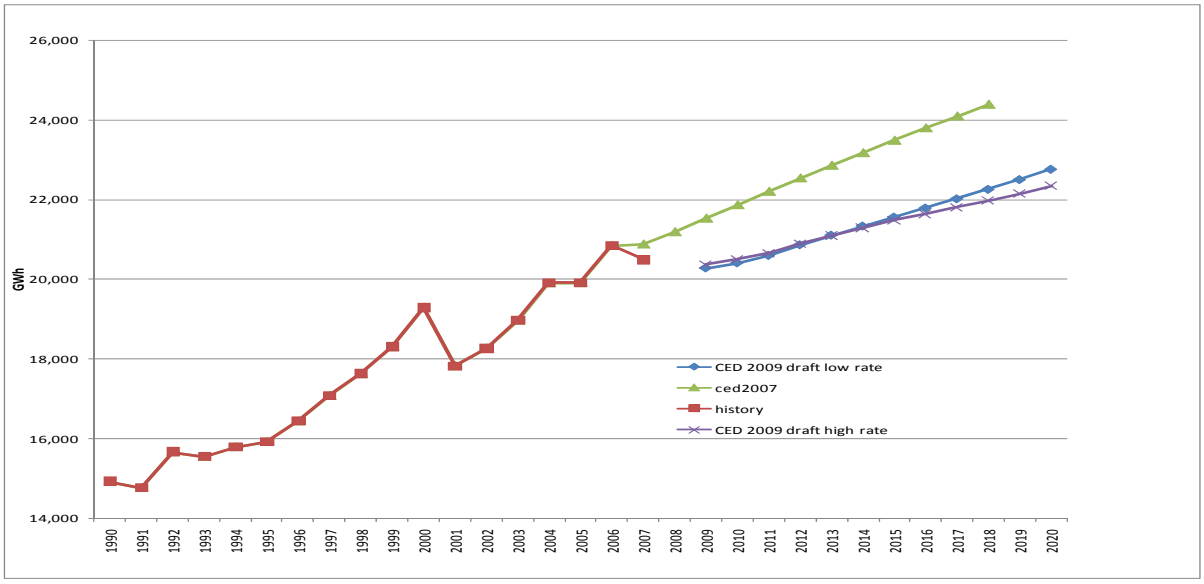
Table 4-1: SDG&E Planning Area Forecast Comparison

Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	14,926	14,926	14,926	0.00%	0.00%
2000	19,294	19,294	19,294	0.00%	0.00%
2007	21,019	20,493	20,493	-2.50%	-2.50%
2010	21,991	20,502	20,502	-6.77%	-6.77%
2015	23,643	21,660	21,478	-8.39%	-9.15%
2018	24,567	22,364	21,979	-8.97%	-10.54%
Average Annual Growth Rates					
1990-2000	2.60%	2.60%	2.60%		
2000-2007	1.23%	1.21%	1.21%		
2007-2010	1.52%	0.02%	0.02%		
2010-2018	1.39%	1.09%	0.87%		
Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	2,961	2,961	2,961	0.00%	0.00%
2000	3,471	3,471	3,471	0.00%	0.00%
2007	4,507	4,664	4,664	3.48%	3.48%
2010	4,714	4,621	4,621	-1.97%	-1.97%
2015	5,023	4,923	4,884	-1.99%	-2.77%
2018	5,247	5,115	5,032	-2.52%	-4.10%
Average Annual Growth Rates					
1990-2000	1.60%	1.60%	1.60%		
2000-2007	5.36%	6.09%	6.09%		
2007-2010	1.51%	-0.31%	-0.31%		
2010-2018	1.35%	1.28%	1.07%		
Historic values are shaded					

Source: California Energy Commission, 2009

As shown in **Figure 4-1**, the *CED 2009* consumption forecast is about over 9 percent lower than the *CED 2007* projection by the end of the forecast horizon for the low-rate scenario and about 11 percent lower for the high-rate scenario. The lower forecasts are caused by lower economic and demographic projections as well as increased assumptions about increased savings from energy efficiency programs.

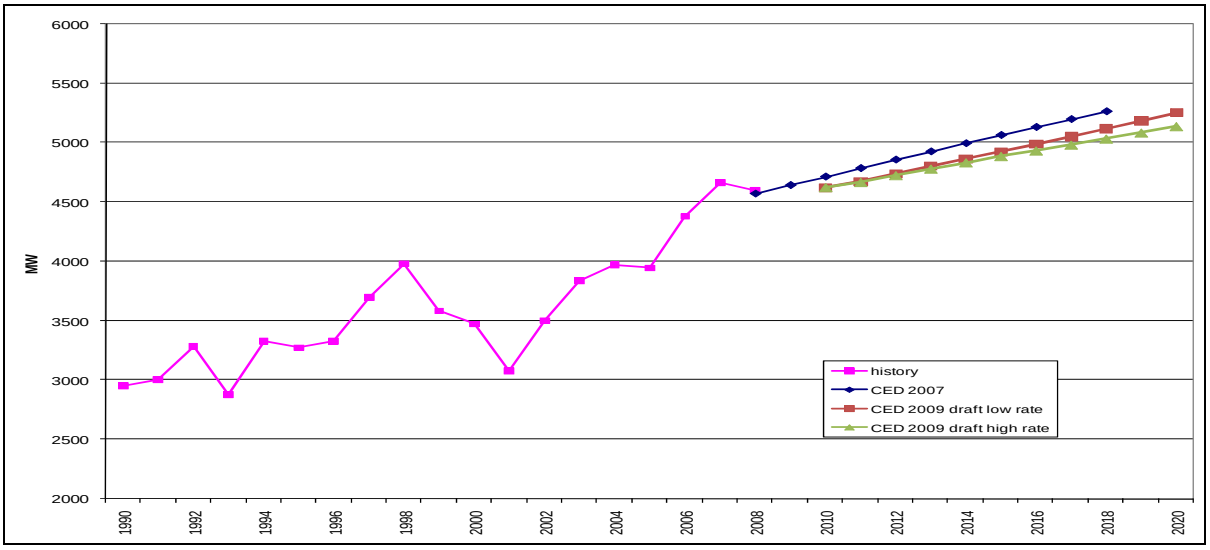
Figure 4-1: SDG&E Planning Area Electricity Forecast



Source: California Energy Commission, 2009

The *CED 2009* SDG&E planning area peak demand forecast is about 2.0 percent lower in the beginning of the forecast period as shown in **Figure 4-2**. . By the end of the forecast period the *CED 2009* forecast is about 2.5 percent lower than the *CED 2007* forecast.

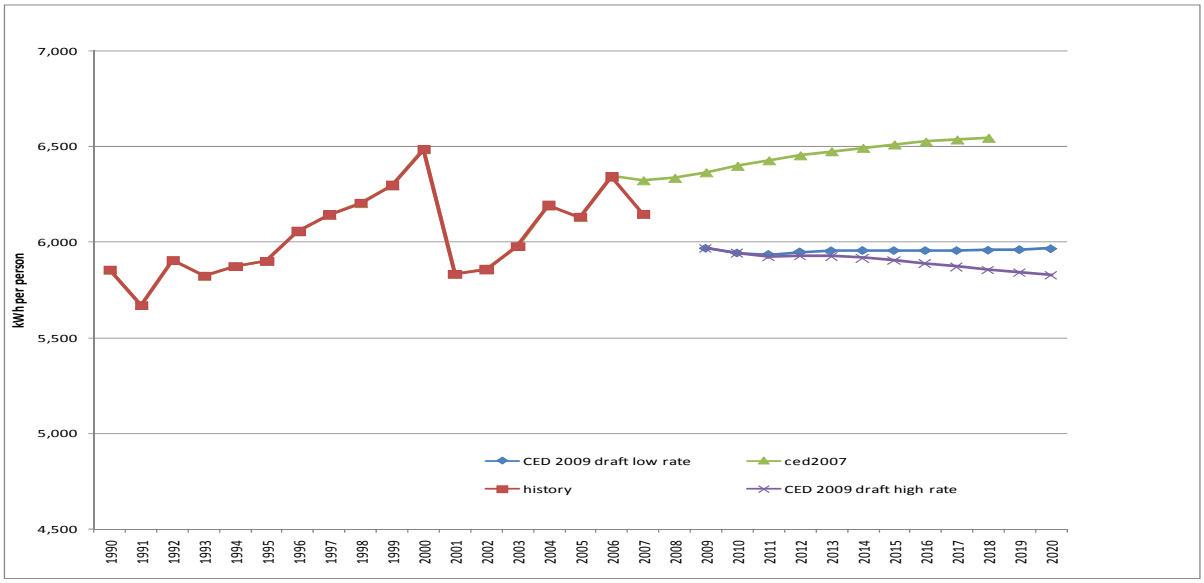
Figure 4-2: SDG&E Planning Area Peak



Source: California Energy Commission, 2009

Figure 4-3 compares forecasted per capita residential electricity consumption. Per capita consumption in the *CED 2009* forecast is significantly lower for both price scenarios than the *CED 2007* forecast. Both scenarios start lower than the *CED 2007* forecast in 2010. The low-rate scenario maintains a relatively flat trajectory over the forecast period while the high-rate scenario produces a decline in per capita consumption over the entire forecast period, resulting in reduced per capita consumption compared to the previous forecast by the end of the forecast period for both scenarios. This reduction is caused by a combination of the aforementioned economic/demographic forecast assumptions and increased savings from energy efficiency programs.

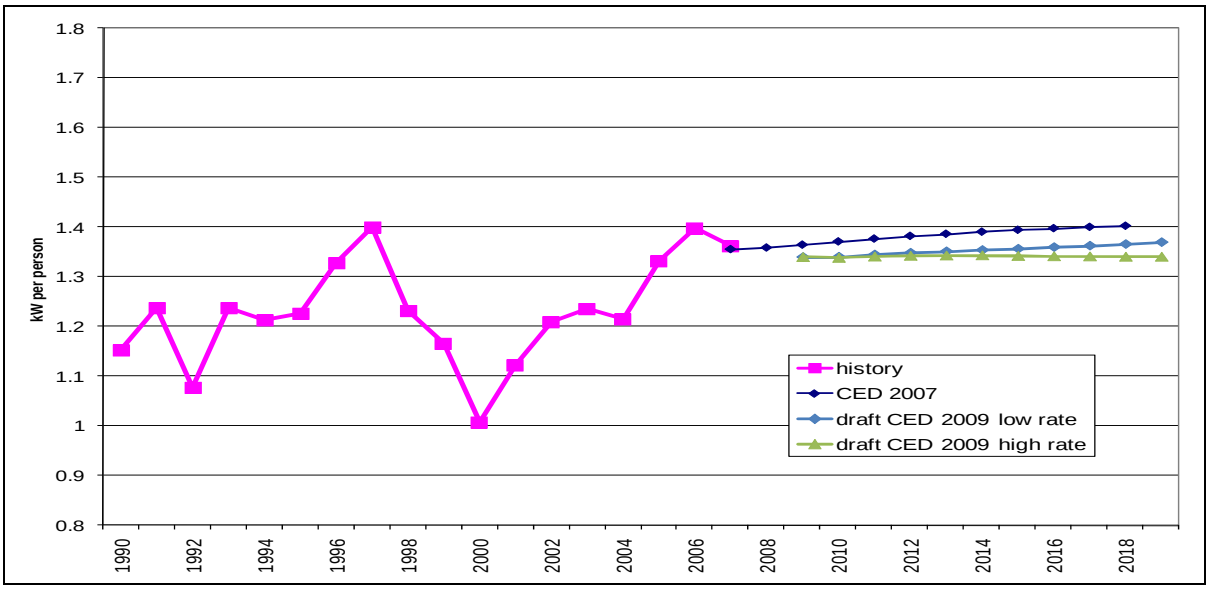
Figure 4-3: SDG&E Planning Area per Capita Electricity Consumption



Source: California Energy Commission, 2009

Per capita peak demand, shown in **Figure 4-4**, is lower over the entire forecast period because of a lower starting point. The *CED 2009* low price scenario grows at the same rate as the *CED 2007* forecast while the *CED 2009* high price scenario remains constant over the forecast period.

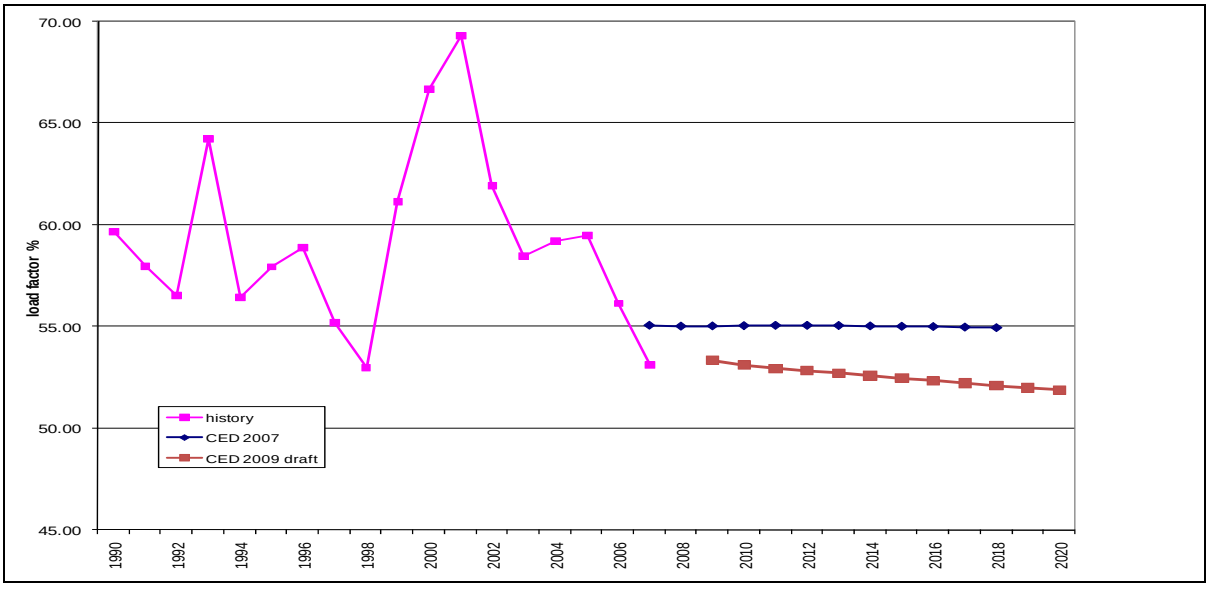
Figure 4-4: SDG&E Planning Area per Capita Peak Demand



Source: California Energy Commission, 2009

Figure 4-5 compares the respective forecast load factors. High load factors observed from 1998-2005 are a product of lower-than-average peak temperatures and reaction to the energy crisis. The projected load factor, based on higher, 1-in-2 peak temperatures and a return to normal air conditioning use patterns, should be lower than these recent values. The forecasted load factor declines slightly, reflecting an increase in air conditioning use in the SDG&E territory.

Figure 4-5: SDG&E Planning Area Peak Load Factor



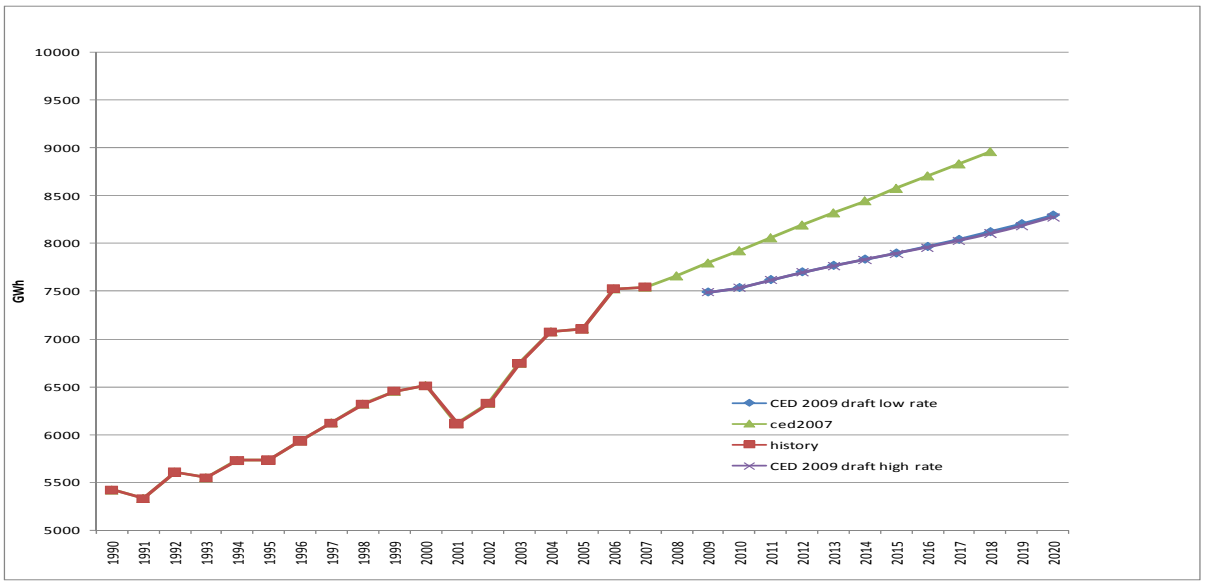
Source: California Energy Commission, 2009

Sector Level Results and Input Assumptions

Residential

Figure 4-6 compares between the *CED 2009* and *CED 2007* SDG&E planning area residential forecasts. The *CED 2009* forecast is lower over the entire forecast period than the *CED 2007* forecast. This is caused by lower household income projections and an increase in efficiency savings over the forecast period.

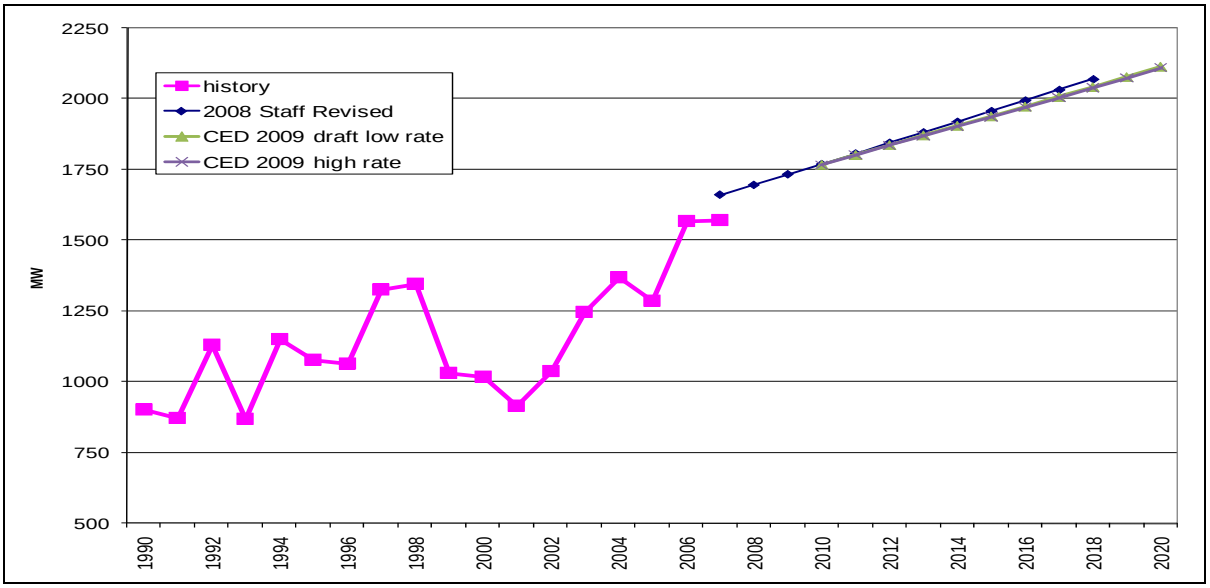
Figure 4-6: SDG&E Planning Area Residential Consumption



Source: California Energy Commission, 2009

Figure 4-7 compares the *CED 2009* and *CED 2007* residential peak demand forecasts. The *CED 2009* forecast is only slightly lower than the *CED 2007* forecast. This is in contrast to the difference in consumption forecasts because there is little change in assumptions on air conditioner usage.

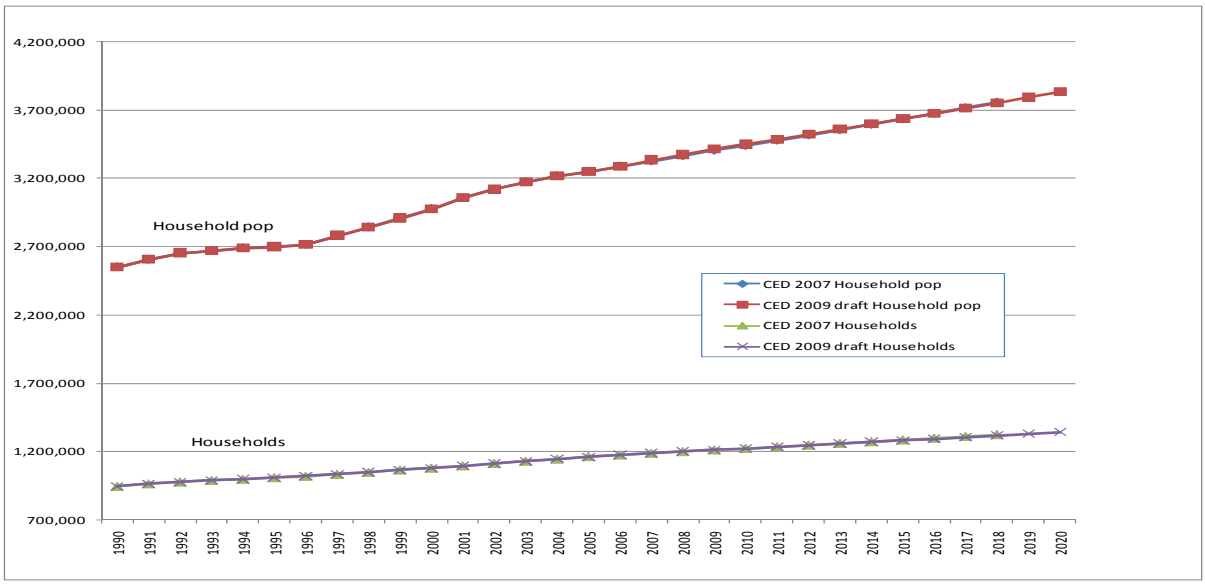
Figure 4-7: SDG&E Planning Area Residential Peak



Source: California Energy Commission, 2009

Figures 4-8, 4-9 and **4-10** compare the residential drivers used in the *CED 2009* forecast with those used in *CED 2007*. **Figure 4-8** provides comparisons of household population and total household projections. There is very little change in either of these drivers over the forecast period.

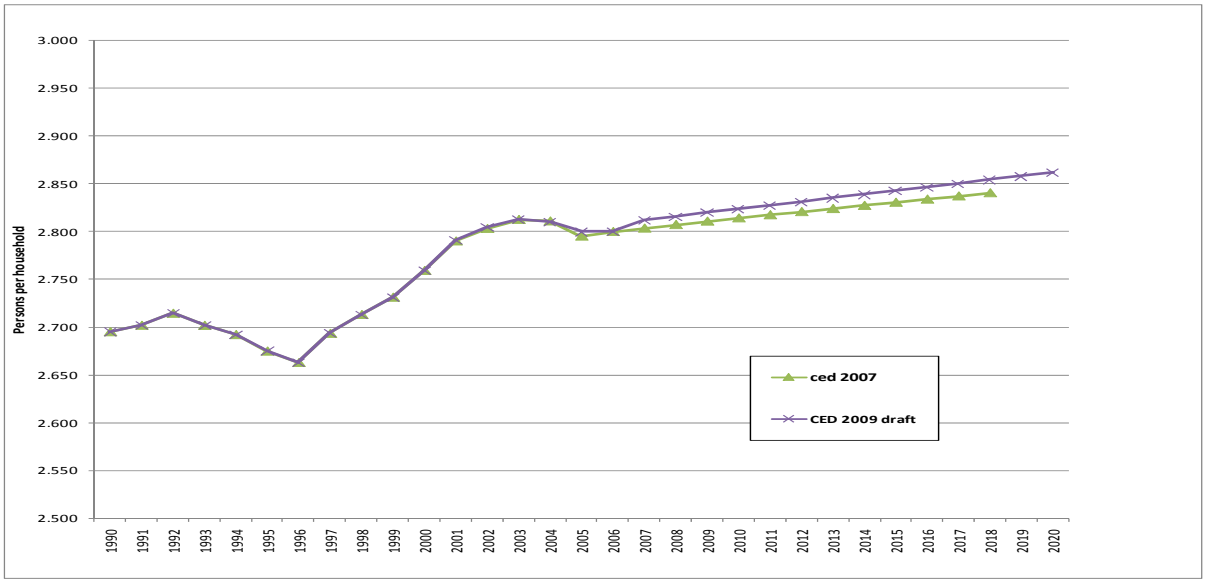
Figure 4- 8: SDG&E Planning Area Household and Household Population Projections



Source: California Energy Commission, 2009

Figure 4-9 provides comparisons of persons per household projections between the two forecasts. There is slight increase in the forecast of persons per household in the *CED 2009* forecast compared with the *CED 2007* forecast.

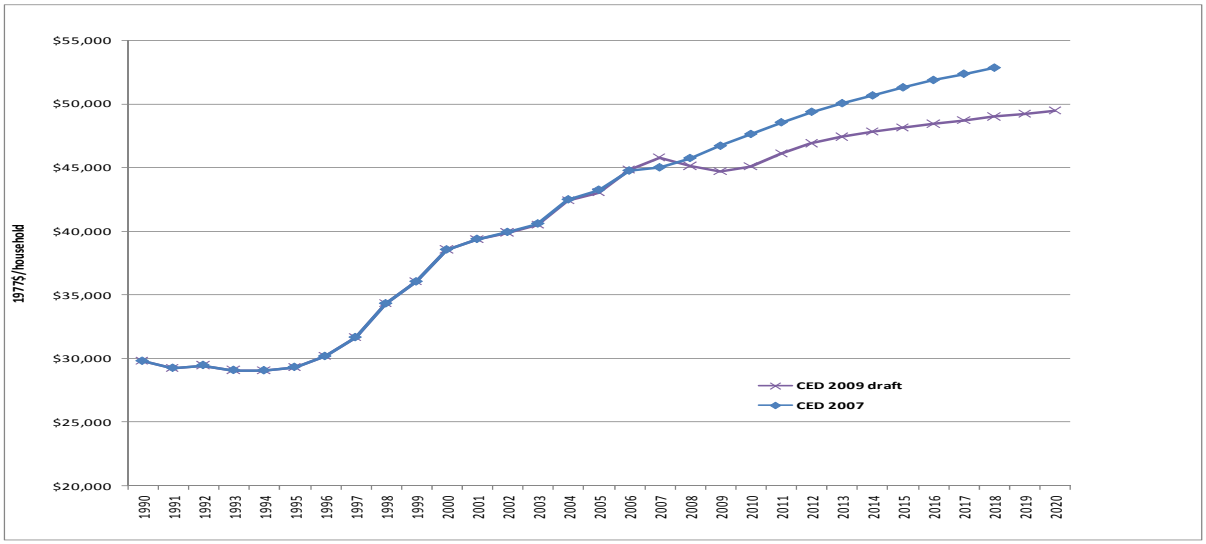
Figure 4- 9: SDG&E Planning Area Persons per Household Projections



Source: California Energy Commission, 2009

Figure 4-10 compares household income between the two forecasts. The *CED 2009* projection, using a more recent forecast from Economy.com, is lower in the short term because of recent economic conditions. This also translates to a lower forecast throughout the forecast period.

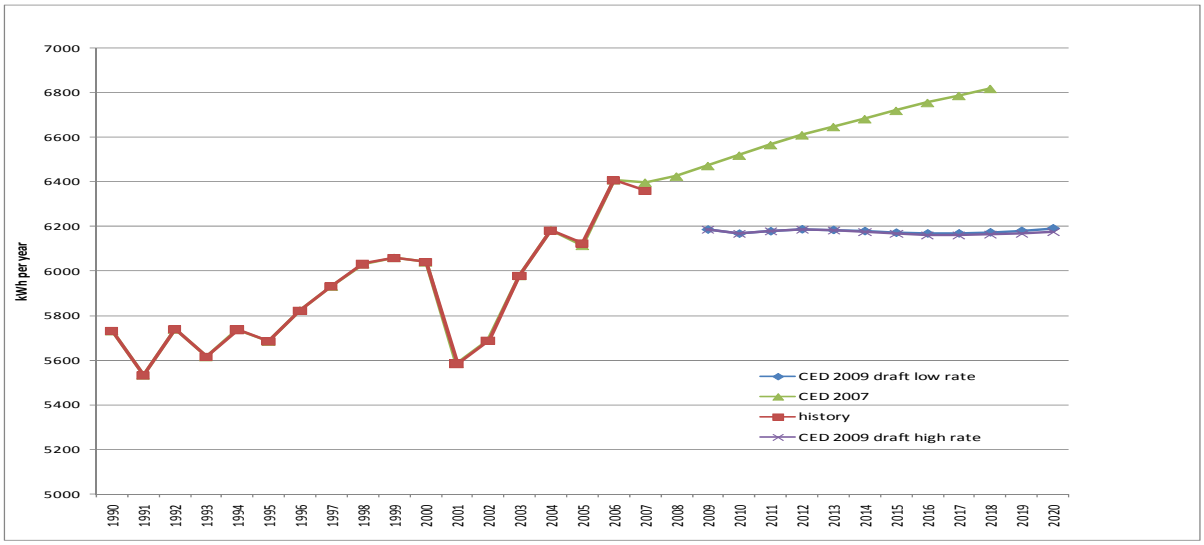
Figure 4-10: SDG&E Planning Area Household Income Projections



Source: California Energy Commission, 2009

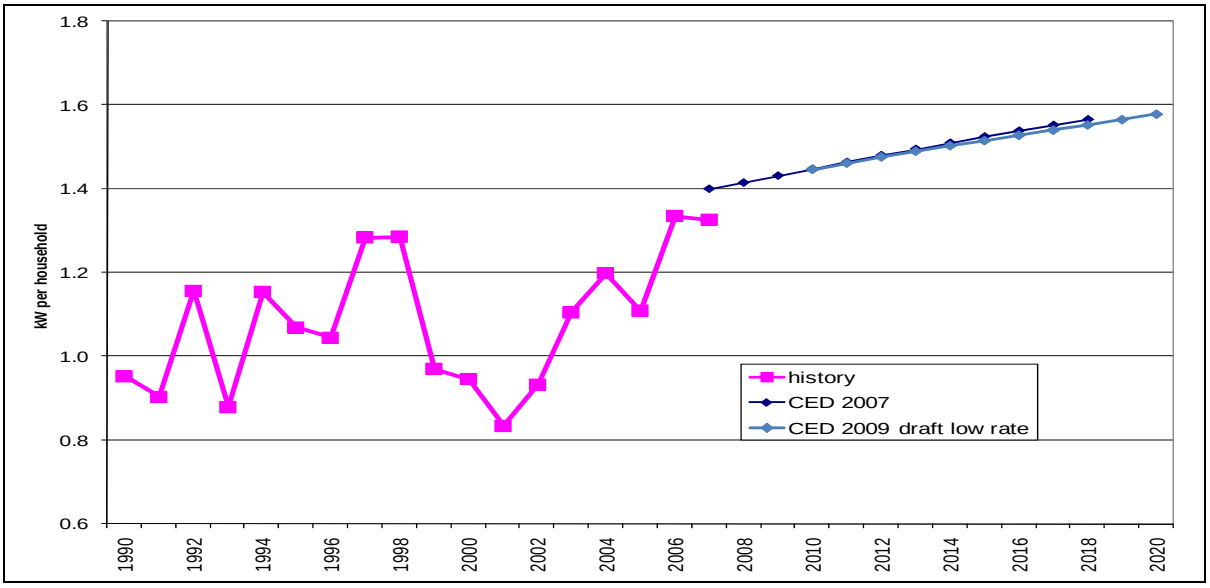
Figures 4-11 and **4-12** compare residential use per household and residential peak use per household, respectively. The *CED 2009* forecast of use per household (**Figure 4-11**) is significantly lower than that projected in CED 2006. This is caused by a combination of lower household income projections and the increase of residential efficiency savings primarily caused by reductions in lighting use per household. In contrast, differences in peak use per household (**Figure 4-12**) are very slight because most of the consumption savings does not directly translate into peak savings.

Figure 4-11: SDG&E Planning Area Use per Household



Source: California Energy Commission, 2009

Figure 4-12: SDG&E Planning Area Peak Use per Household

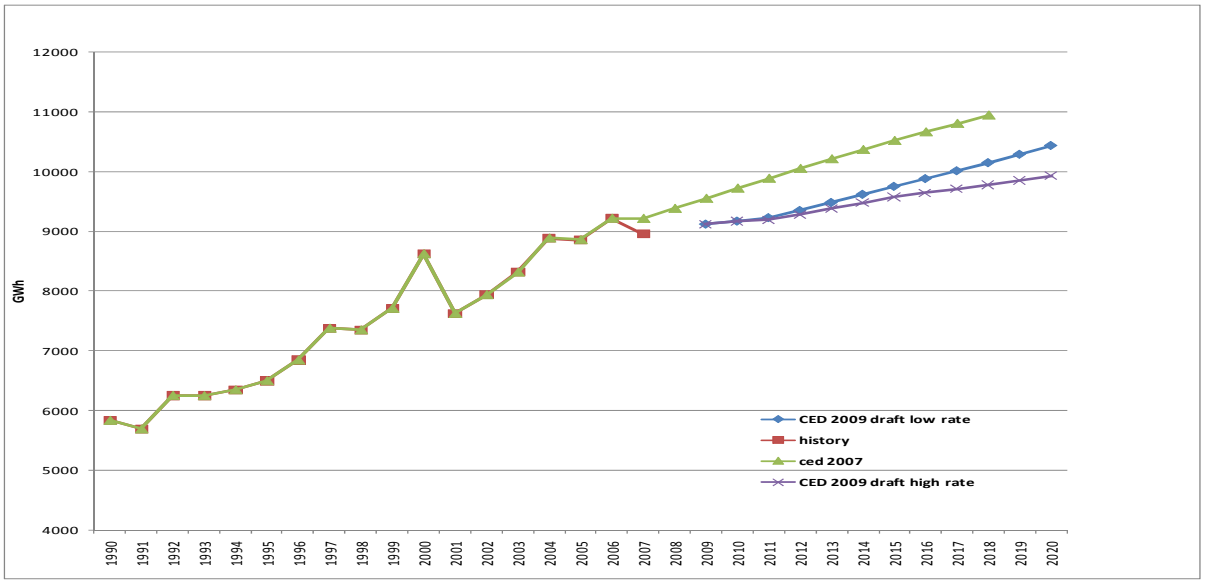


Source: California Energy Commission, 2009

Commercial Building Sector

Figures 4-13 and **4-14** compare the commercial building sector forecasts. In **Figure 4-13**, both the low-rate and high rate *CED 2009* consumption forecasts are lower than the *CED 2007* counterpart because of lower economic projections and increased savings from efficiency programs. The growth rates of the *CED 2009* low-rate forecast is similar to that of the *CED 2007* forecast in the mid to long term, but growth rate of the *CED 2009* high-rate forecast is lower over the entire forecast period.

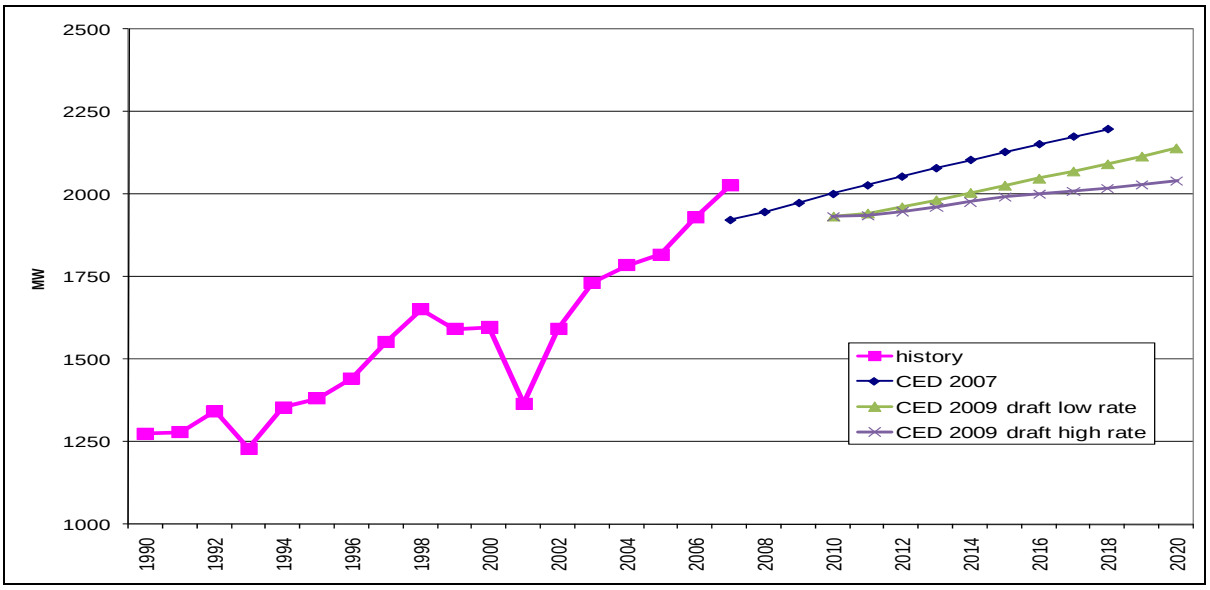
Figure 4-13: SDG&E Planning Area Commercial Consumption



Source: California Energy Commission, 2009

Figure 4-14 compares the commercial building sector peak demand forecasts. Differences in the peak forecasts are similar to those in the consumption forecasts.

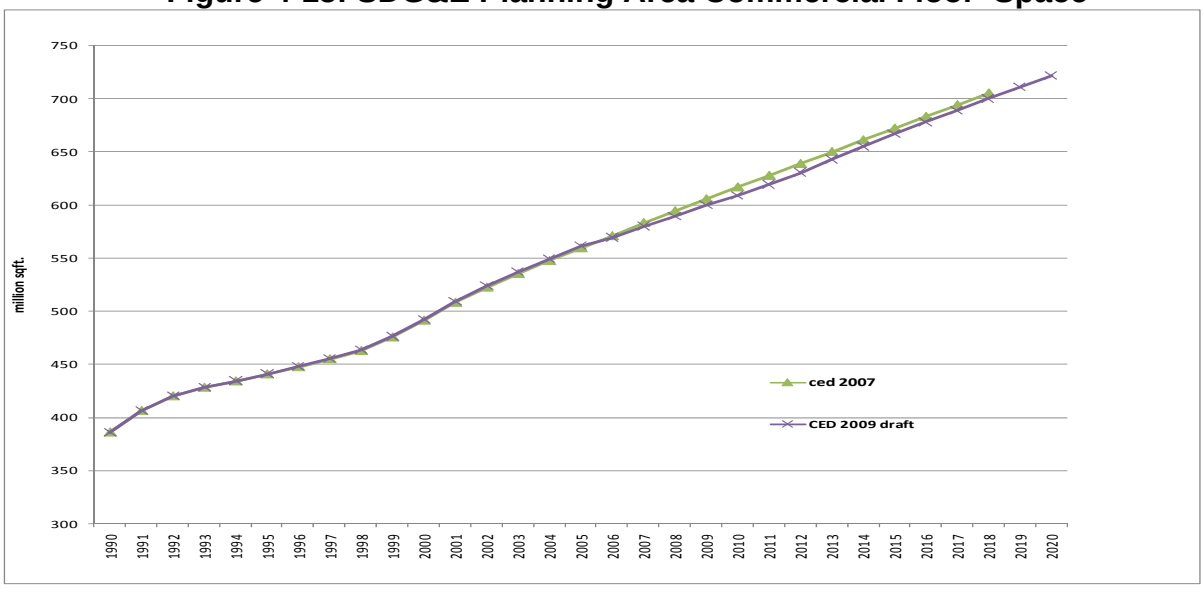
Figure 4-14: SDG&E Planning Area Commercial Sector Peak



Source: California Energy Commission, 2009

In staff's commercial building sector forecasting model, floor space by building type (that is, retail, schools, offices, etc.) is the key driver of energy use for each specific building type. **Figure 4-15** compares total commercial floor space projections. The small difference between the *CED 2009* and the *CED 2007* floor space forecasts is caused by lower economic drivers in the floor space model.

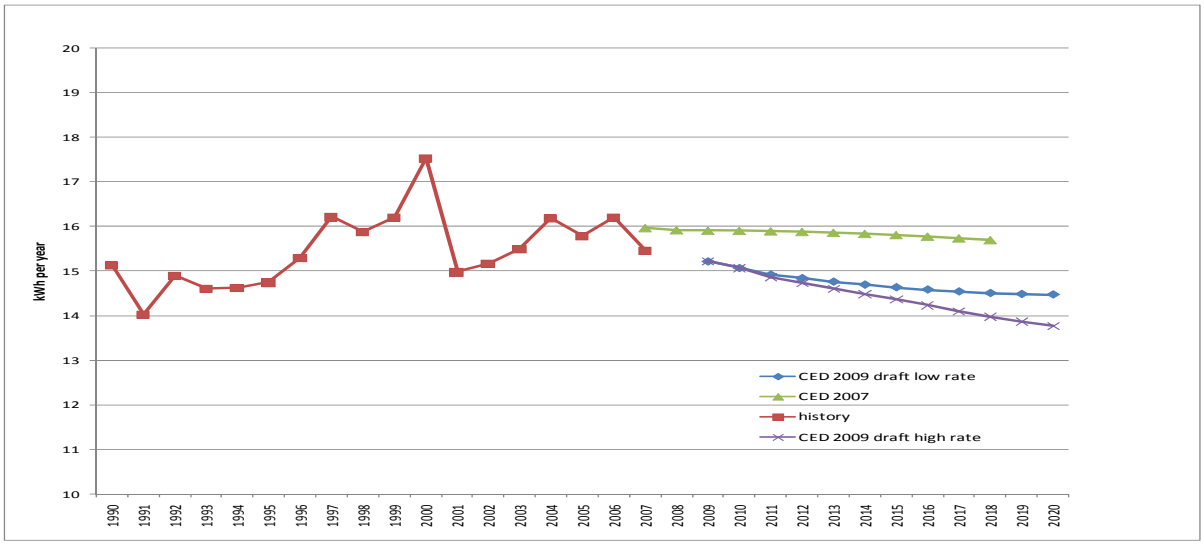
Figure 4-15: SDG&E Planning Area Commercial Floor Space



Source: California Energy Commission, 2009

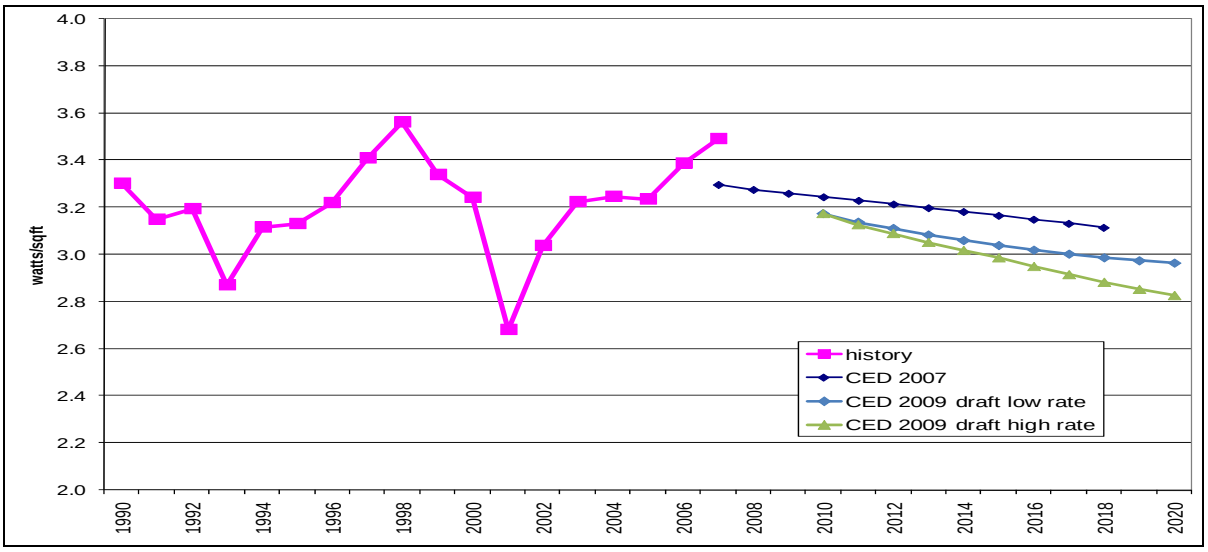
Historic and projected commercial sector annual and peak use per square foot are shown in **Figures 4-16** and **4-17**, respectively. Changes in annual use per square foot are based on the historic floor space estimates presented in **Figure 4-15**. Use per square foot (**Figure 4-16**) in the *CED 2009* forecast declines at a faster rate over the forecast period for both rate scenarios than in the *CED 2007* forecast as does commercial peak per square foot (**Figure 4-17**). Both the energy and peak forecasts decline over the forecast period because of projected commercial building and appliance standards impacts as well as increased efficiency program savings.

Figure 4-16: SDG&E Planning Area Commercial kWh per Square Foot



Source: California Energy Commission, 2009

Figure 4-17: SDG&E Planning Area Commercial Watts per Square Foot

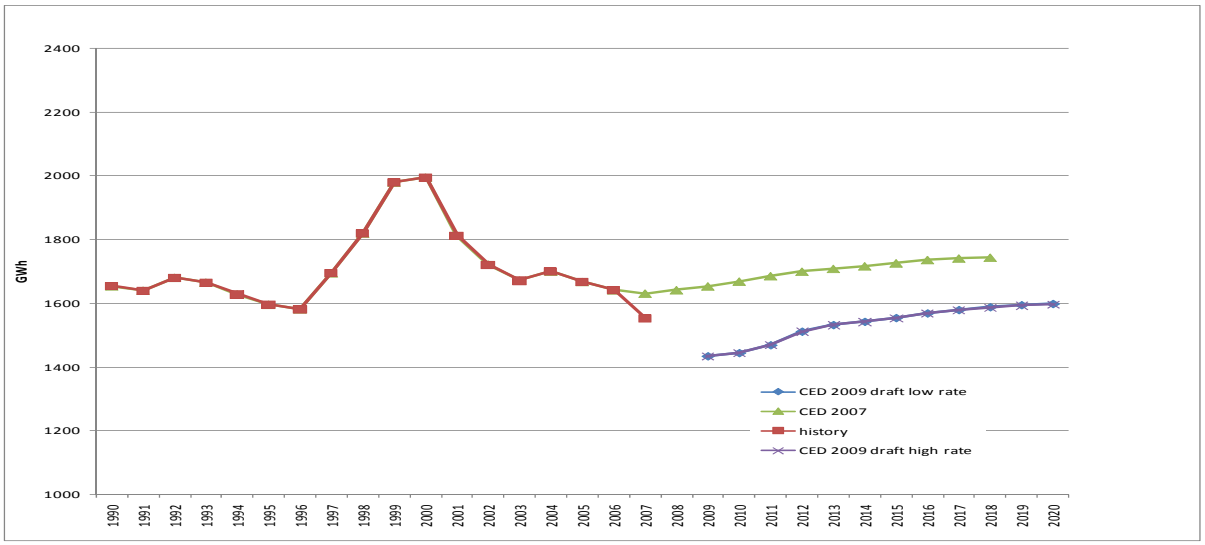


Source: California Energy Commission, 2009

Industrial Sector

Figure 4-18 compares the industrial sector electricity consumption forecasts for the SDG&E planning area. The *CED 2009* forecast is lower throughout the entire forecast period primarily because it is based on a lower industrial economic forecast.

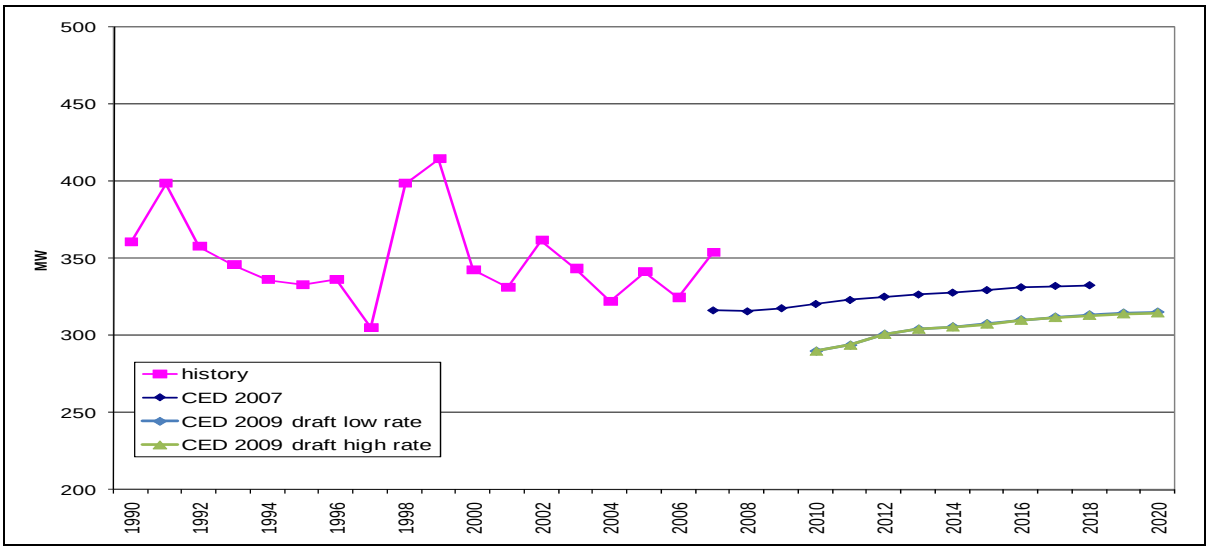
Figure 4-18: SDG&E Planning Area Industrial Consumption



Source: California Energy Commission, 2009

Figure 4-19 compares the industrial sector peak forecasts. The *CED 2009* peak is also lower throughout the forecast period as a result of the lower consumption forecast.

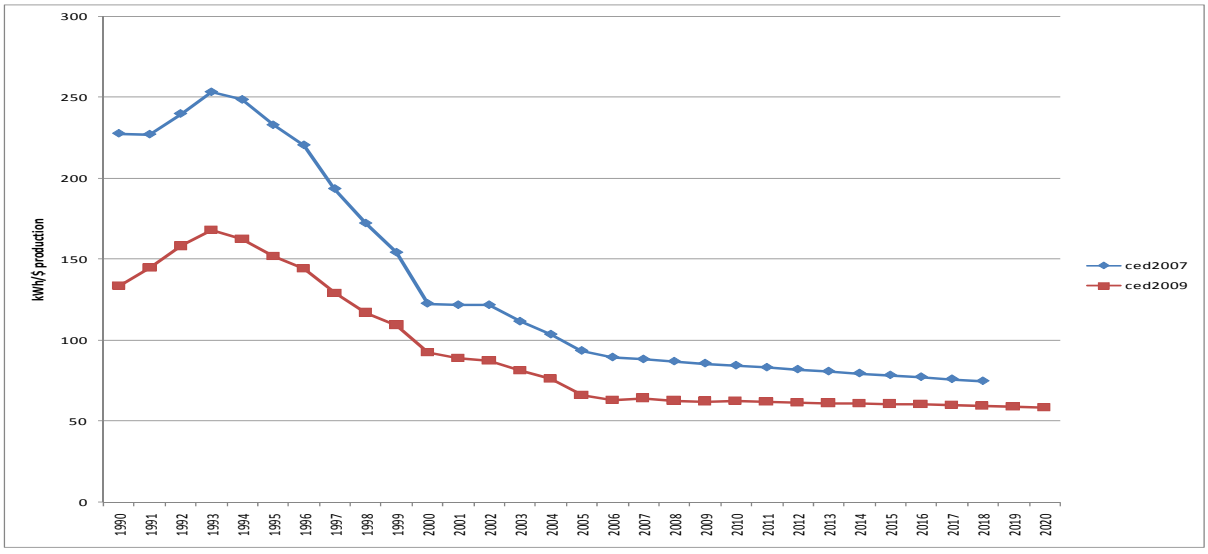
Figure 4-19: SDG&E Planning Area Industrial Sector Peak



Source: California Energy Commission, 2009

Figure 4-20 compares use per dollar value of production between the *CED 2009* and *CED 2007* forecasts. The difference in kWh per dollar of industrial value added in the *CED 2008* staff draft and CED 2006 industrial forecasts, especially in the early years, is caused by different starting points. These points differ as a result of the unclassified electricity sales distribution process that must occur in every forecast cycle. Also, Economy.com has revised the historic industrial production data used for the forecast.

Figure 4-20: SDG&E Planning Area Industrial Use Per Production Unit



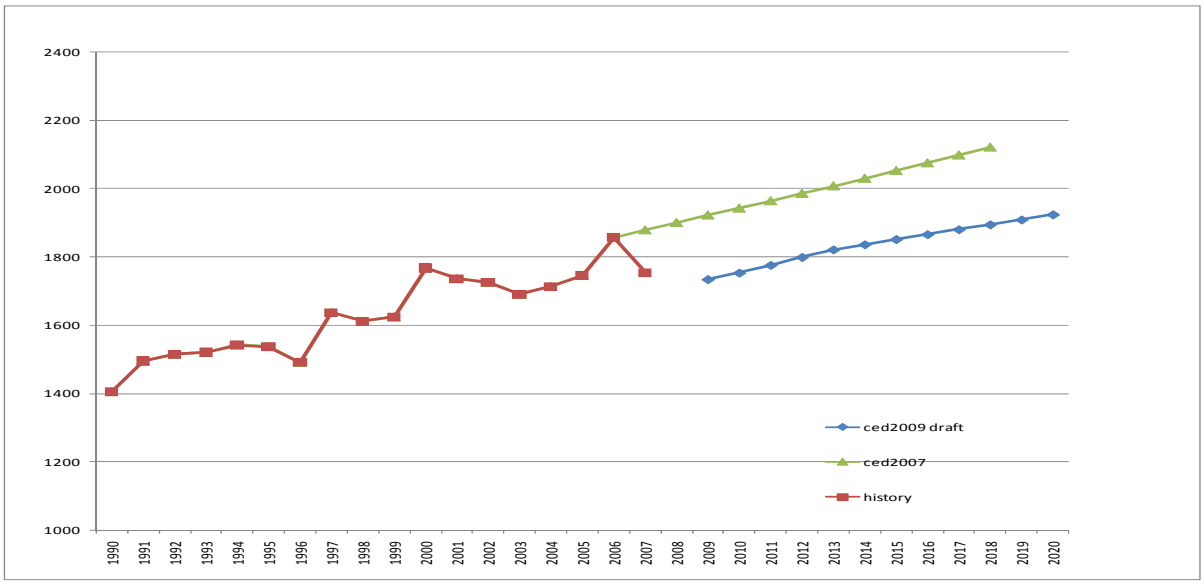
Source: California Energy Commission, 2009

Other Sectors

Figures 4-21 and **4-22** compare the remaining sector electricity consumption forecasts. Figure 4-21 compares the transportation, communication, and utilities (TCU) sector forecasts. The *CED 2009* forecast is lower than the *CED 2007* forecast because of a lower historic starting point.

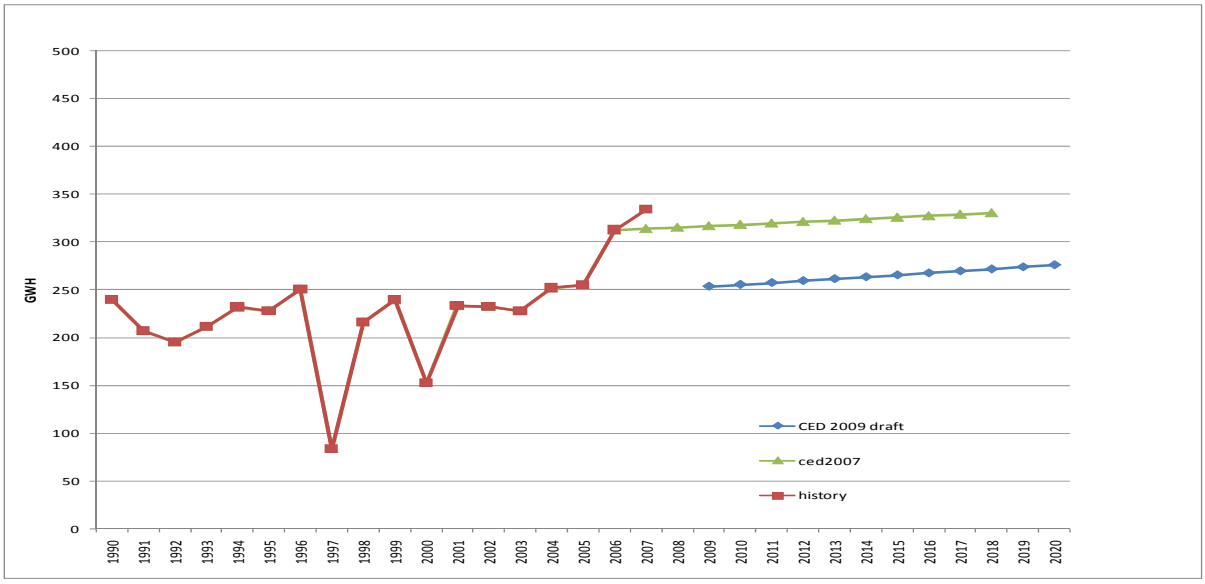
Figure 4-22 provides comparisons of the agriculture and water pumping sector forecasts. The *CED 2009* staff draft agriculture and water pumping forecast is lower than the *CED 2007* because of higher projected electricity rates.

Figure 4-21: SDG&E Planning Area Transportation, Communication & Utilities Sector Electricity Consumption



Source: California Energy Commission, 2009

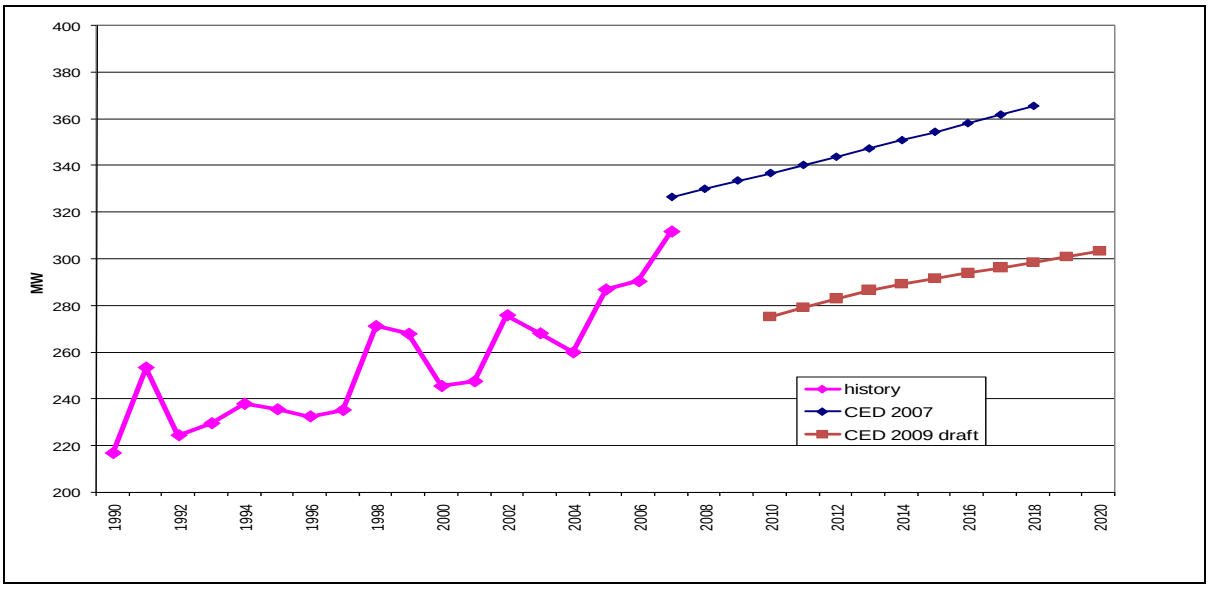
Figure 4-22: SDG&E Planning Area Agriculture & Water Pumping Forecasts



Source: California Energy Commission, 2009

Figure 4-23 compares the combined Other Sector peaks for the *CED 2009* and CED 2006 forecasts. The CED 2006 forecast starts at a lower level, as does the consumption forecast. Both forecasts have a similar growth rate.

Figure 4-23: SDG&E Planning Area Other Sector Peak

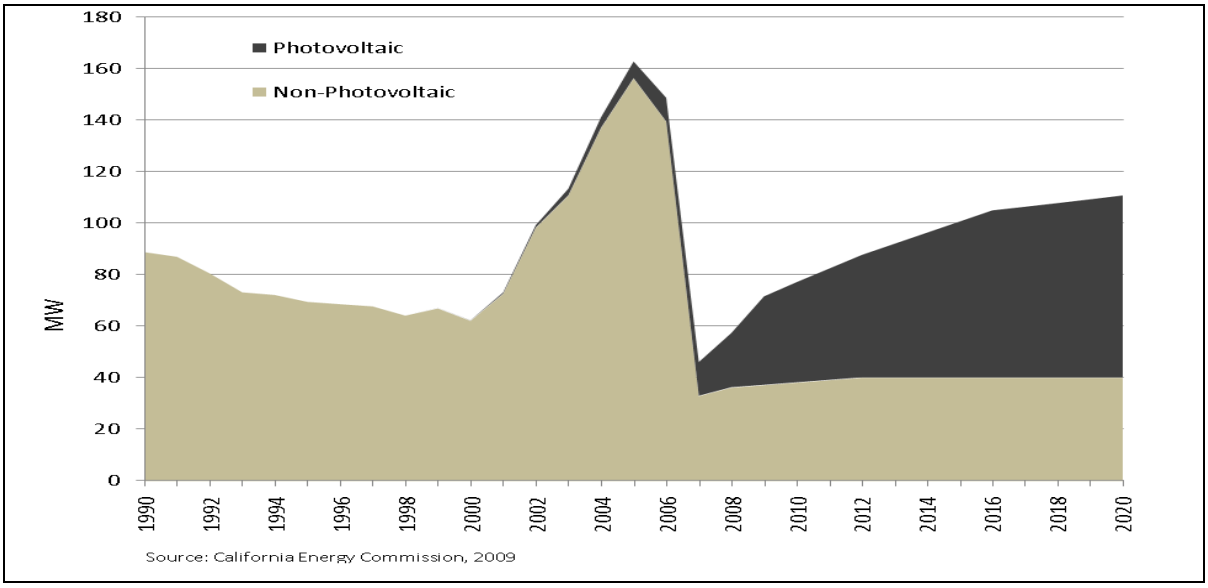


Source: California Energy Commission, 2009

Self-Generation

The peak demand forecast is reduced by self generation, including the effects of the SGIP, CSI, and other programs, as discussed in Chapter 1. The effects of these programs are forecast based on recent trends in installations. **Figure 4-24** shows the staff draft forecast of peak impacts from photovoltaic and non-photovoltaic self generation. Based on current trends, staff projects about 70 MW of peak reduction from photovoltaic systems by 2020.

Figure 4-24: SDG&E Planning Area Self-Generation Peak Forecasts



Conservation/Efficiency Impacts

Staff spent a great deal of time refining methods to account for energy efficiency and conservation impacts while preparing this forecast, particularly for utility efficiency programs. **Tables 4-2** and **4-3** show electricity consumption and peak savings estimates for selected years, for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and certain market trends not directly related to programs or standards. Savings are measured against a baseline before 1975, so they incorporate more than 30 years of impacts from rate changes and standards. Chapter 8 provides much more detail on staff work related to energy efficiency and conservation.

Table 4-2: SDG&E Planning Area Electricity Consumption Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (GWh)							
Building Standards	110	173	211	226	265	315	379
Appliance Standards	270	558	760	899	970	1058	1161
Utility and Public Agency Programs	27	61	180	570	690	514	198
Naturally Occurring Savings	168	264	300	300	301	439	691
Total Residential Savings	575	1057	1451	1994	2225	2326	2430
Commercial Energy Savings (GWh)							
Building Standards	147	297	503	685	807	1004	1245
Appliance Standards	93	191	296	395	454	541	646
Utility and Public Agency Programs*	68	268	307	326	432	371	265
Naturally Occurring Savings	612	530	652	612	637	738	967
Total Commercial Savings	919	1286	1757	2017	2330	2654	3123
Total Energy Savings	1494	2343	3208	4011	4554	4980	5553

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

Table 4-3: SDG&E Planning Area Electricity Peak Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (MW)							
Building Standards	18	37	39	49	61	76	95
Appliance Standards	45	119	140	196	225	254	290
Utility and Public Agency Programs	4	13	33	125	160	124	50
Naturally Occurring Savings	28	56	55	66	70	105	173
Total Residential Savings	96	225	268	436	515	559	607
Commercial Energy Savings (MW)							
Building Standards	32	67	105	137	164	202	247
Appliance Standards	20	43	62	79	92	109	128
Utility and Public Agency Programs*	15	60	64	65	88	75	53
Naturally Occurring Savings	134	119	136	123	130	148	192
Total Commercial Savings	201	289	366	404	474	533	619
Total Energy Savings	296	514	634	840	989	1092	1226

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program

CHAPTER 5: Sacramento Municipal Utility District Planning Area

The Sacramento Municipal Utility District (SMUD) planning area includes SMUD retail customers, but does not include the new members of the SMUD control area (Roseville, Redding, and Western Area Power Administration [WAPA]). To support electricity system analysis, staff derives forecasts by control area and California ISO congestion zone from the planning area forecasts. Using historic consumption data and regional population projections, the estimated share of the PG&E forecast for WAPA, Roseville, and Redding forecasts are subtracted from the PG&E planning area and added to the SMUD control area. The results in this chapter are for the SMUD planning area only.

This chapter is organized as follows. First, forecasted consumption and peak loads for the SMUD planning area are discussed; both total and per capita values are presented. The *CED 2009* values are compared to the *CED 2007* forecast; differences between the two forecasts are explained. The forecasted load factor, jointly determined by the consumption and peak load estimates, is also discussed. Second, sector consumption and peak load forecasts are presented. The residential, commercial, industrial and "other" sector staff draft forecasts are compared to those in *CED 2007*; again, differences between the two are discussed.

CED 2007 assumed constant electricity rates throughout the forecast period. For this forecast, three price scenarios were developed for electricity rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010, while the "mid-rate" case assumed 15 percent higher rates over the same period. In the low-rate case, rates remained at 2010 levels through 2020. Chapter 1 provides more details.

Forecast Results

Table 5-1 compares electricity consumption and peak demand for selected years. **Figures 5-1** and **5-2** compare the *CED 2009* forecast with the *CED 2007* forecast.

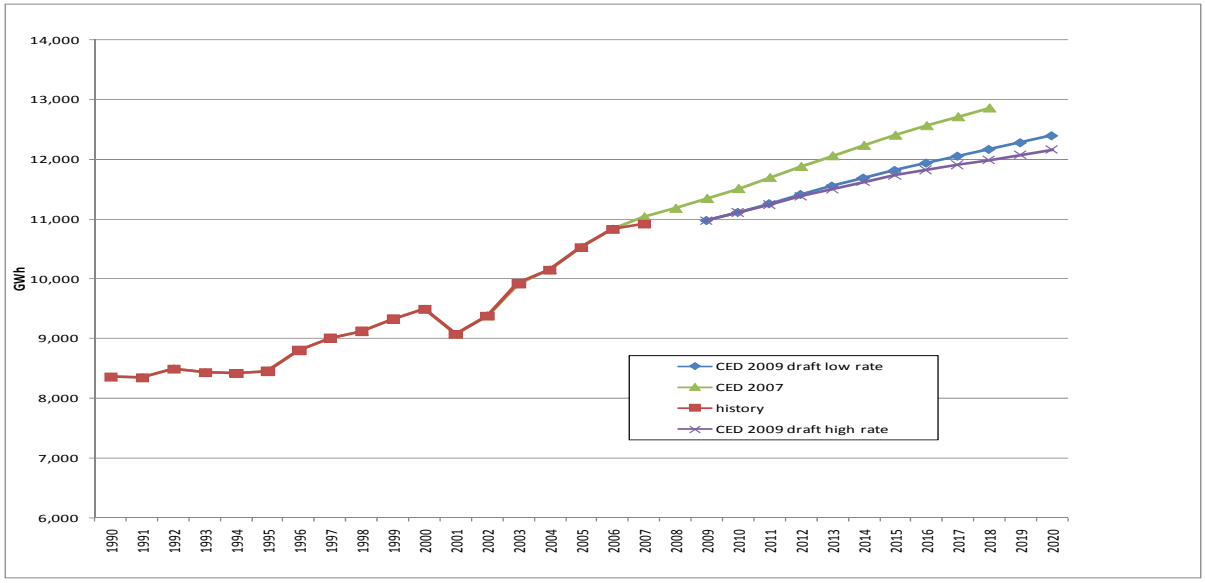
Table 5-1: SMUD Planning Area Forecast Comparison

Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	8,358	8,358	8,358	0.00%	0.00%
2000	9,491	9,491	9,491	0.00%	0.00%
2007	11,034	10,917	10,917	-1.06%	-1.06%
2010	11,506	11,114	11,114	-3.41%	-3.41%
2015	12,397	11,816	11,729	-4.69%	-5.39%
2018	12,851	12,167	11,989	-5.32%	-6.71%
Average Annual Growth Rates					
1990-2000	1.28%	1.28%	1.28%		
2000-2007	2.18%	2.84%	2.84%		
2007-2010	1.41%	0.60%	0.60%		
2010-2018	1.39%	1.14%	0.95%		
Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	2,198	2,167	2,167	-1.41%	-1.41%
2000	2,693	2,688	2,688	-0.19%	-0.19%
2007	3,136	3,092	3,092	-1.40%	-1.40%
2010	3,261	3,077	3,077	-5.64%	-5.64%
2015	3,515	3,276	3,258	-6.80%	-7.31%
2018	3,645	3,384	3,345	-7.16%	-8.23%
Average Annual Growth Rates					
1990-2000	2.05%	2.18%	2.18%		
2000-2007	3.09%	2.84%	2.84%		
2007-2010	1.31%	-0.16%	-0.16%		
2010-2018	1.40%	1.20%	1.05%		
Historic values are shaded					

Source: California Energy Commission, 2009

As seen in **Table 5-1**, the *CED 2009* forecast is 3.4 percent lower than the *CED 2007* forecast in the short term. This difference grows to 5.3 percent for the low-rate scenario and 6.7 percent for the high-rate scenario by the end of the forecast period. The differences in the forecast are caused by the reduced economic projections used in the *CED 2009* forecast. This difference is more pronounced in the short term although the longer term growth (after 2010) is slightly lower than that projected in the *CED 2007* forecast as seen in **Figure 5-1**.

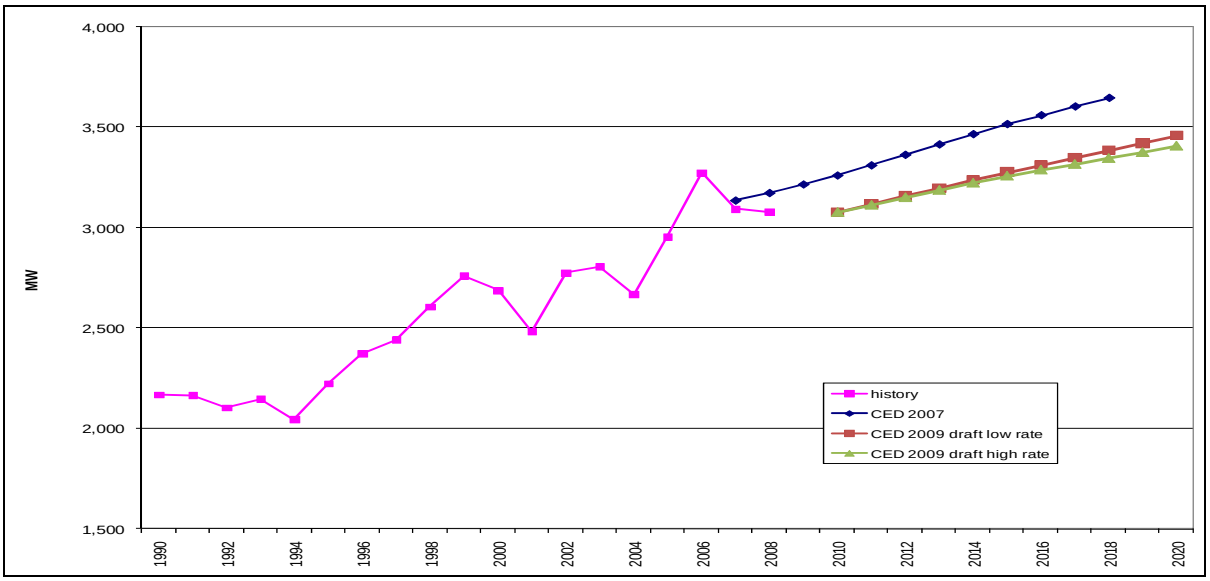
Figure 5-1: SMUD Planning Area Electricity Forecast



Source: California Energy Commission, 2009

The *CED 2009* SMUD planning area peak demand forecast, shown in **Figure 5-2**, is also lower over the entire forecast period than the *CED 2007* forecast. Major reasons for the lower peak forecast are the same as the higher energy forecast.

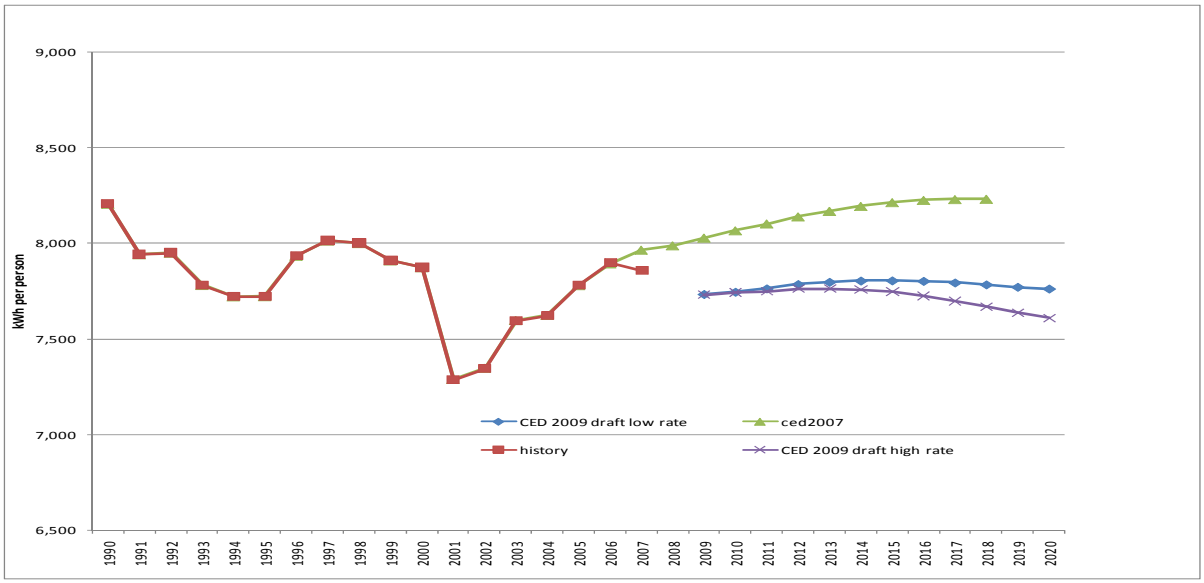
Figure 5-2: SMUD Planning Area Peak



Source: California Energy Commission, 2009

Figures 5-3 compares the old and new per capita electricity consumption forecasts for the SMUD planning area. Projected per capita consumption in the *CED 2009* is lower than in the *CED 2007* forecast. The *CED 2009* per capita electricity consumption forecast is now projected to be lower than pre-energy crisis levels.

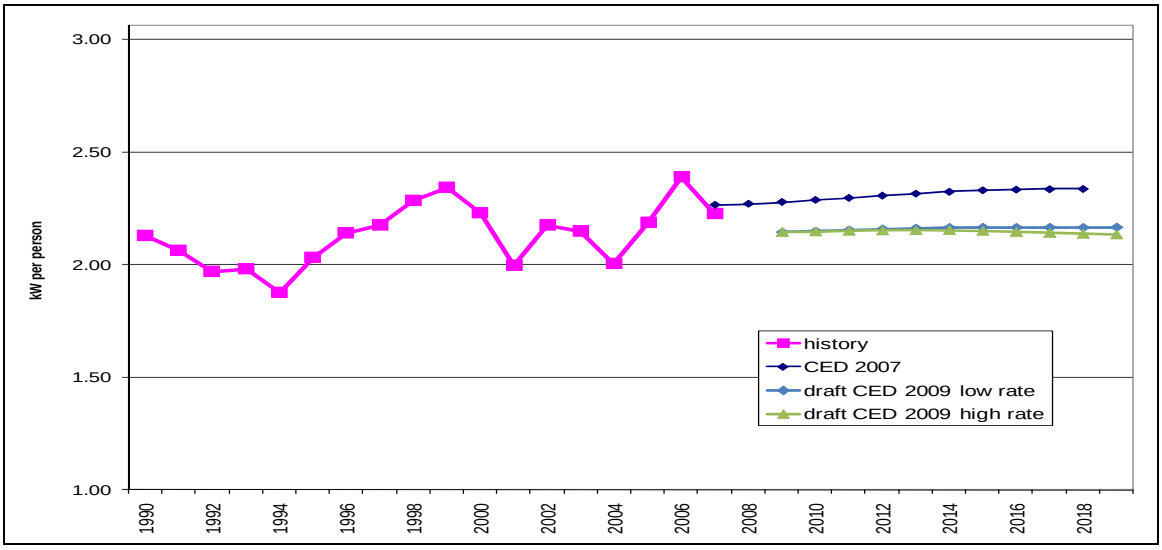
Figure 5-3: SMUD Planning Area per Capita Electricity Consumption



Source: California Energy Commission, 2009

CED 2009 per capita peak demand, shown in **Figure 5-4**, is projected to remain constant over the forecast period at a slightly lower level than the *CED 2007* forecast. The *CED 2009* forecast level is in line with the mid range of values experienced in recent history.

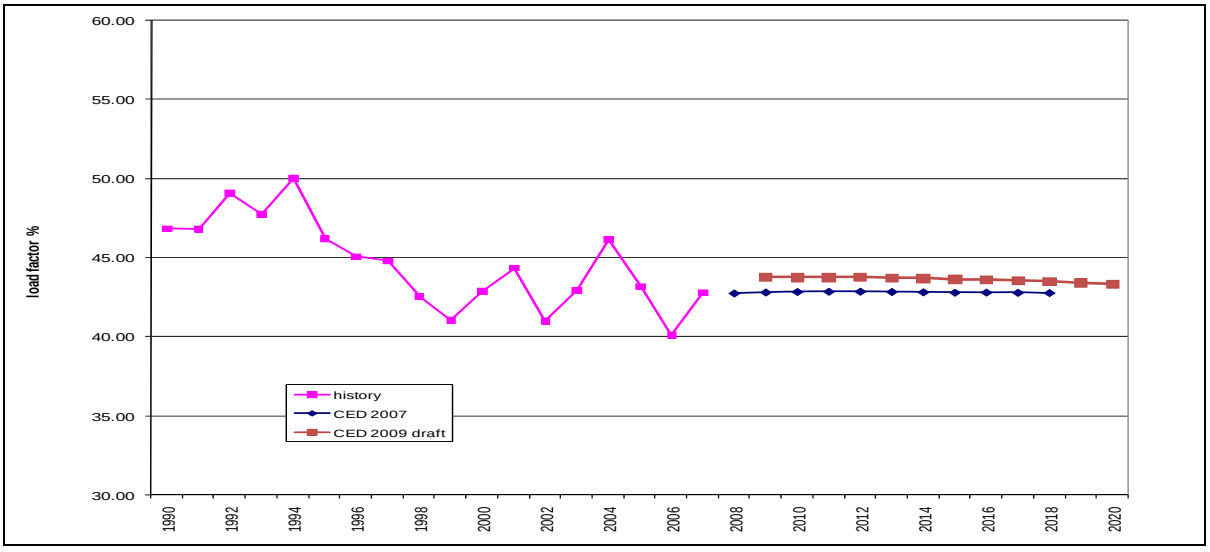
Figure 5-4: SMUD Planning Area per Capita Peak Demand



Source: California Energy Commission, 2009

Figure 5-5 compares the load factors of the two forecasts. The load factor is a measure of the relative increase in peak demand with respect to annual electricity consumption. Lower load factors indicate a sharp rise, while higher load factors indicate a more stable load. Variation in historic load factors is caused in part by annual weather patterns. The SMUD load factor has been declining since the mid-1990's, as the residential sector—with a continually increasing presence of air conditioning—grew faster than other sectors. The forecasted load factor levels out as air condition in the SMUD planning area reaches complete saturation levels.

Figure 5-5: SMUD Planning Area Load Factor



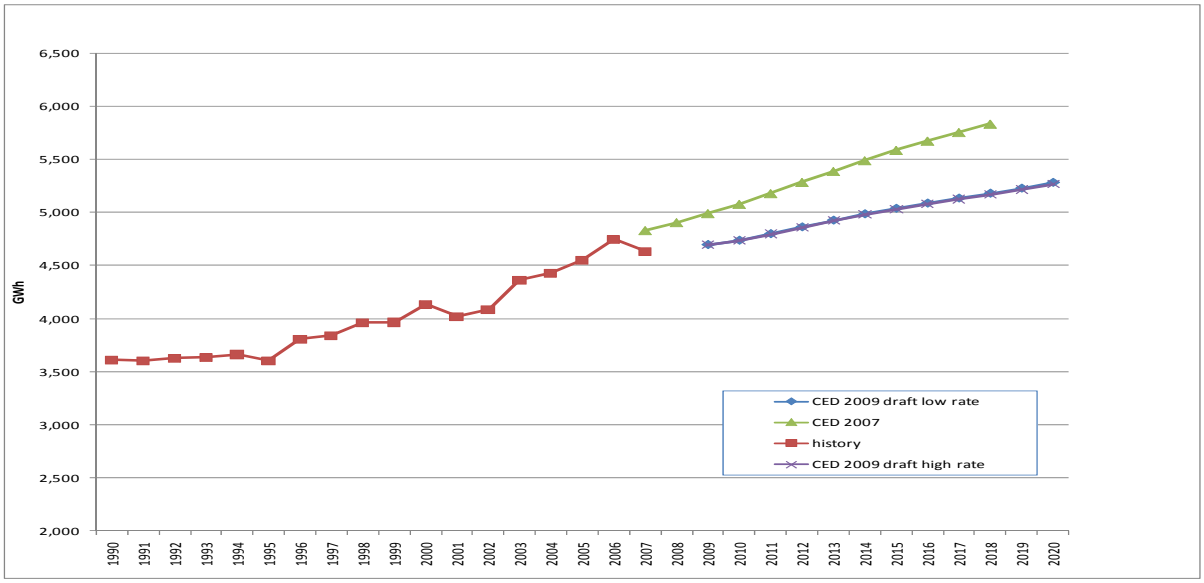
Source: California Energy Commission, 2009

Sector Level Results and Input Assumptions

Residential

Figure 5-6 compares between the *CED 2009* and *CED 2007* SMUD planning area residential forecasts. The *CED 2009* forecast is lower than the *CED 2007* forecast over the entire forecast period. This difference is caused by a lower starting value and the lower economic drivers used in the residential forecast along with increased savings from lighting and other efficiency programs.

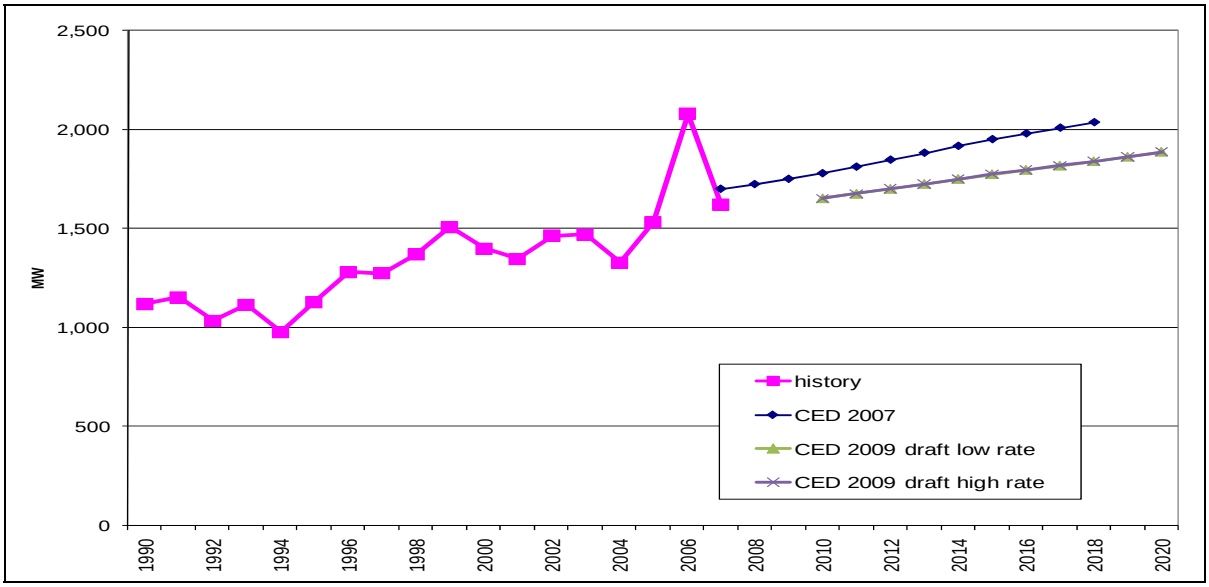
Figure 5-6: SMUD Planning Area Residential Consumption



Source: California Energy Commission, 2009

Figure 5-7 compares the *CED 2009* and *CED 2007* residential peak demand forecasts. The difference in residential peak forecast is less than the difference in the residential electricity consumption forecast because most of the new efficiency measures do not have a direct impact on peak.

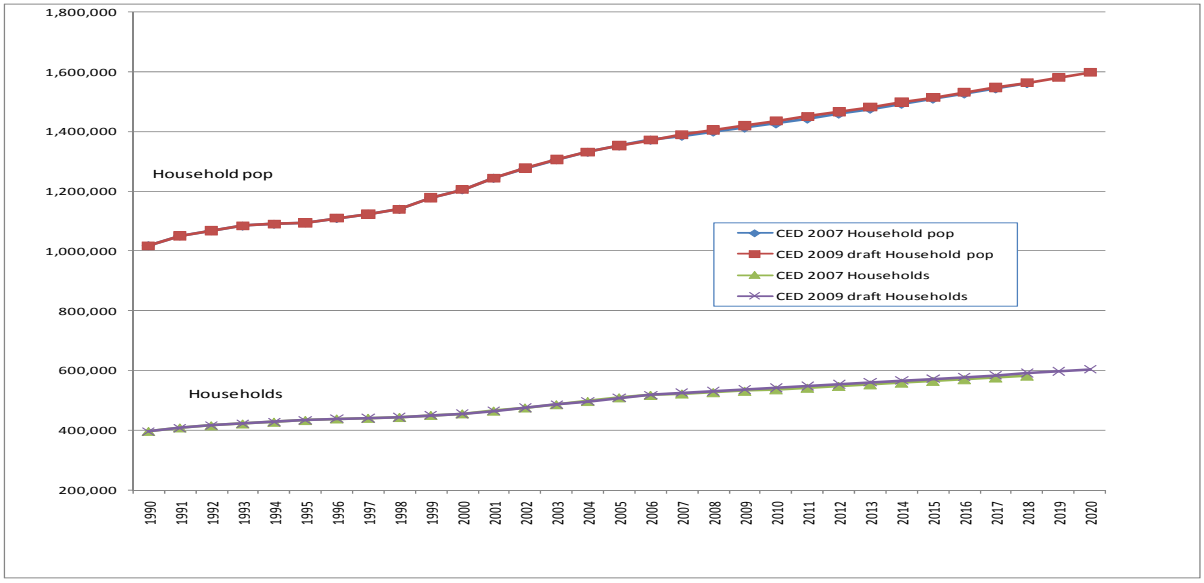
Figure 5-7: SMUD Planning Area Residential Peak



Source: California Energy Commission, 2009

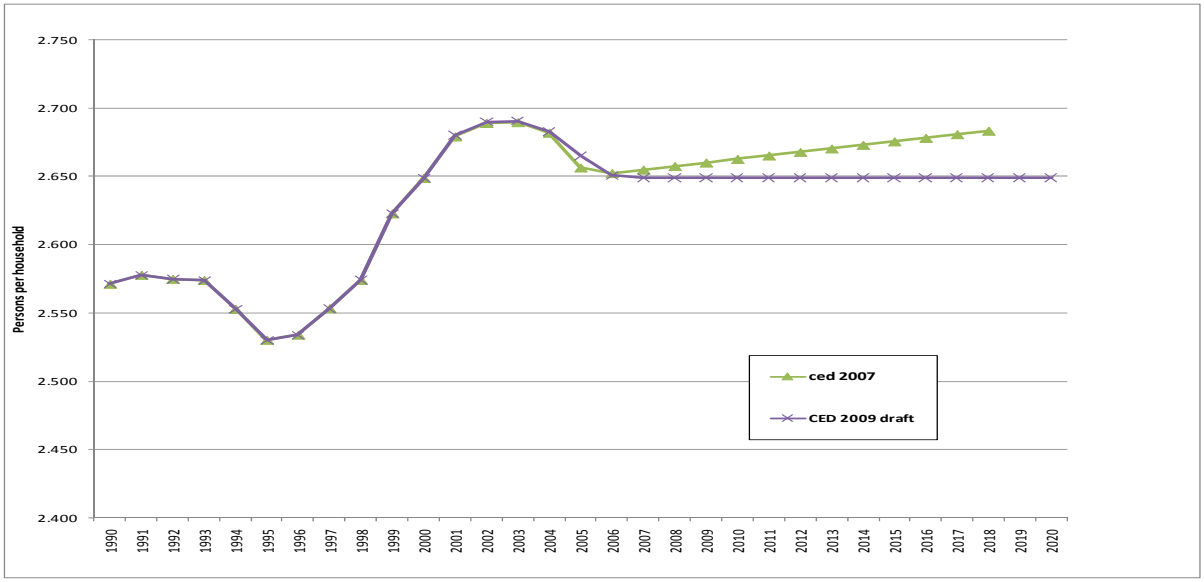
Figures 5-8 and **5-9** compare the residential drivers used in the *CED 2009* forecast with drivers used in *CED 2007*. **Figure 5-8** provides comparisons of total population and total households. **Figure 5-9** compares persons per household projections. The two forecasts of household population are essentially the same. The *CED 2009* forecast of households is slightly higher than the *CED 2007* forecast because of lower projections in persons per household (**Figure 5-9**) used in the current forecast.

Figure 5-8: SMUD Planning Area Residential Household and Household Population Projections



Source: California Energy Commission, 2009

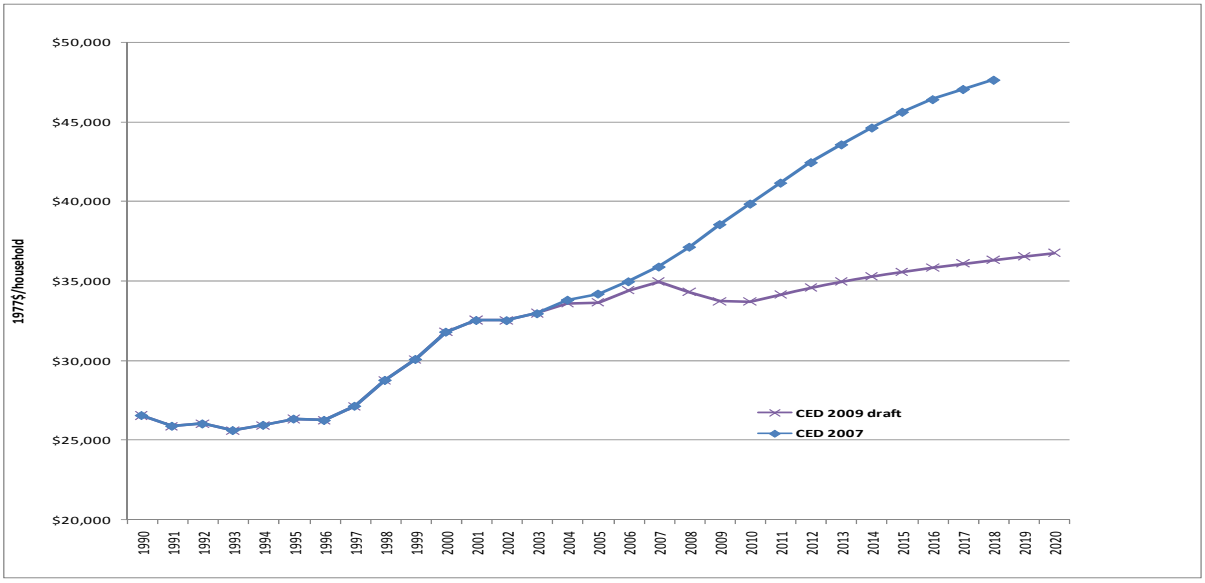
Figure 5-9: SMUD Planning Area Persons per Household Projections



Source: California Energy Commission, 2009

Figure 5-10 compares household income between the two forecasts. Household income is derived as the product of per capita income and persons per household. The *CED 2007* projection declines in the short term as a result of the recent economic situation. It then grows at a much slower rate than the *CED 2007* forecast in the mid to long term than the previous forecast.

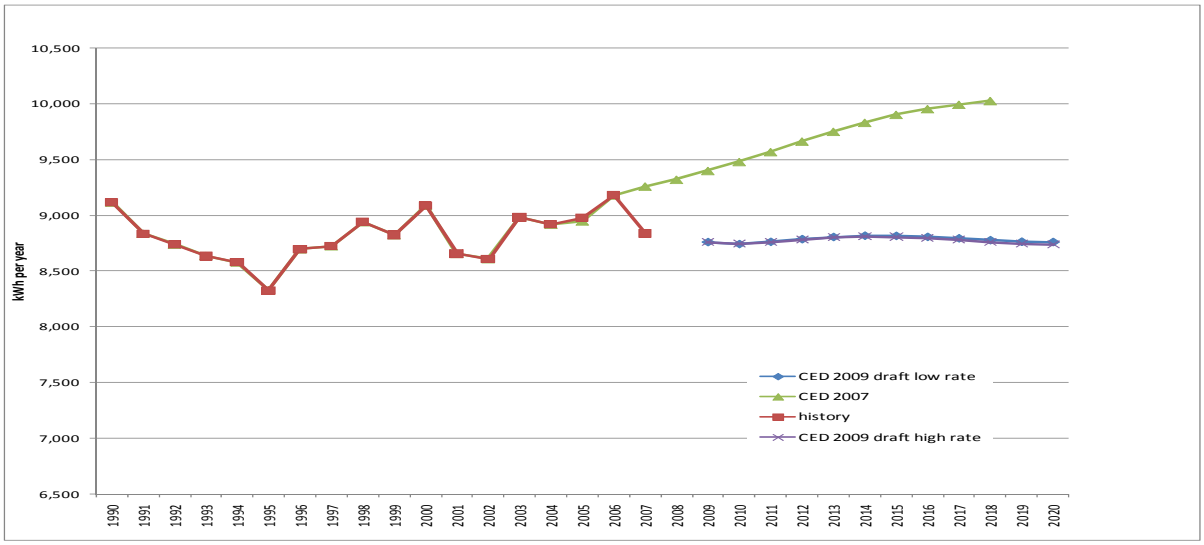
Figure 5-10: SMUD Planning Area Household Income Projections



Source: California Energy Commission, 2009

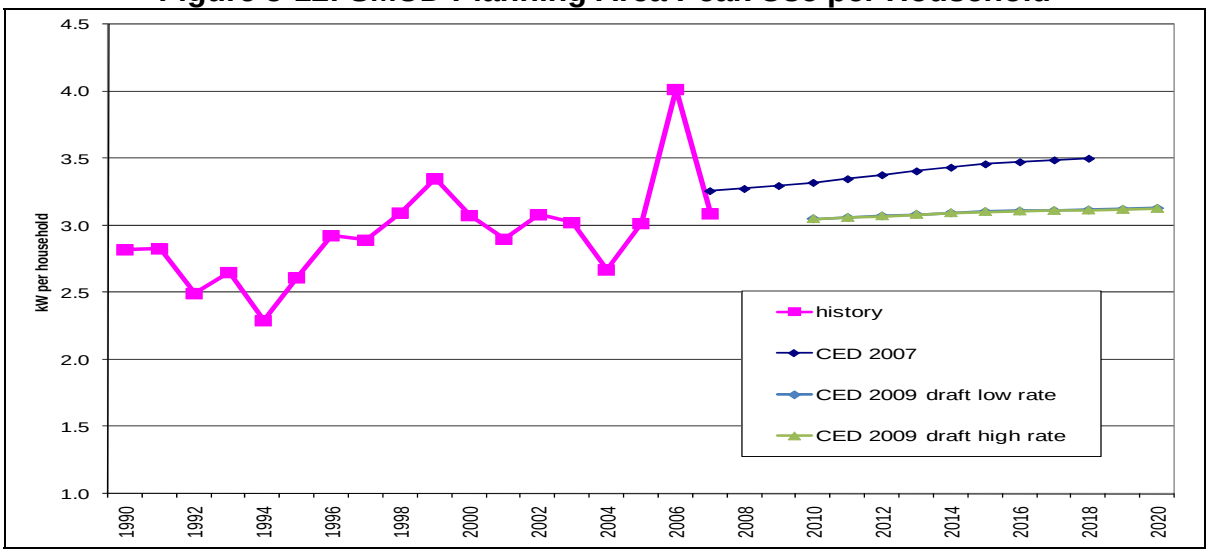
Figure 5-11 compares electricity use per household between the two forecasts as well as the 1990–2007 historic series. The *CED 2009* use per household forecast is now projected to remain relatively constant in contrast to the increasing growth projected in the *CED 2007* forecast. The constant growth projection is a result of lower household income and increases in efficiency savings from lighting programs and standards. The decrease in peak use per household, as seen in **Figure 5-11**, is less than the difference for energy. The reason is the reduced effect of air conditioning savings at peak and less lighting impact on residential peak

Figure 5-11: SMUD Planning Area Electricity Use per Household



Source: California Energy Commission, 2009

Figure 5-12: SMUD Planning Area Peak Use per Household

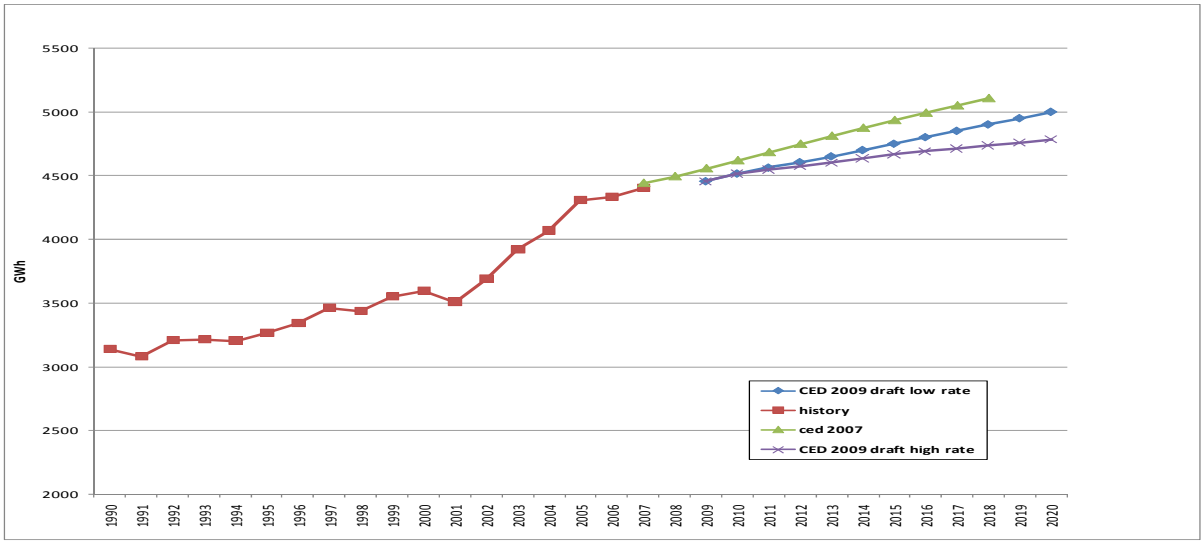


Source: California Energy Commission, 2009

Commercial Building Sector

Figure 5-13 compares the commercial building sector forecasts. The *CED 2009* begins slightly below the *CED 2007* forecast because actual consumption in 2007 was lower than was projected in *CED 2007* and recent economic activity has lowered the short term forecast. The growth rate of the *CED 2009* low-rate scenario is essentially the same as the previous forecast for the mid to long term. The growth of the *CED 2009* high-rate scenario is lower because of increases in prices in the mid to long term.

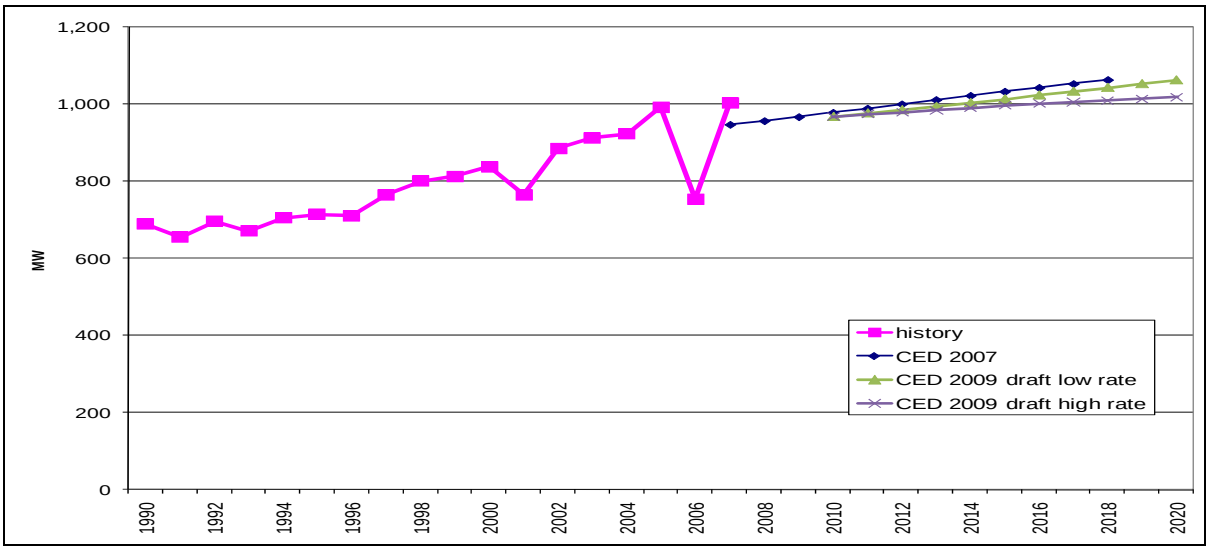
Figure 5-13: SMUD Planning Area Commercial Building Consumption



Source: California Energy Commission, 2009

Figure 5-14 compares the commercial peak demand forecasts. The *CED 2009* forecast is slightly lower than the *CED 2007* commercial peak forecast in the low-rate scenario similar to the electricity consumption result. Differences in peak forecasts are driven primarily by the differences in electricity forecasts.

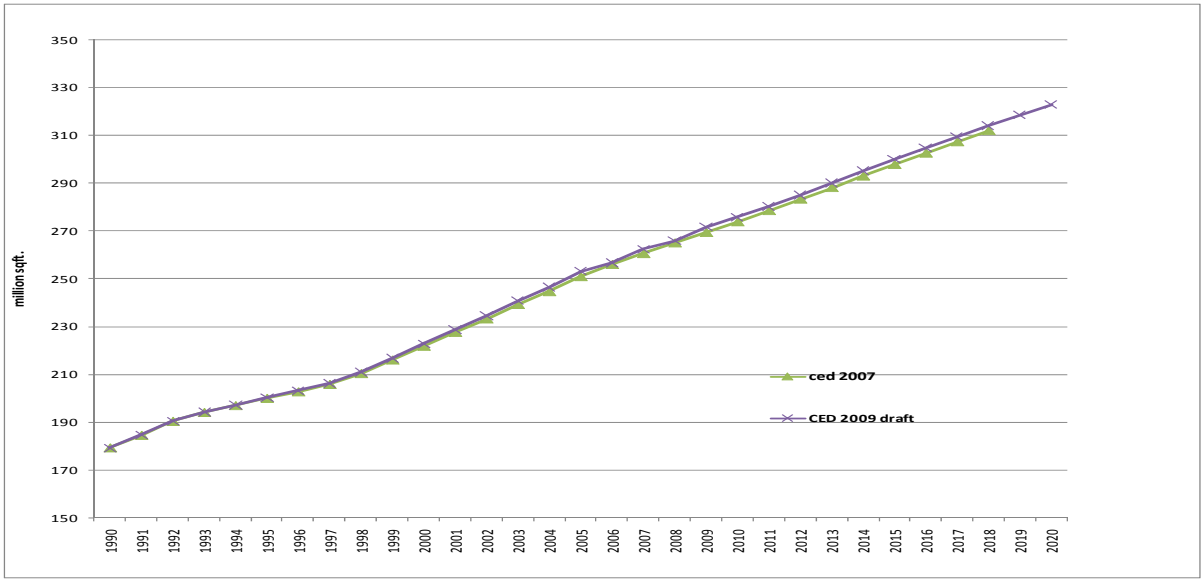
Figure 5-14: SMUD Planning Area Commercial Building Sector Peak



Source: California Energy Commission, 2009

In staff's commercial building sector forecasting model, floor space by building type (for example, retail, offices, schools, and hospitals) is the key driver of electricity growth. **Figure 5-15** compares total commercial floor space projections. The *CED 2009* floor space projections are slightly higher than those used in *CED 2007*.

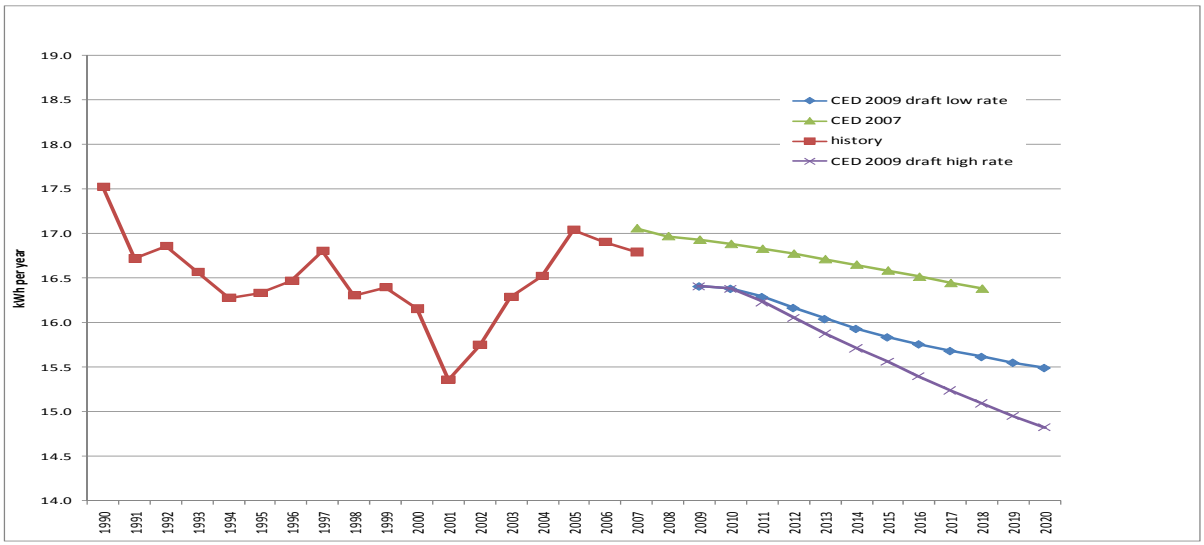
Figure 5-15: SMUD Planning Area Commercial Floor Space



Source: California Energy Commission, 2009

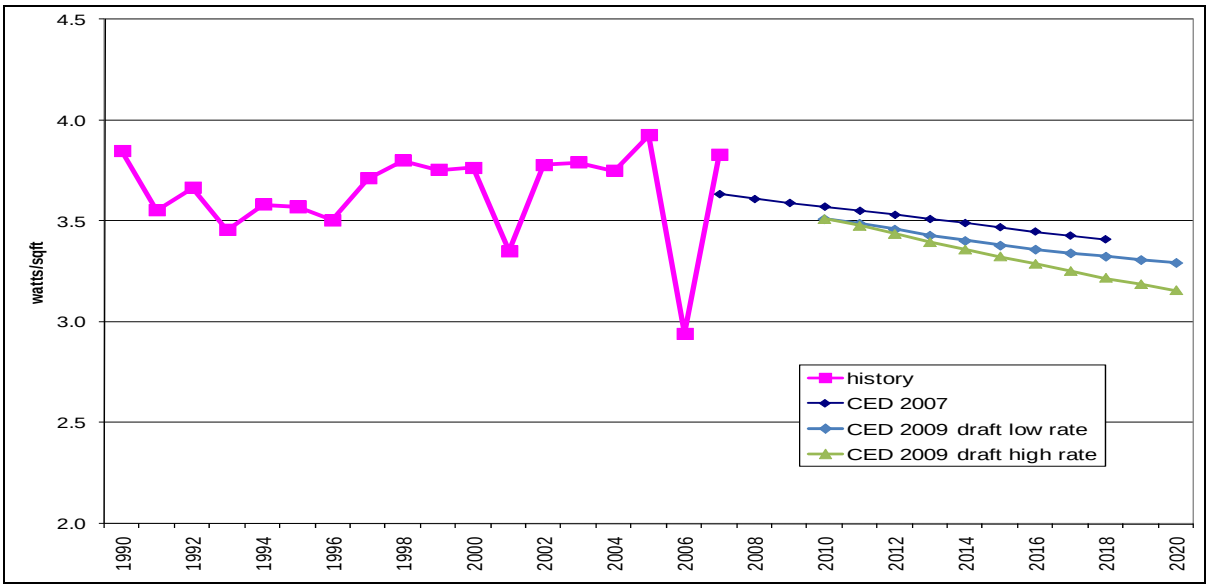
This slightly higher floor space projection is somewhat offset by a decline in projected use per square foot over the forecast period, shown in **Figures 5-16** and **5-17**. This decline is a result of an increasing proportion of new floor space with more efficient end use intensities. Commercial consumption per square foot, in terms of both energy and peak, decreases sharply in the forecast period of the *CED 2009*.

Figure 5-16: SMUD Planning Area Commercial kWh per Square Foot



Source: California Energy Commission, 2009

Figure 5-17: SMUD Planning Area Peak per Square Foot

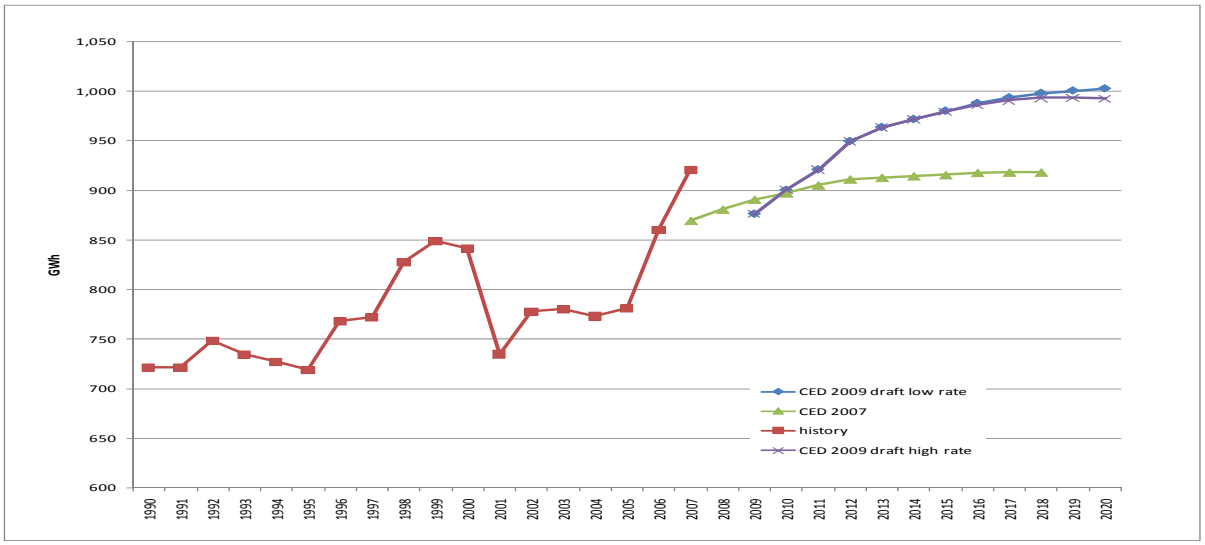


Source: California Energy Commission, 2009

Industrial Sector

Figure 5-18 provides comparisons of the SMUD planning area industrial sector electricity consumption forecasts. The *CED 2009* industrial electricity consumption forecast begins at a lower level than the *CED 2007* forecast, but has a higher growth rate. By the end of the forecast period the staff draft is higher than the previous forecast for both rate scenarios.

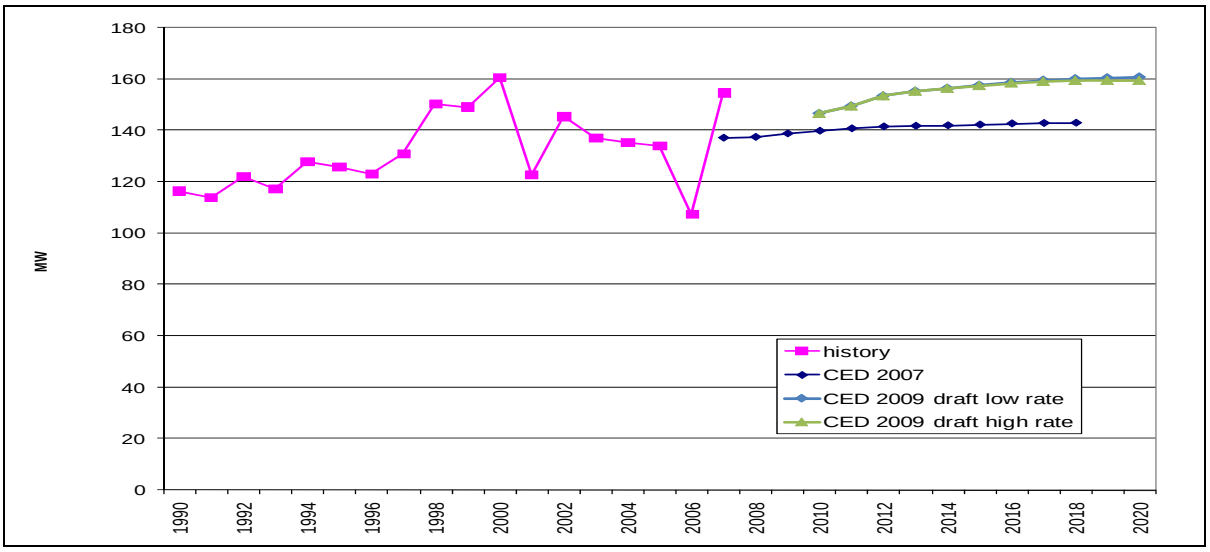
Figure 5-18: SMUD Planning Area Industrial Consumption



Source: California Energy Commission, 2009

Figure 5-19 compares the industrial sector peak forecasts. In contrast to the consumption forecasts, the *CED 2009* forecast starts from a higher initial 2007 value and is higher throughout the forecast period.

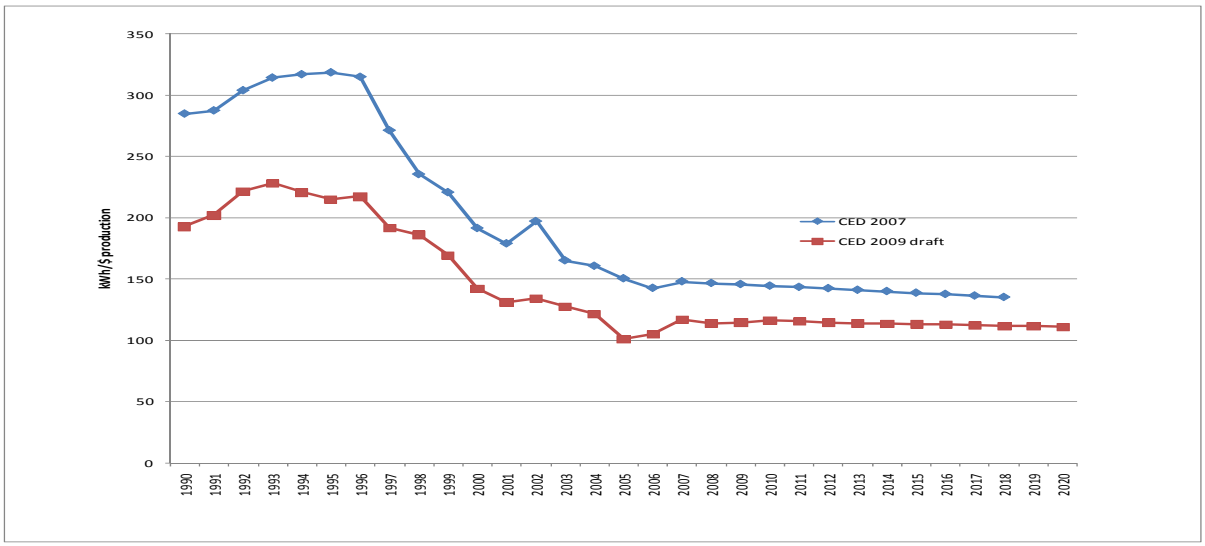
Figure 5-19: SMUD Planning Area Industrial Sector Peak



Source: California Energy Commission, 2009

Figure 5-20 compares use per dollar value of production between the *CED 2009* and *CED 2007* forecasts. The difference in kWh per dollar of industrial value added in the *CED 2009* and *CED 2007* industrial forecasts, especially in the early years, is due to different starting points. These points differ as a result of revised historic industrial production data used for the forecast. The *CED 2009* projection of use per dollar is somewhat flatter than the declining projection used in the previous forecast.

Figure 5-20: SMUD Planning Area Industrial Use per Production Unit



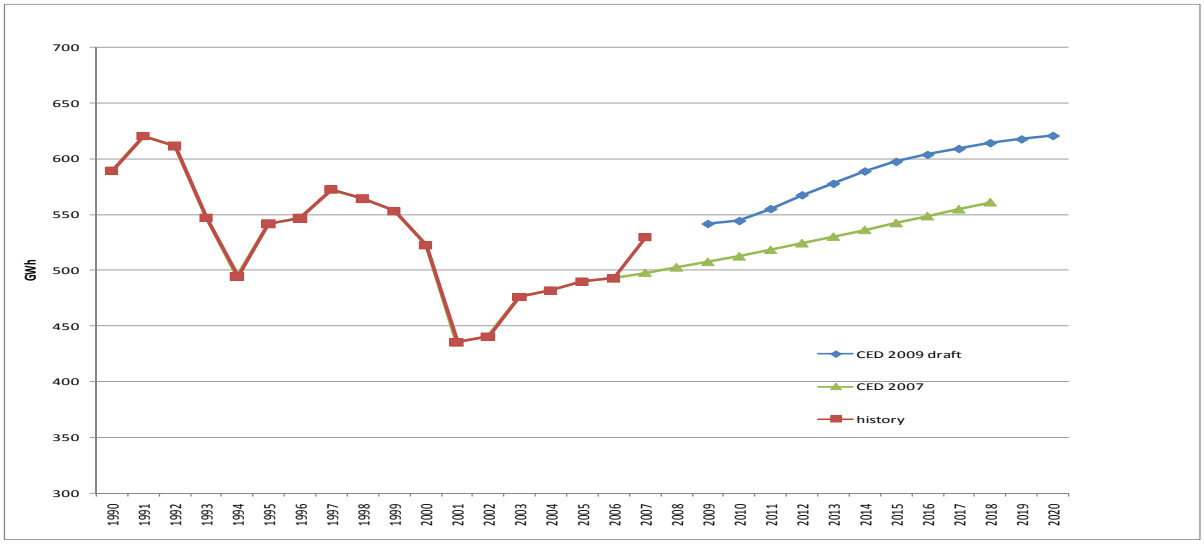
Source: California Energy Commission, 2009

Other Sectors

Figures 5-21 and **5-22** compare the remaining sector electricity consumption forecasts. **Figure 5-21** compares the transportation, communication, and utilities (TCU) sector forecasts. The *CED 2009* forecast is higher than the *CED 2007* forecast because of a higher historic starting point.

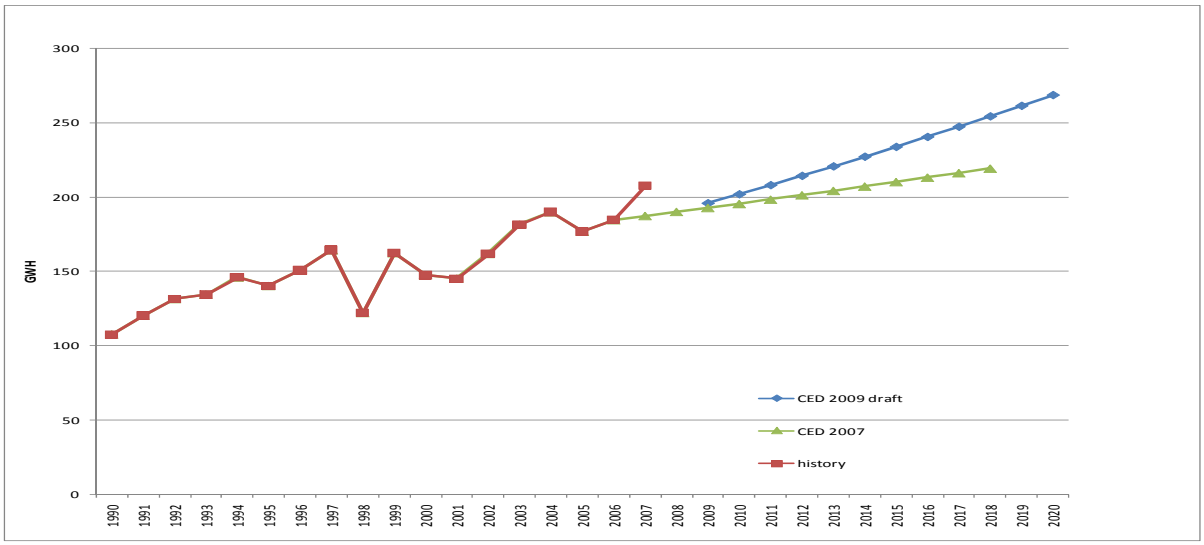
Figure 5-22 provides comparisons of the agriculture and water pumping sector forecasts. The *CED 2009* agriculture and water pumping forecast is about the same as the *CED 2007* forecast in the short term but grows at a faster rate over the forecast period.

Figure 5-21: SMUD Planning Area
Transportation, Communication & Utilities Sector Electricity Consumption



Source: California Energy Commission, 2009

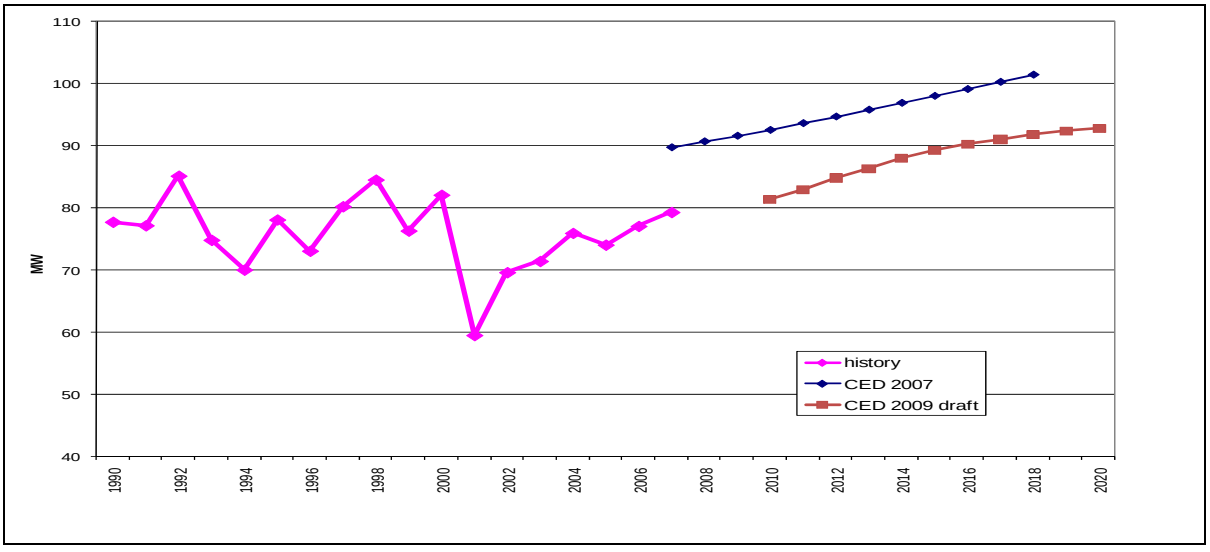
Figure 5-22: SMUD Planning Area
Agriculture & Water Pumping Electricity Consumption Forecasts



Source: California Energy Commission, 2009

Figure 5-23 compares the combined Other Sector peaks for the *CED 2009* and *CED 2007* forecasts. The *CED 2009* forecast is lower over the entire forecast period than the *CED 2007* given a lower assumed starting point resulting from a reclassification of historical consumption. However, the growth rate of the *CED 2009* forecast is essentially the same as the *CED 2007* forecast.

Figure 5-23: SMUD Planning Area Other Sector Peak



Source: California Energy Commission, 2009

Self-Generation

The peak demand forecast is reduced by self generation, including the effects of the SGIP, CSI, and other programs, as discussed in Chapter 1. The effects of these programs are forecast based on recent trends in installations. Based on current trends, staff projects about 15 MW of peak reduction from photovoltaic systems by 2020. Annual values for the SMUD planning area are reported in Form 1.2 in the Appendix.

Conservation/Efficiency Impacts

Staff spent a great deal of time refining methods to account for energy efficiency and conservation impacts while preparing this forecast, particularly for utility efficiency programs. **Tables 5-2** and **5-3** show electricity consumption and peak savings estimates for selected years, for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and certain market trends not directly related to programs or standards. Savings are measured against a baseline before 1975, so they incorporate more than 30 years of impacts from rate changes and standards. Chapter 8 provides much more detail on staff work related to energy efficiency and conservation.

Table 5-2: SMUD Planning Area Electricity Consumption Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (GWh)							
Building Standards	504	624	725	749	788	847	924
Appliance Standards	172	381	538	661	713	778	850
Utility and Public Agency Programs	208	259	255	252	217	145	112
Naturally Occurring Savings	29	36	42	61	112	188	295
Total Residential Savings	912	1301	1560	1723	1830	1959	2181
Commercial Energy Savings (GWh)							
Building Standards	70	142	232	323	386	471	578
Appliance Standards	38	83	120	162	186	218	258
Utility and Public Agency Programs*	6	55	55	56	56	56	52
Naturally Occurring Savings	632	591	773	800	872	973	1149
Total Commercial Savings	747	871	1180	1341	1500	1718	2037
Total Energy Savings	1659	2172	2741	3064	3330	3676	4218

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

Table 5-3: SMUD Planning Area Electricity Peak Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (MW)							
Building Standards	156	216	244	266	279	303	335
Appliance Standards	53	132	181	235	252	278	308
Utility and Public Agency Programs	64	90	86	89	77	52	41
Naturally Occurring Savings	9	13	14	22	40	67	107
Total Residential Savings	282	450	526	612	648	700	791
Commercial Energy Savings (MW)							
Building Standards	15	33	54	71	83	100	123
Appliance Standards	8	19	28	35	40	47	55
Utility and Public Agency Programs*	1	13	13	12	12	12	11
Naturally Occurring Savings	139	138	180	175	187	208	244
Total Commercial Savings	164	203	275	293	321	367	433
Total Energy Savings	447	653	800	905	970	1067	1224

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

CHAPTER 6: Los Angeles Department of Water and Power Planning Area

The Los Angeles Department of Water and Power (LADWP) planning area includes LADWP bundled retail customers and customers served by any energy service providers (ESPs) using the LADWP distribution system to deliver electricity to end users.

This chapter is organized similarly to previous chapters. First, forecasted consumption and peak loads for the LADWP planning area are discussed; both total and per capita values are presented. The *CED 2009* values are compared to the *CED 2007* forecast; significant differences between the two forecasts are explained. The forecasted load factor, jointly determined by the consumption and peak load estimates, is also discussed. Second, sector consumption and peak load forecasts are presented. The residential, commercial, industrial, and "other" sector forecasts are compared to those in *CED 2007*.

CED 2007 assumed constant electricity rates throughout the forecast period. For the *CED 2009* forecast, three price scenarios were developed for electricity rates: high rates, low (constant) rates, and a rate scenario in between the two. The high-rate case assumed approximately 30 percent higher rates by 2020 relative to 2010, while the "mid-rate" case assumed 15 percent higher rates over the same period. In the low-rate case, rates remained at 2010 levels through 2020. Chapter 1 provides more details.

Forecast Results

Table 6-1 compares electricity consumption and peak demand for selected years. **Figures 6-1 and 6-2** present a graphical comparison of the annual energy consumption and peak demand forecasts, respectively.

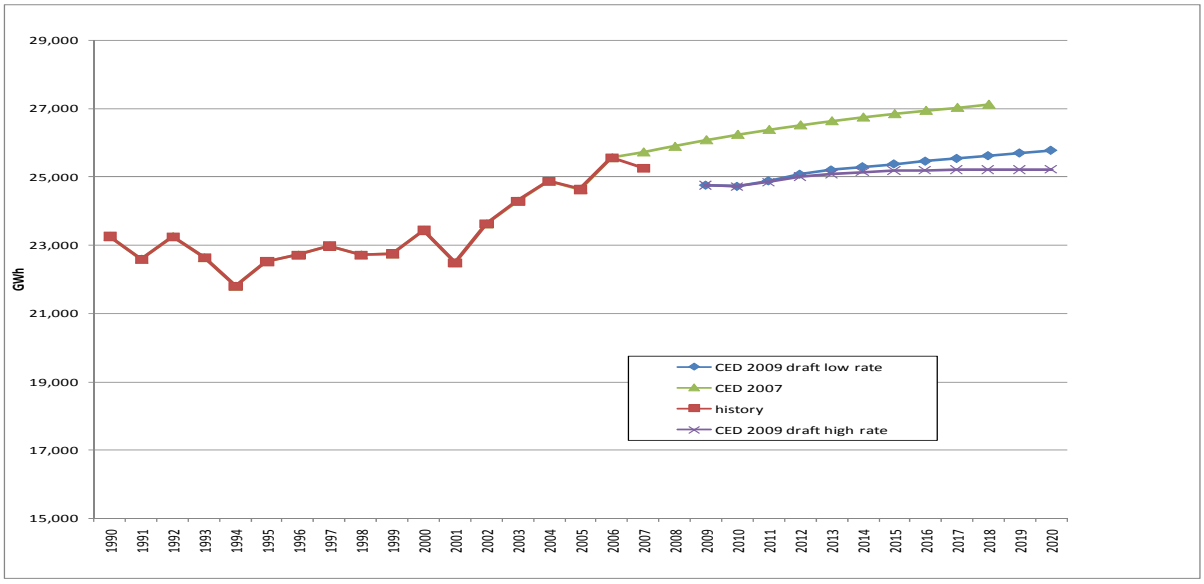
Table 6-1: LADWP Planning Area Forecast Comparison

Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	23,263	23,263	23,263	0.00%	0.00%
2000	23,437	23,437	23,437	0.00%	0.00%
2007	25,726	25,258	25,258	-1.82%	-1.82%
2010	26,241	24,729	24,729	-5.76%	-5.76%
2015	26,846	25,379	25,189	-5.46%	-6.17%
2018	27,120	25,619	25,213	-5.53%	-7.03%
Average Annual Growth Rates					
1990-2000	0.07%	0.07%	0.07%		
2000-2007	1.34%	1.51%	1.51%		
2007-2010	0.66%	-0.70%	-0.70%		
2010-2018	0.41%	0.44%	0.24%		
Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	5,326	5,326	5,326	0.00%	0.00%
2000	5,325	5,325	5,325	0.00%	0.00%
2007	5,685	6,134	6,134	7.90%	7.90%
2010	5,786	5,838	5,838	0.90%	0.90%
2015	5,907	5,978	5,929	1.20%	0.37%
2018	5,966	6,042	5,941	1.27%	-0.42%
Average Annual Growth Rates					
1990-2000	0.00%	0.00%	0.00%		
2000-2007	1.32%	2.87%	2.87%		
2007-2010	0.59%	-1.64%	-1.64%		
2010-2018	0.38%	0.43%	0.22%		
Historic values are shaded					

Source: California Energy Commission, 2009

As shown in **Figure 6-1**, the *CED 2009* electricity consumption forecast is lower throughout the forecast period for both the low and high-rate scenarios. The *CED 2009* forecast begins from a lower starting point caused by the recent economic downturn. After 2011 the low-rate scenario grows at a similar growth rate to the *CED 2007* forecast while the high-rate scenario continues on a relatively flat trajectory.

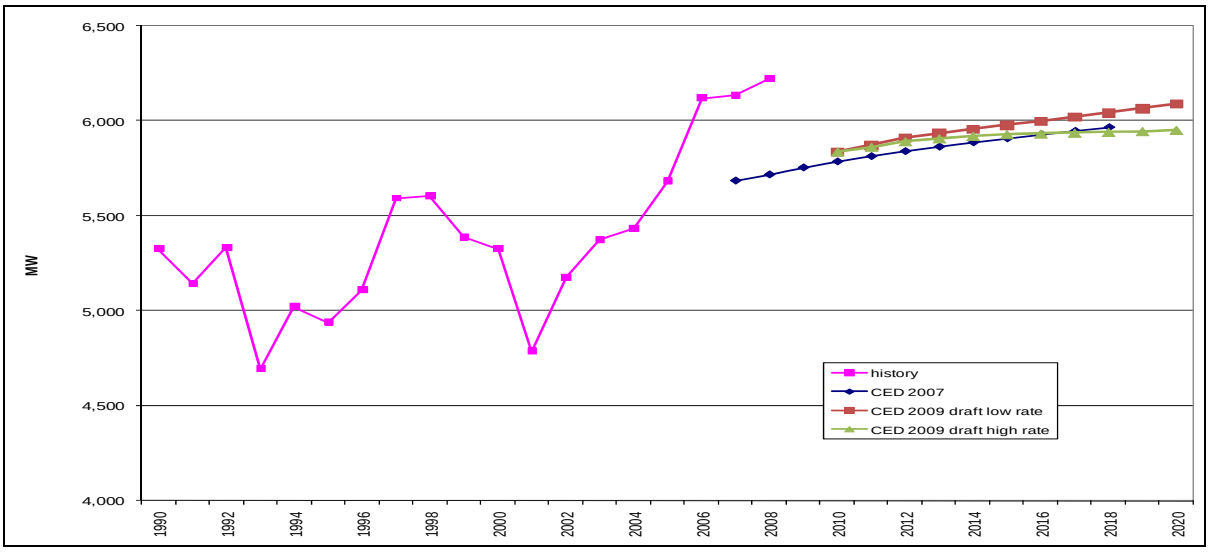
Figure 6-1: LADWP Planning Area Electricity Forecast



Source: California Energy Commission, 2009

In contrast to the electricity consumption forecast, the difference in LADWP planning area peak demand forecasts, shown in **Figure 6-2**, are not as great. The *CED 2009* forecast is slightly higher than the *CED 2007* forecast for both the low and high-rate scenarios in the short and intermediate term forecast horizon. In the long term the high-rate forecast flattens out and is lower than the previous forecast but the low-rate scenario remains above the previous forecast throughout the forecast period.

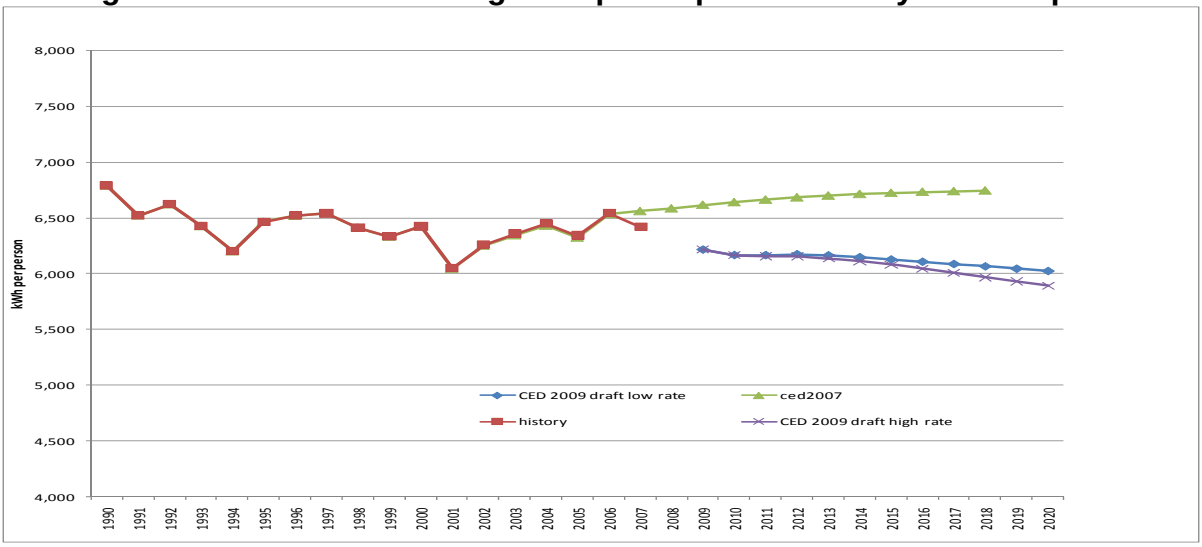
Figure 6-2: LADWP Planning Area Peak



Source: California Energy Commission, 2009

Figures 6-3 provides comparisons of LADWP planning area per capita electricity consumption between the *CED 2009* and *CED 2007* forecasts. Per capita consumption in the *CED 2009* forecast is lower throughout the forecast period than that projected in the *CED 2007* forecast. Projected per capita use is forecasted to decline in both the high- and low-rate scenarios as opposed to the increase in per capita electricity consumption projected in *CED 2007*.

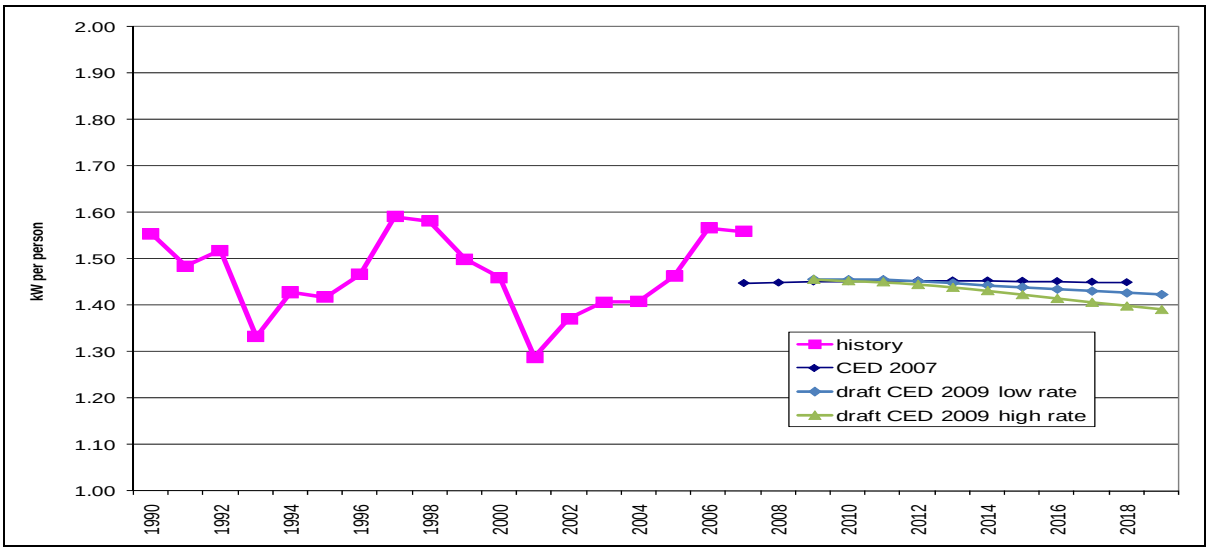
Figure 6-3: LADWP Planning Area per Capita Electricity Consumption



Source: California Energy Commission, 2009

Per capita peak demand, shown in **Figure 6-4**, is slightly lower than projected in the *CED 2007* forecast after 2012. Both *CED 2009* scenarios decline over the forecast period.

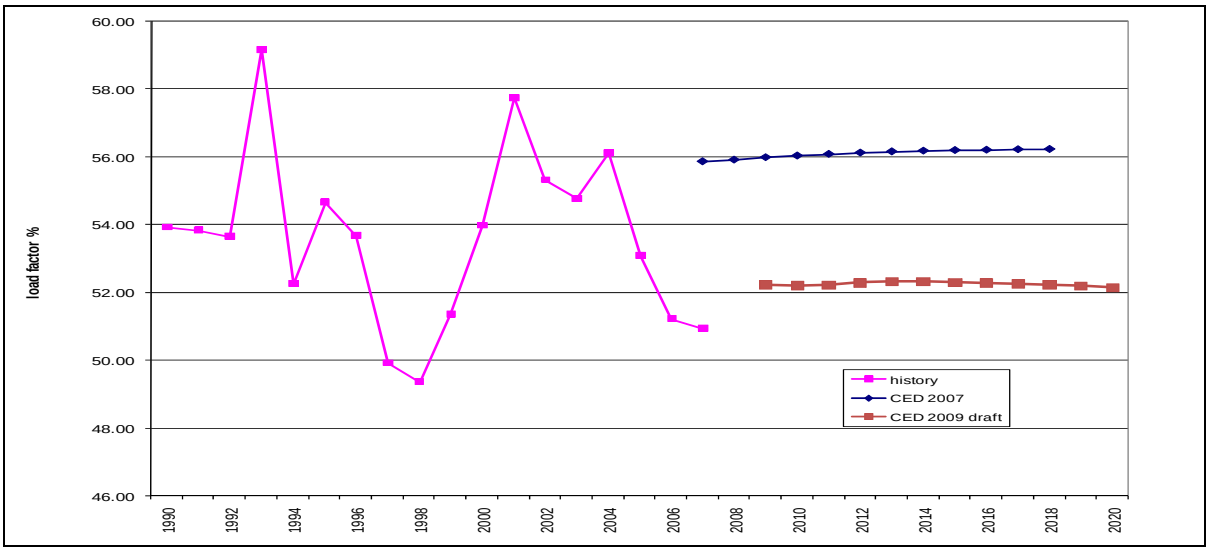
Figure 6-4: LADWP Planning Area per Capita Peak Demand



Source: California Energy Commission, 2009

Figure 6-5 compares the respective load factors. The load factor is a measure of the relative increase in peak demand with respect to annual electricity consumption. The *CED 2009* load factor is lower than the *CED 2007* load factor which reflects the more recent trend of lower load factors in the LADWP planning area.

Figure 6-5: LADWP Planning Area Load Factor



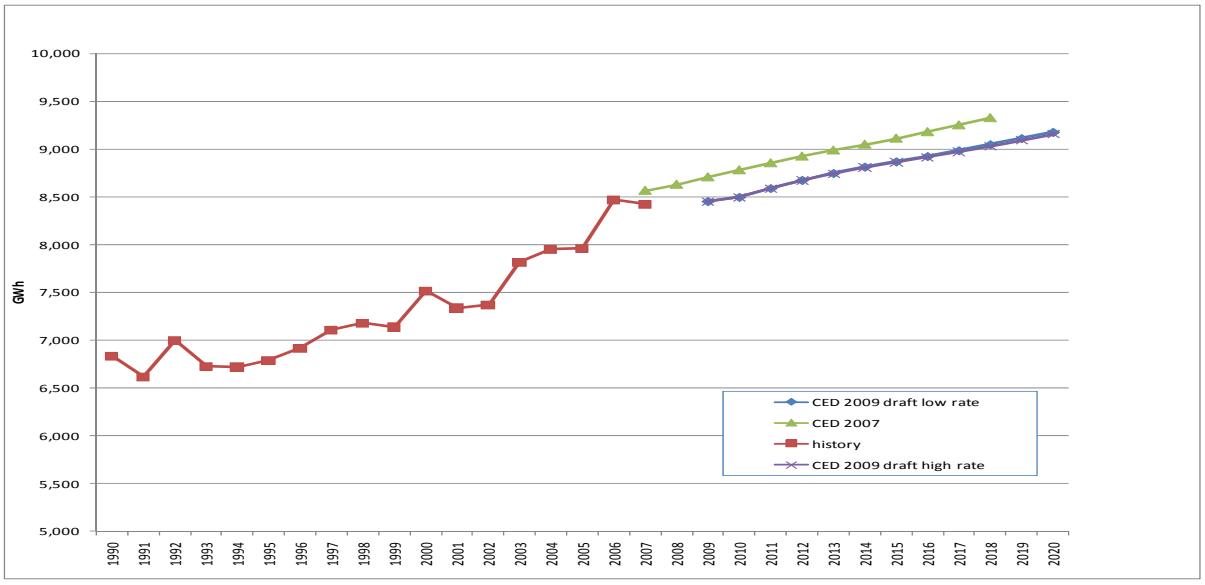
Source: California Energy Commission, 2009

Sector Level Results and Input Assumptions

Residential

Figure 6-6 compares between the *CED 2009* and *CED 2007* LADWP planning area residential forecasts. The *CED 2009* forecast is lower over the forecast period than the *CED 2007* forecast. This is caused in part by recent economic conditions which lowered the projection of household income. Also contributing to the lower forecast is an increase in lighting savings in the residential sector.

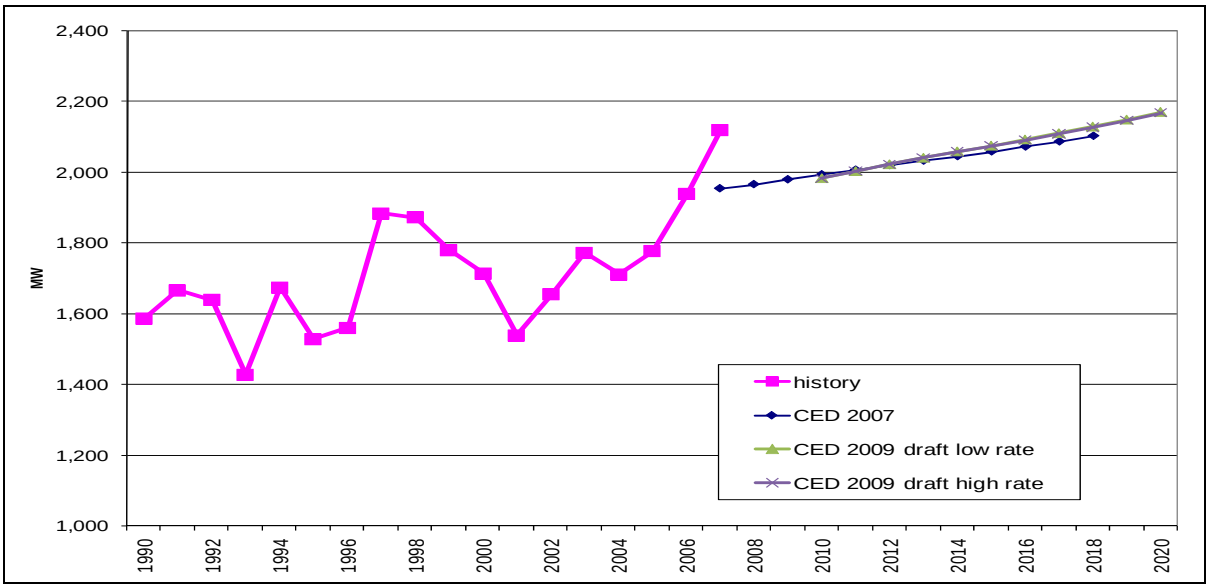
Figure 6-6: LADWP Planning Area Residential Consumption



Source: California Energy Commission, 2009

Figure 6-7 compares the *CED 2009* and *CED 2007* residential peak demand forecasts. Unlike the electricity forecasts the residential peak forecasts are very similar, the *CED 2009* forecast being slightly higher than the *CED 2007* residential peak forecast. This is because most of the reduction in residential electricity does not have a corresponding effect on peak (i.e., residential lighting savings).

Figure 6-7: LADWP Planning Area Residential Peak

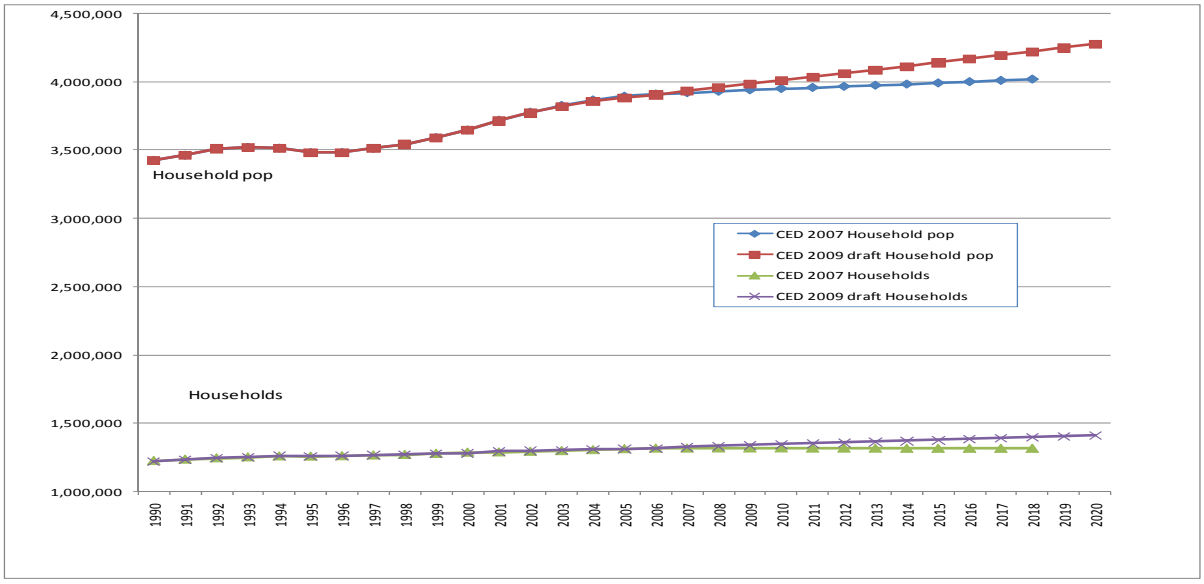


Source: California Energy Commission, 2009

Figures 6-8, 6-9 and **6-10** compare the residential drivers used in the *CED 2009* forecast with those used in *CED 2007*. For this forecast, staff revised the process allocating Los Angeles County population, housing, and income data to the five utility service areas providing electricity within the county—SCE; the cities of Burbank, Glendale, and Pasadena; and LADWP. Sources of information, such as websites for the cities of Glendale and Los Angeles, and the County of Los Angeles, provided substantial insight into population shifts within the area. The result of this revision is to allocate more of the county's population to LADWP but a higher proportion of homes to the warmer valley area and fewer to the coastal region. Also, a higher proportion of the county's personal income is assumed for the residents of Burbank, Glendale, and Pasadena.

Figure 6-8 provides comparisons of household population and total households between the two forecasts. The *CED 2009* forecast of total population and households is higher throughout the forecast period than the *CED 2007* forecast due to continued high population growth seen in the LADWP planning area.

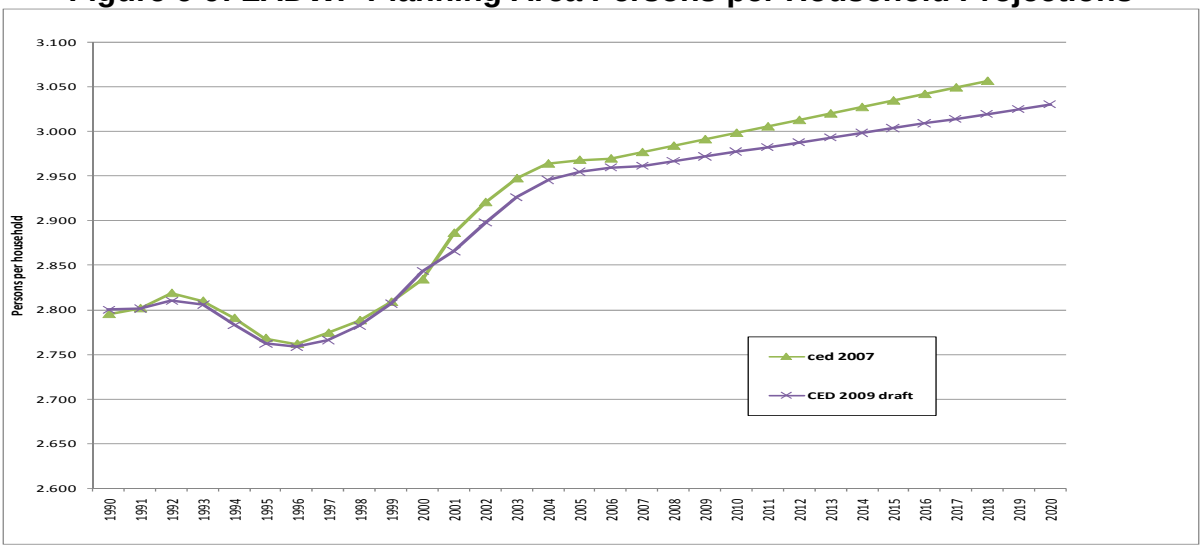
Figure 6-8: LADWP Planning Area Residential Demographic Projections



Source: California Energy Commission, 2009

Staff's *CED 2009* projections of persons per household (**Figure 6-9**) are somewhat lower than those used in the *CED 2007* forecast, based on recent estimates provided by the Department of Finance E5-A estimates. Staff has reduced previous assumptions of increasing persons per household to a rate approximately half of the increase seen in the 1990-2000 period. This yields a forecast of household growth that is slightly higher than the *CED 2007* forecast.

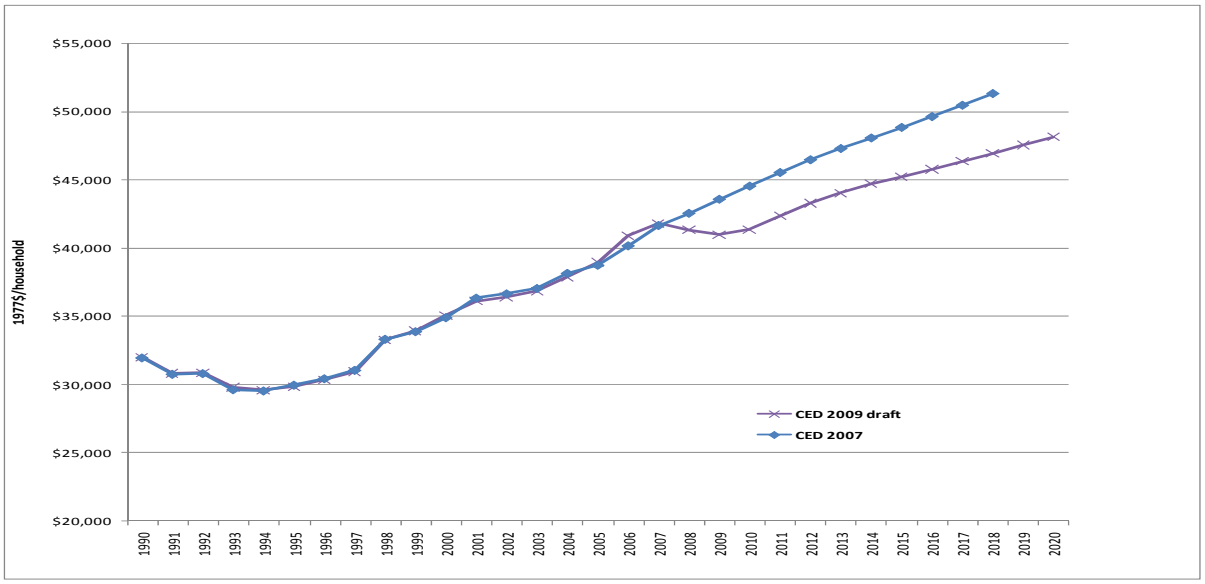
Figure 6-9: LADWP Planning Area Persons per Household Projections



Source: California Energy Commission, 2009

Figure 6-10 compares household income between the two forecasts. Household income is derived as the product of per capita income and persons per household. The *CED 2009* projection declines in the beginning of the forecast period because of current economic conditions. The *CED 2009* forecast then grows at a slightly lower rate than the *CED 2007* forecast for the remainder of the forecast period. This results in a household income forecast that is much lower than the previous forecast for the entire forecast period.

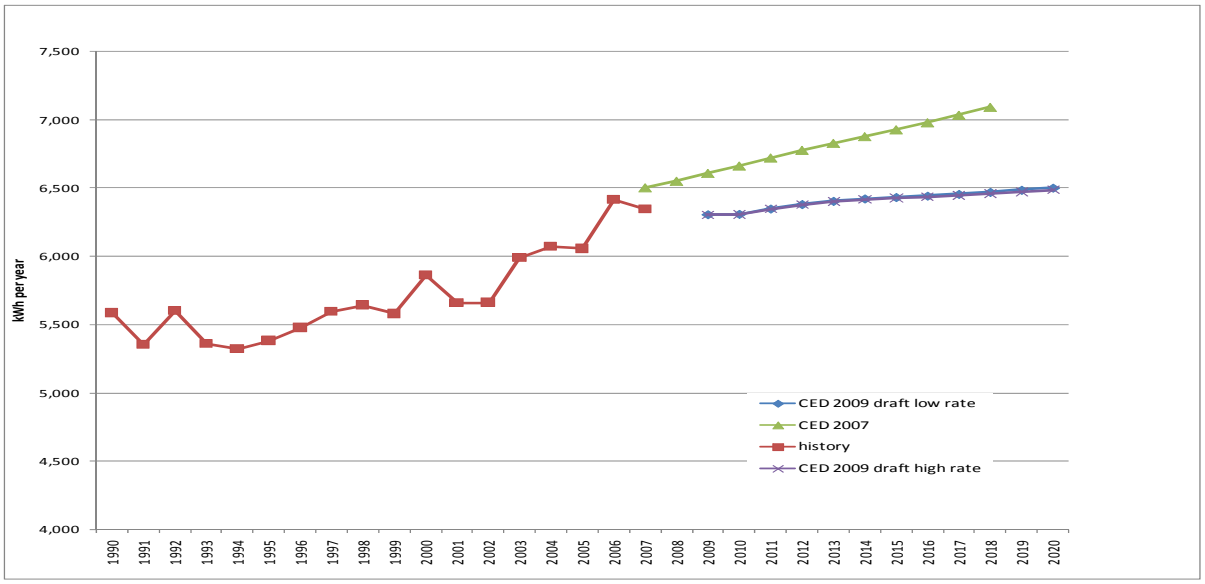
Figure 6-10: LADWP Planning Area Household Income Projections



Source: California Energy Commission, 2009

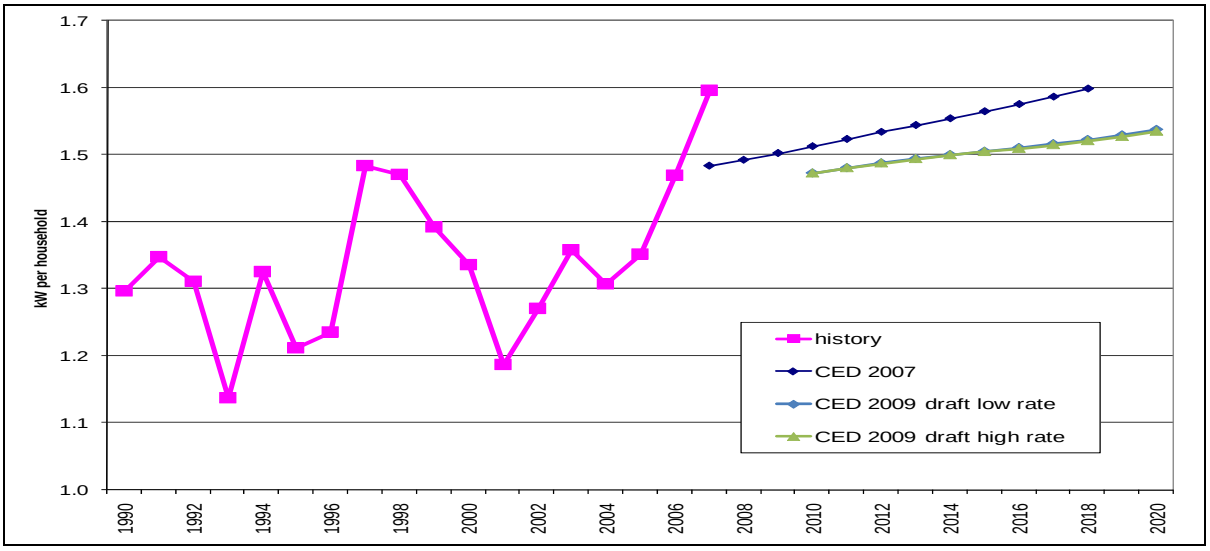
Figure 6-11 compares electricity use per household between the two forecasts as well as the 1990-2007 historic series. The *CED 2009* forecast of use per household is relatively constant over the forecast period compared with the increase of the previous forecast. Peak use per household, as seen in **Figure 6-12**, is also lower in the *CED 2009* forecast but to a lesser degree than the difference for energy. The reason is the reduced effect of air conditioning savings at peak and more off peak savings caused by lighting retrofit.

Figure 6-11: LADWP Planning Area Use per Household



Source: California Energy Commission, 2009

Figure 6-12: LADWP Planning Area Peak Use per Household

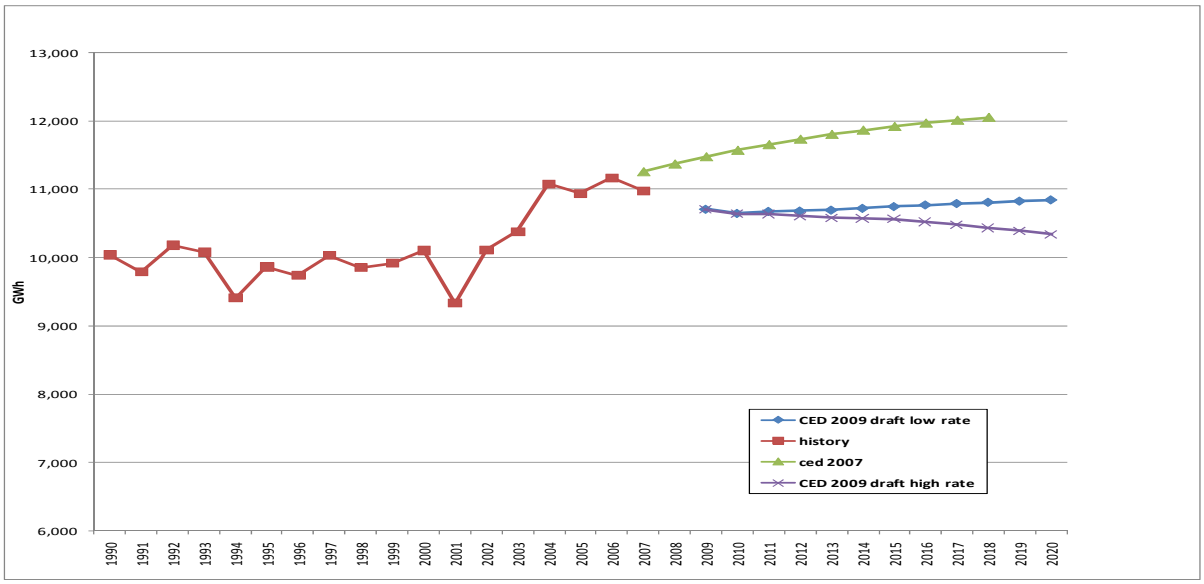


Source: California Energy Commission, 2009

Commercial Building Sector

Figure 6-13 compares the commercial building sector forecasts. The *CED 2009* forecast is lower throughout the entire forecast. This is primarily due to lower projections of commercial floor space in the short- and mid-term period as well as increased compliance of retrofit commercial lighting standards. The *CED 2009* commercial building electricity consumption growth rate is relatively constant in the low-rate scenario and declines in the high-rate scenario.

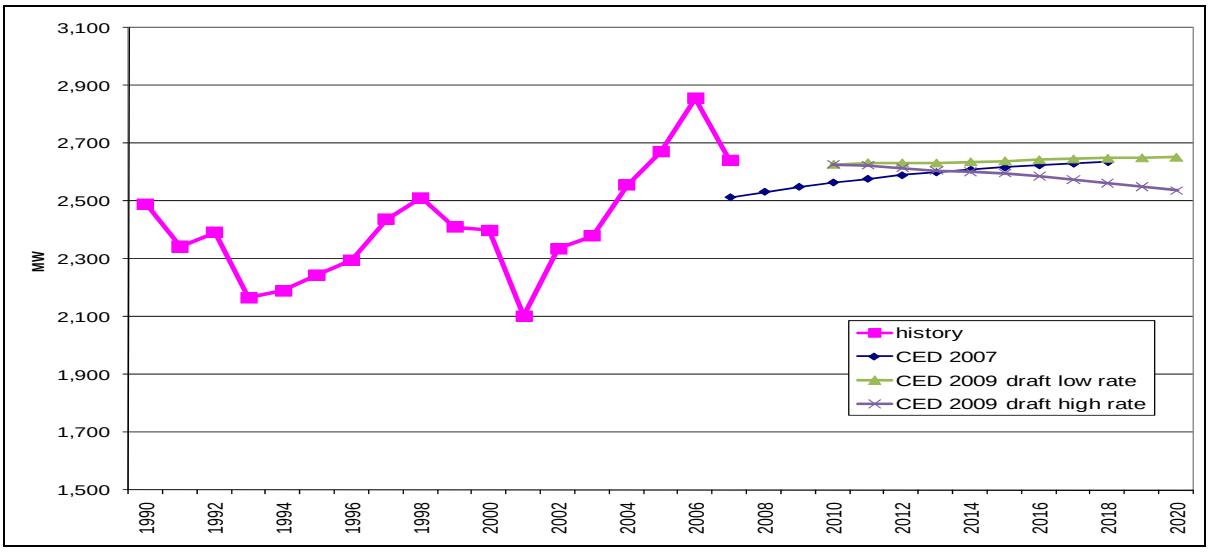
Figure 6-13: LADWP Planning Area Commercial Consumption



Source: California Energy Commission, 2009

Figure 6-14 compares the commercial peak demand forecasts. The *CED 2009* forecast is higher in the short term because of a higher starting point. The low-rate forecast is relatively constant throughout the forecast period and ends at essentially the same point as the *CED 2007* forecast. The high-rate scenario declines over the forecast period and is lower than the *CED 2007* forecast after 2013.

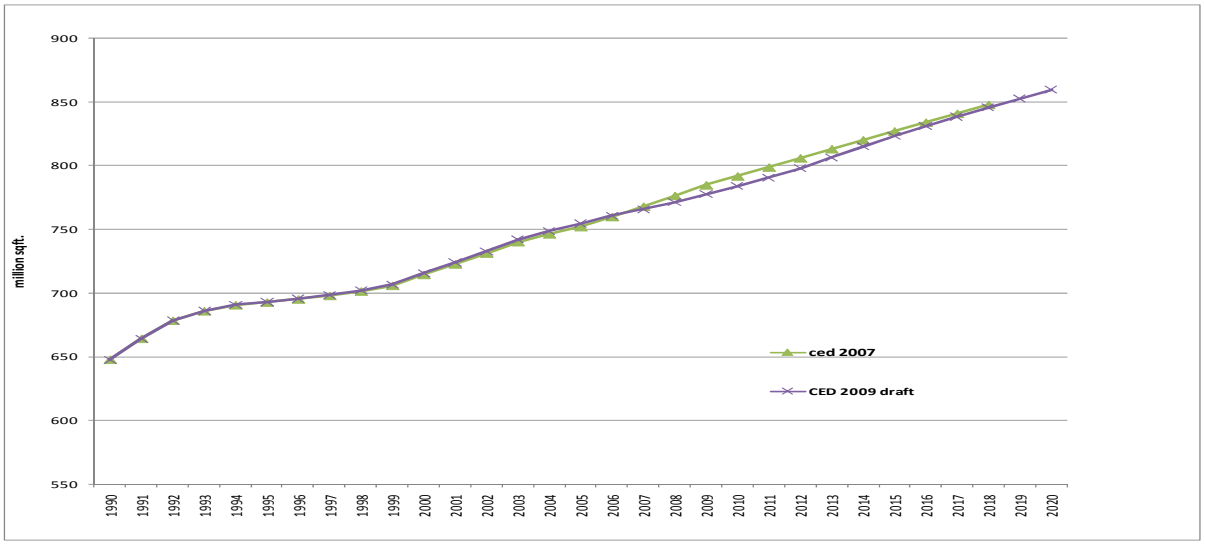
Figure 6-14: LADWP Planning Area Commercial Sector Peak



Source: California Energy Commission, 2009

In staff's commercial building sector forecasting model, floor space by building type (for example, retail, offices, and schools) is the key driver of energy demand trends. The commercial building floor space forecast is based on the historic trend of additions in the LADWP planning area. **Figure 6-15** compares total commercial floor space projections. For the LADWP planning area the *CED 2009* floor space projections are lower in the short- and intermediate-term than the *CED 2007* floor space projections because of methodology changes in estimation discussed in Chapter 1.

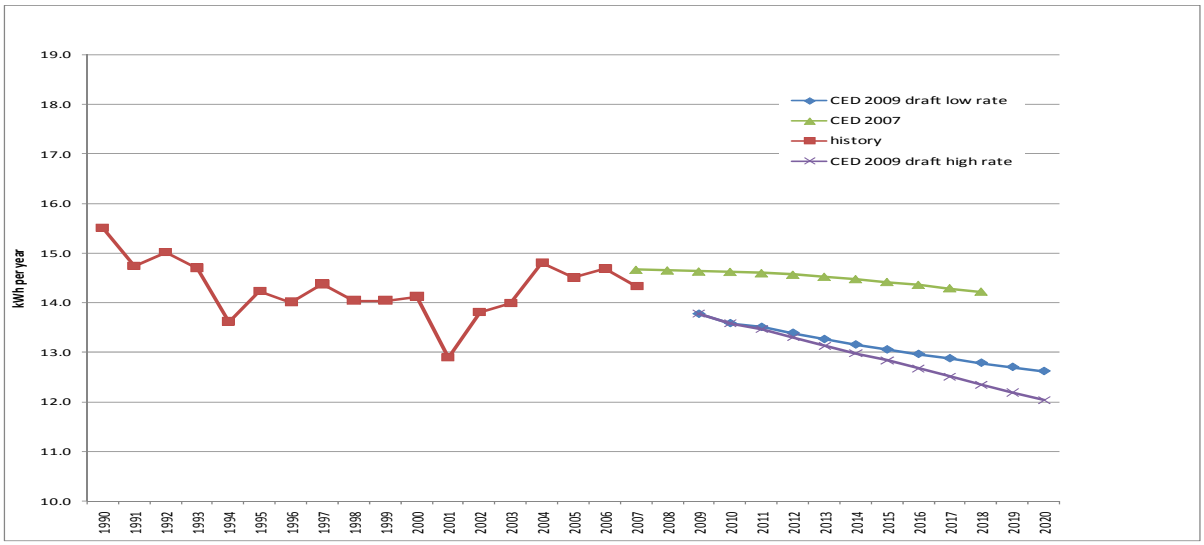
Figure 6-15: LADWP Planning Area Commercial Floor Space



Source: California Energy Commission, 2009

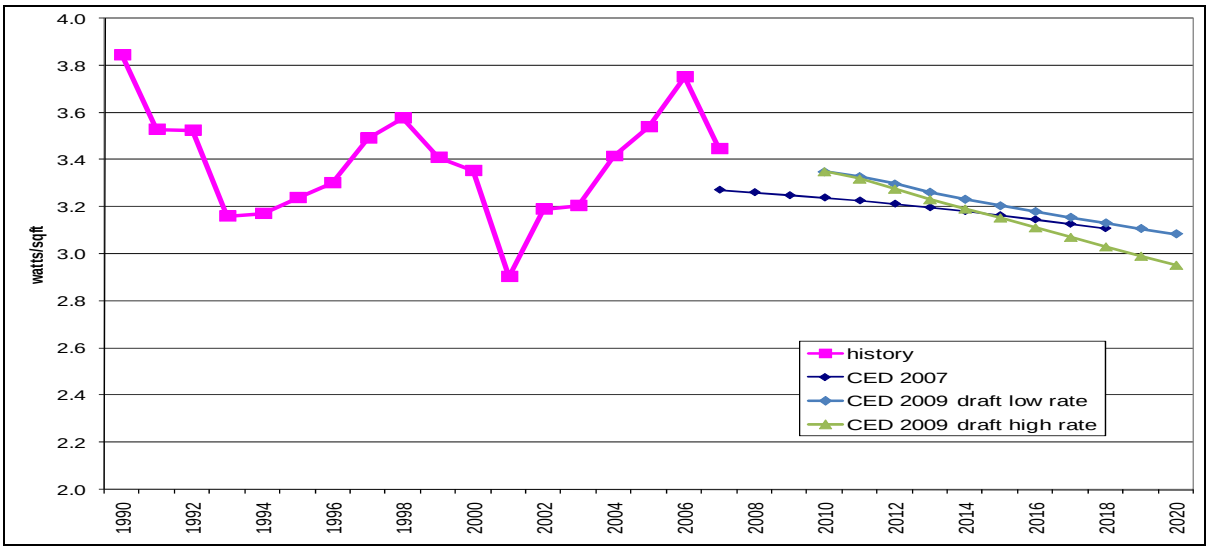
Projected use per square foot over the forecast period, shown in **Figures 6-16** and **6-17** declines in both the energy (**Figure 6-16**) and peak (**Figure 6-17**) cases. This decline is a result of an increasing proportion of new floor space with more efficient end use intensities. Commercial consumption per square foot, in terms of energy and peak, decreases sharply in the forecast period of the *CED 2009* although the peak use per square foot starts from a higher value than assumed in *CED 2007*.

Figure 6-16: LADWP Planning Area Commercial kWh per Square Foot



Source: California Energy Commission, 2009

Figure 6-17: LADWP Planning Area Commercial Watts per Square Foot

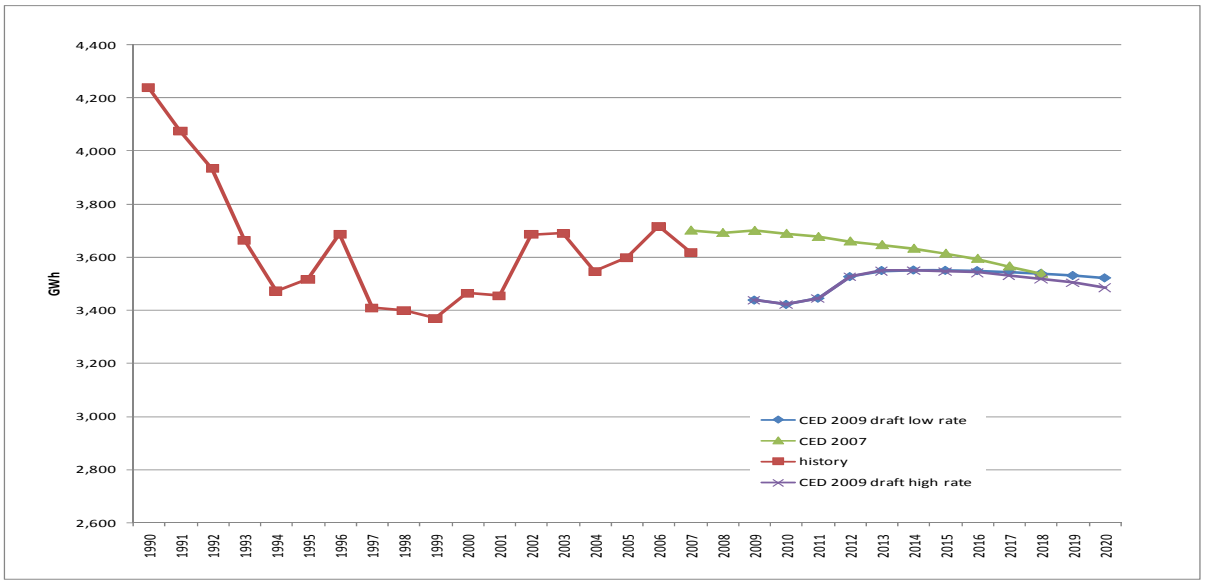


Source: California Energy Commission, 2009

Industrial Sector

Figure 6-18 provides comparisons of the LADWP planning area industrial sector electricity consumption forecasts. The *CED 2009* industrial electricity consumption forecast is much lower at the beginning of the forecast period because of current economic conditions. The *CED 2009* forecast then grows in the intermediate term and ends at essentially the same place as the *CED 2007* forecast

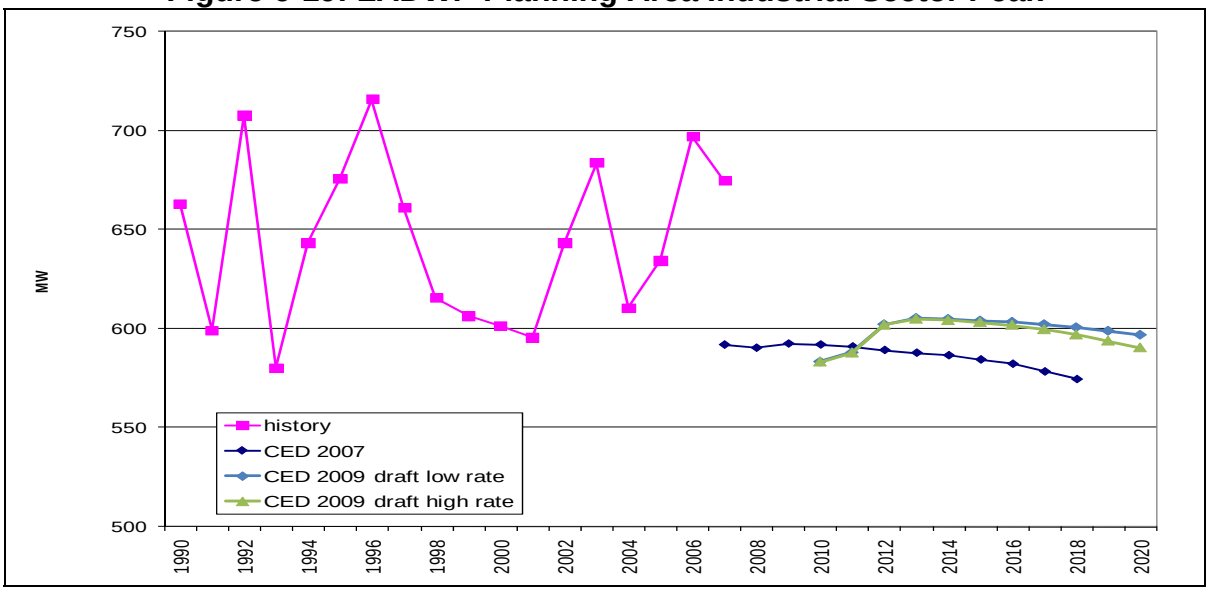
Figure 6-18: LADWP Planning Area Industrial Consumption



Source: California Energy Commission, 2009

Figure 6-19 compares the industrial sector peak forecasts. The differences in peak forecasts are driven by the energy forecast differences.

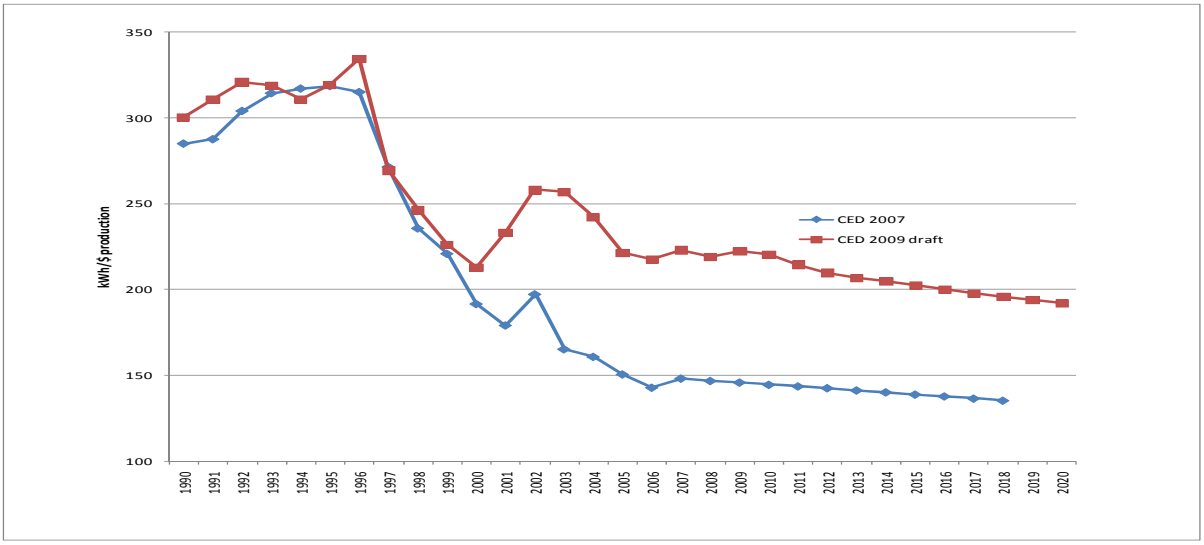
Figure 6-19: LADWP Planning Area Industrial Sector Peak



Source: California Energy Commission, 2009

Figure 6-20 compares use per dollar value of production between the *CED 2009* and *CED 2007* forecasts. The difference in starting points is a reflection of revised historic industrial production estimates provided by Economy.com. Both forecasts decline at similar rates.

Figure 6-20: LADWP Planning Area Industrial Use per Production Unit

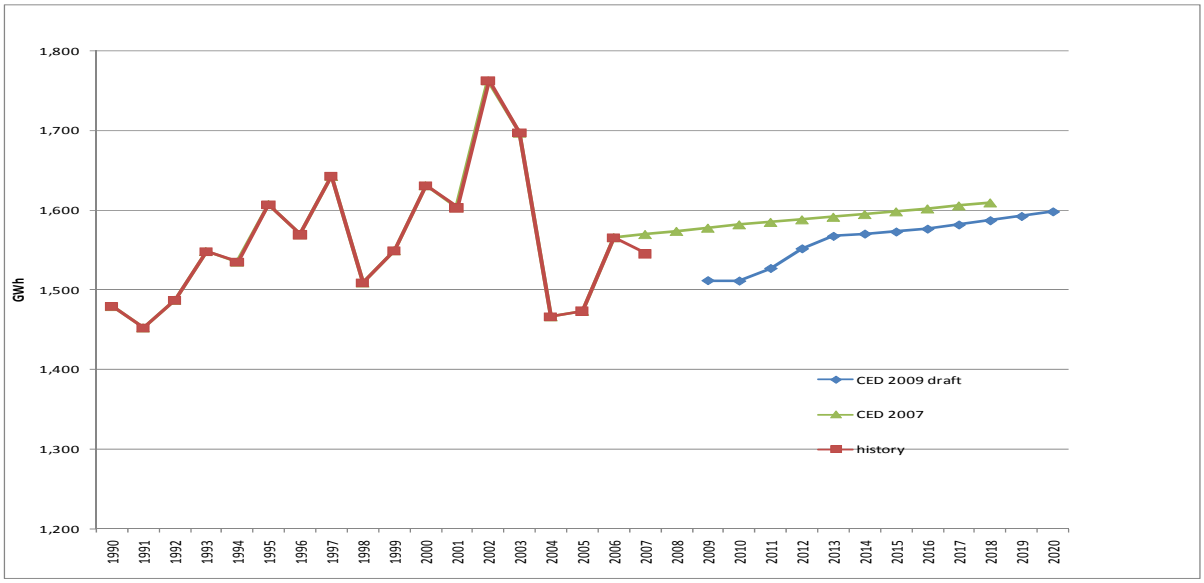


Source: California Energy Commission, 2009

Other Sectors

Figures 6-21 and **6-22** compare the remaining sector electricity consumption forecasts. **Figure 6-21** compares the transportation, communication, and utilities sector forecasts. The *CED 2009* transportation, communication, and utilities forecast is lower than the *CED 2007* forecast due to lower historic starting point.

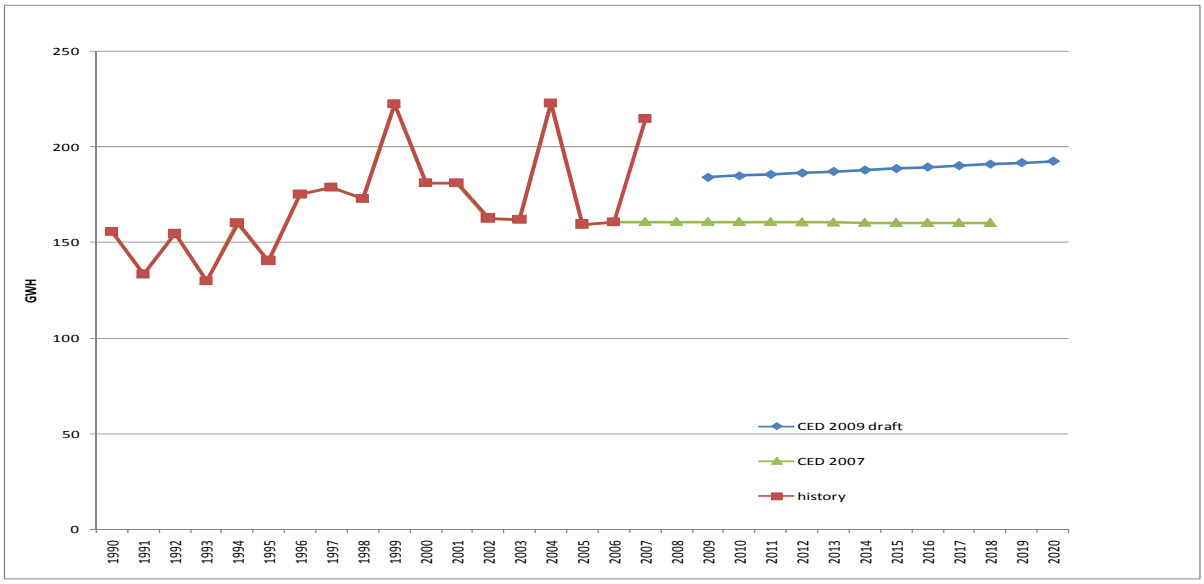
Figure 6-21: LADWP Planning Area Transportation, Communication, and Utilities Sector Electricity Consumption



Source: California Energy Commission, 2009

Figure 6-22 provides comparisons of the agriculture and water pumping sector forecasts. The *CED 2009* agriculture and water pumping forecast is projected to increase slightly over the forecast period. The *CED 2009* forecast is slightly higher over the entire period because of a higher starting value based on more recently reported sector specific consumption data. The increase in the agriculture and water pumping sector is caused by increased water demands.

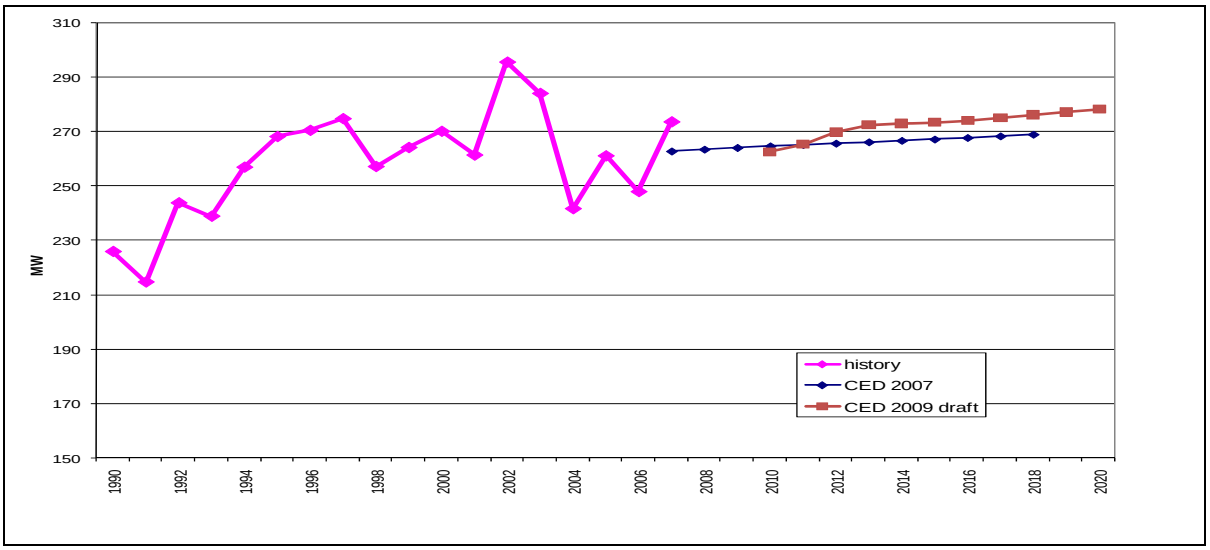
Figure 6-22: LADWP Planning Area Agriculture & Water Pumping Electricity Consumption Forecasts



Source: California Energy Commission, 2009

Figure 6-23 compares the combined Other Sector peaks for the *CED 2009* and *CED 2007* forecasts. The *CED 2009* forecast starts at a lower historic point. The projected growth of the *CED 2009* forecast increases slightly while the *CED 2007* forecast was relatively constant.

Figure 6-23: LADWP Planning Area Other Sector Peak

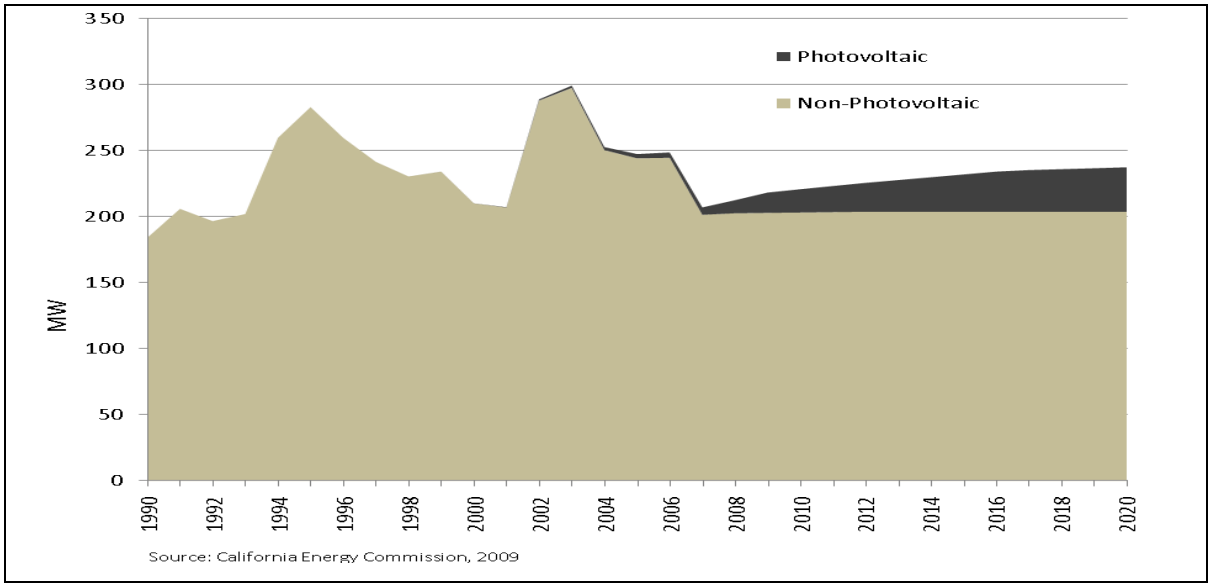


Source: California Energy Commission, 2009

Self-Generation

The peak demand forecast is reduced by self generation, including the effects of the SGIP, CSI, and other programs, as discussed in Chapter 1. The effects of these programs are forecast based on recent trends in installations. **Figure 6-24** shows the staff draft forecast of peak impacts from photovoltaic and non-photovoltaic self generation. Based on current trends, staff projects about 35 MW of peak reduction from photovoltaic systems by 2020.

Figure 6-24: LADWP Planning Area Self Generation Peak Forecast



Conservation/Efficiency Impacts

Tables 6-2 and **6-3** show electricity consumption and peak savings estimates for selected years, for building and appliance standards, utility and public agency programs, and "naturally occurring" savings, or savings associated with rate changes and certain market trends not directly related to programs or standards. Savings are measured against a baseline before 1975, so they incorporate more than 30 years of impacts from rate changes and standards. Chapter 8 provides more detail on staff work related to energy efficiency and conservation.

Table 6-2: LADWP Planning Area Electricity Consumption Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (GWh)							
Building Standards	257	269	287	282	303	329	363
Appliance Standards	209	559	842	1037	1120	1207	1286
Utility and Public Agency Programs	31	77	30	25	28	34	33
Naturally Occurring Savings	4	6	6	42	151	303	505
Total Residential Savings	500	911	1166	1386	1602	1873	2187
Commercial Energy Savings (GWh)							
Building Standards	134	253	372	484	555	693	864
Appliance Standards	91	174	239	302	334	393	465
Utility and Public Agency Programs*	36	14	2	0	0	0	0
Naturally Occurring Savings	888	1036	766	481	883	979	1199
Total Commercial Savings	1149	1477	1379	1267	1773	2066	2529
Total Energy Savings	1649	2387	2545	2653	3374	3938	4716

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

Table 6-3: LADWP Planning Area Electricity Peak Savings Estimates

	1990	1998	2003	2008	2011	2015	2020
Residential Energy Savings (MW)							
Building Standards	60	70	65	69	70	76	84
Appliance Standards	49	146	191	253	258	279	296
Utility and Public Agency Programs	7	20	7	6	6	8	8
Naturally Occurring Savings	1	1	1	10	35	70	116
Total Residential Savings	116	237	264	338	369	433	504
Commercial Energy Savings (MW)							
Building Standards	33	65	85	125	134	167	207
Appliance Standards	22	44	55	78	81	95	112
Utility and Public Agency Programs*	9	4	0	0	0	0	0
Naturally Occurring Savings	220	264	176	124	213	236	288
Total Commercial Savings	285	376	316	327	428	497	606
Total Energy Savings	401	614	580	665	798	931	1110

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

CHAPTER 7: End-User Natural Gas Demand Forecast

This chapter presents the draft forecasts of end-user natural gas demand for the PG&E, Southern California Gas (SCG), and SDG&E natural gas planning areas. Staff prepares these forecasts in parallel with its electricity demand forecasts. The models used by staff are organized along electricity planning area boundaries. The gas demand forecasts presented here are the aggregate of gas demand in the corresponding electricity planning areas. These forecasts do not include natural gas used by utilities or others for electric generation.

The *CEC 2009* forecasts incorporate preliminary forecasts of natural gas prices, and historical consumption data for 2007. See Chapter 1 for a discussion of economic and demographic assumptions.

Statewide Forecast Results

Table 7-1 compares the statewide *CEC 2009* forecast with the *CED 2007* forecast for selected years. As in the case of electricity, three rate scenarios were used, as described later in the chapter. For comparisons with the previous forecast, the high-rate case is used, as rates in this scenario are most similar to rates used in *CED 2007*.

The new forecast is lower in the near term (2010) given current economic conditions, and because recorded 2007 consumption is lower than that forecast for *CED 2007*. In addition, longer-term growth declines relative to the previous forecast because of lower projected economic growth for 2010-2018 (see Chapter 1), so that by 2018 consumption is projected to be almost six percent lower than in *CED 2007*.

Table 7- 1: Statewide Natural Gas Forecast Comparison

	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
	(MM Therms)		
1990	12,893	12,893	0. 00%
2000	13,913	13,913	0. 00%
2007	13,386	13,216	-1. 27%
2010	13,616	12,992	-4. 59%
2018	14,058	13,236	-5. 85%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	0. 76%	0. 76%	
2000- 2007	-0. 55%	-0. 73%	
2007- 2010	0. 57%	-0. 57%	
2010- 2018	0. 40%	0. 23%	

Source: California Energy Commission, 2009

Figure 7-1 compares the forecast by region. As in the state forecast, gas consumption projections in both Southern and Northern California fall in the short term and increase thereafter at a lower rate compared to *CED 2007*.

Figure 7-2 compares the draft forecast of per capita natural gas consumption with *CED 2007*. Annual per capita demand varies in response to annual temperatures and business conditions, but has generally been declining over time. As would be expected from statewide consumption results, per capita natural gas consumption drops below *CED 2007* levels. Both forecasts, however, project a steady decline in per capita consumption over the forecast period.

Figure 7- 1: Natural Gas Consumption Forecast (High-Rate Case)

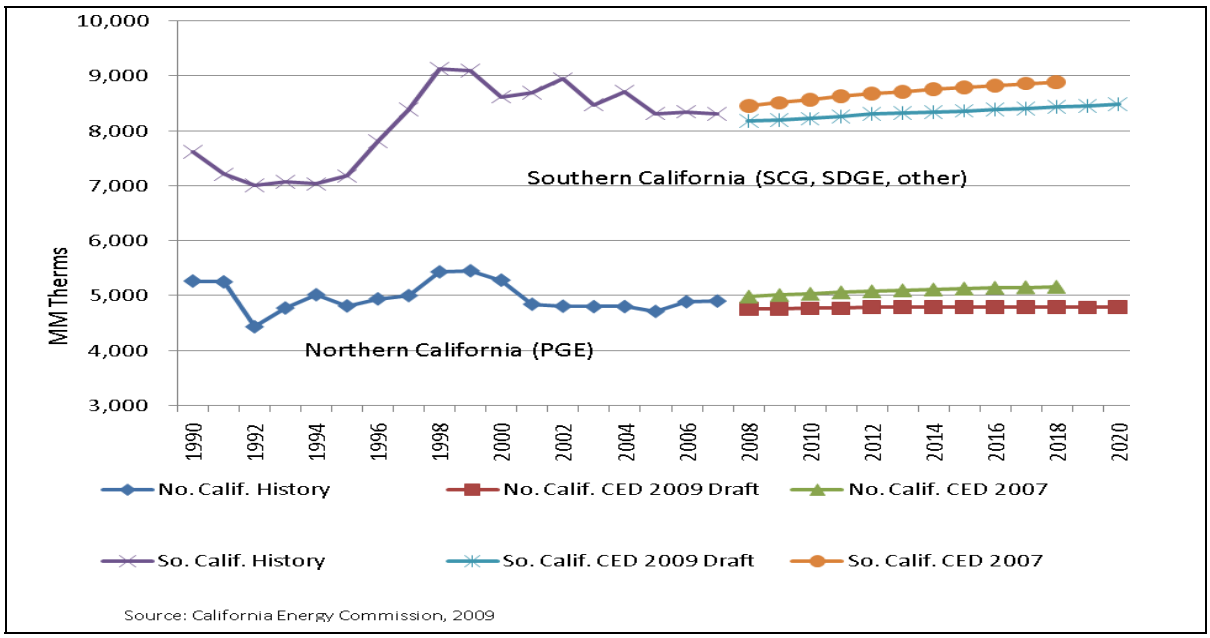
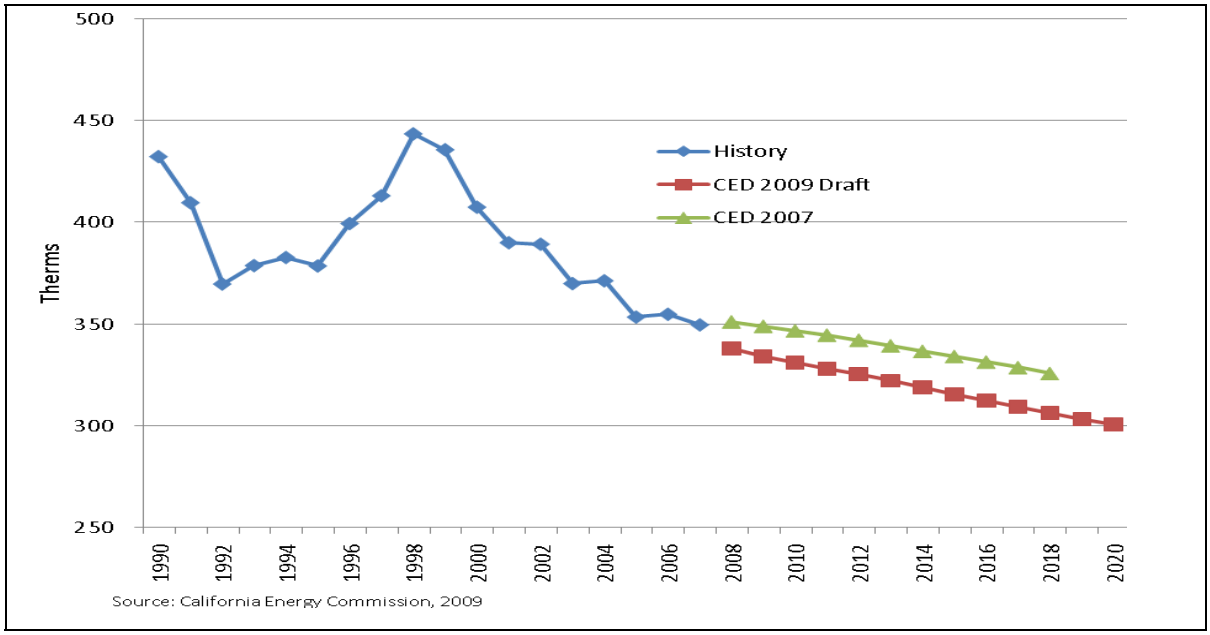


Figure 7- 2: Statewide per Capita Natural Gas Consumption (High-Rate Case)

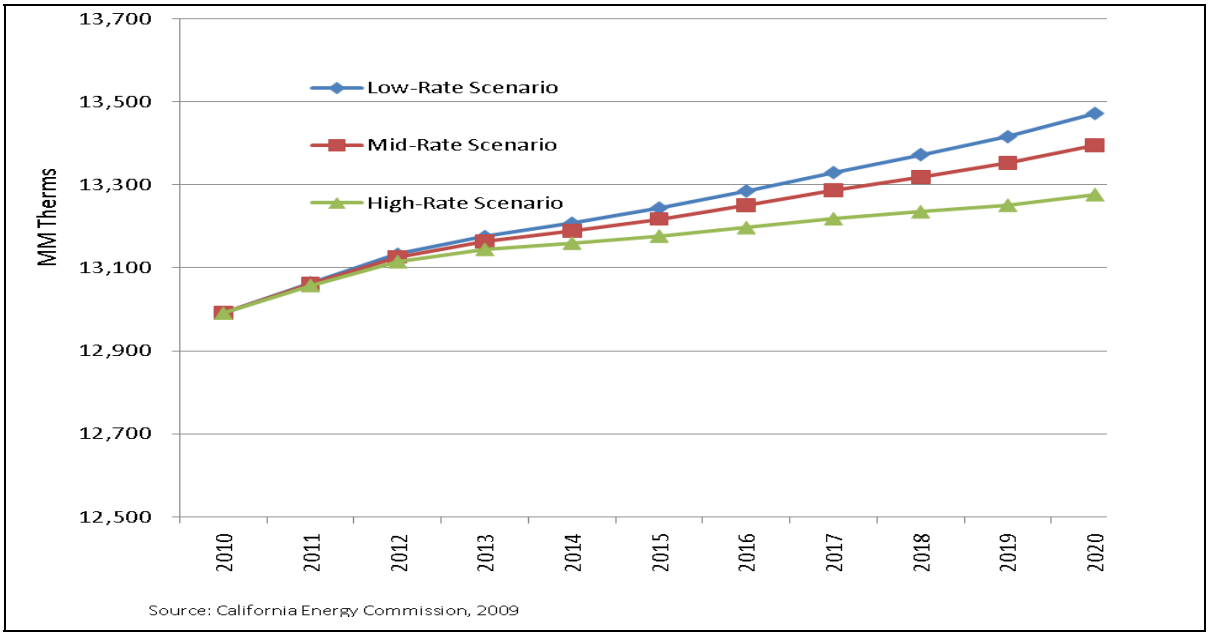


Three scenarios were developed for natural gas rates: high rates, low (constant) rates, and a rate scenario in between the two. The high case for natural gas had rates 30 percent higher by 2020

relative to 2010, matching the increase assumed in staff projections for the *2007 IEPR*,[15] and the "mid" case assumed 10 percent higher prices by 2020, equal to the rate of increase in the "base case" projections used for the scenario analyses undertaken for the *2007 IEPR*. [16] In the low case, rates remained at 2010 levels through 2020.

Figure 7-3 shows projected total statewide natural gas consumption for the three rate scenarios. Under the high-rate scenario, projected natural gas consumption in 2020 is down by around 1.5 percent relative to the low-rate scenario. The estimated price response is lower than that for electricity, since a similar increase (30 percent) in electric rates reduces electricity consumption by 1.8 percent by the end of the forecast period. In the mid-rate case, projected consumption is reduced by around 0.6 percent by 2020. As with electricity, the price response comes from the commercial, residential, and industrial sectors; the agricultural/water pumping and transportation, communications and utility (TCU) are assumed to have a price elasticity of zero. Most of the response owes to the Commercial Model, with a much smaller effect for the Residential and Industrial Models.

Figure 7- 3: Natural Gas Statewide Consumption by Rate Scenario



[15] These projections were not officially adopted for the *2007 IEPR*.

[16] California Energy Commission, *Scenario Analyses of California's Electricity System: Preliminary Results for the 2007 Integrated*

Energy Policy Report, CEC-200-2007-010-SF, June 2007.

Planning Area Results

This section presents forecasting results for each of the three planning areas, including sector level projections. As in the previous section, the high-rate case is used for comparisons with the previous forecast, as rates in this scenario are most similar to rates used in *CED 2007*.

Pacific Gas and Electric Planning Area

The PG&E natural gas planning area is defined as the combined PG&E and SMUD electric planning areas. It includes all PG&E retail gas customers and customers of private marketers using the PG&E natural gas distribution system.

Table 7-2 compares the draft PG&E planning area forecast with *CED 2007*. As in the statewide case, demand drops from 2007 to 2010, so that consumption is projected to be more than five percent less than *CED 2007* by 2010. Longer-term growth is expected to be lower than in the previous forecast, increasing the difference between the two forecasts to more than seven percent by 2018.

Table 7- 2: PG&E Natural Gas Forecast Comparison

	Consumption (MM Therms)		
	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
1990	5,275	5,275	0. 00%
2000	5,291	5,291	0. 00%
2007	4,961	4,912	-0. 98%
2010	5,038	4,765	-5. 40%
2018	5,163	4,803	-6. 98%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	0. 03%	0. 03%	
2000- 2007	-0. 92%	-1. 06%	
2007- 2010	0. 52%	-1. 00%	
2010- 2018	0. 31%	0. 10%	

Source: California Energy Commission, 2009

Figure 7-4 compares the *CED 2009* and *CED 2007* PG&E planning area residential forecasts. The *CED 2009* forecast is lower throughout the entire forecast period as actual consumption recorded in 2007 was lower than predicted in *CED 2007*, but the two forecasts have nearly the same growth rate, just over one percent.

Figures 7-5 and **7-6** show the forecasts for the PG&E commercial and industrial sectors, which are responsible for most of the reduction in consumption relative to *CED 2007*. By 2018,

projected consumption is down by almost 16 percent in the commercial sector and by more than seven percent in the industrial sector. A major part of the drop in these sectors occurs early in the forecast period (by 2010), because of short-term economic conditions. In the case of commercial, a significant reduction in actual 2007 consumption compared to what was forecast in *CED 2007* (8.3 percent) adds to this difference.

Figure 7-7 shows projected natural gas consumption for the three rate scenarios. By 2020, consumption is down by around 1.7 percent and 0.7 percent, respectively, in the high- and mid-rate cases relative to the constant rate scenario. Rate increases in the high scenario begin to reduce consumption slightly by 2014.

Figure 7- 4: PG&E Planning Area Residential Gas Consumption (High-Rate Case)

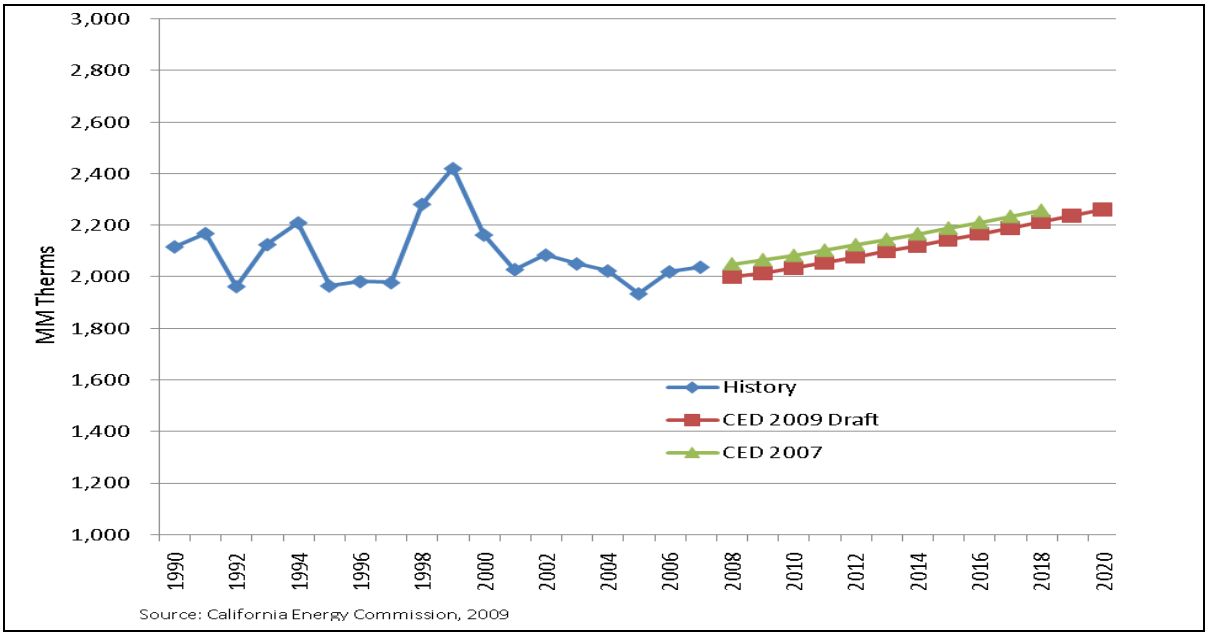


Figure 7- 5: PG&E Planning Area Commercial Gas Consumption (High-Rate Case)

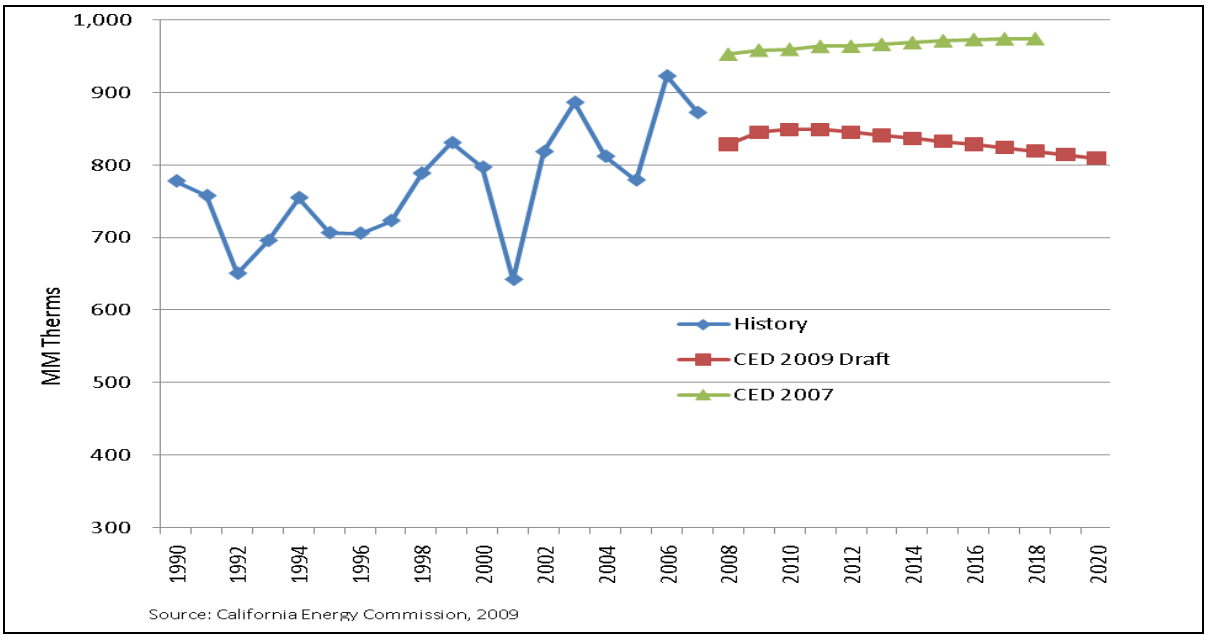


Figure 7- 6: PG&E Planning Area Industrial Gas Consumption (High-Rate Case)

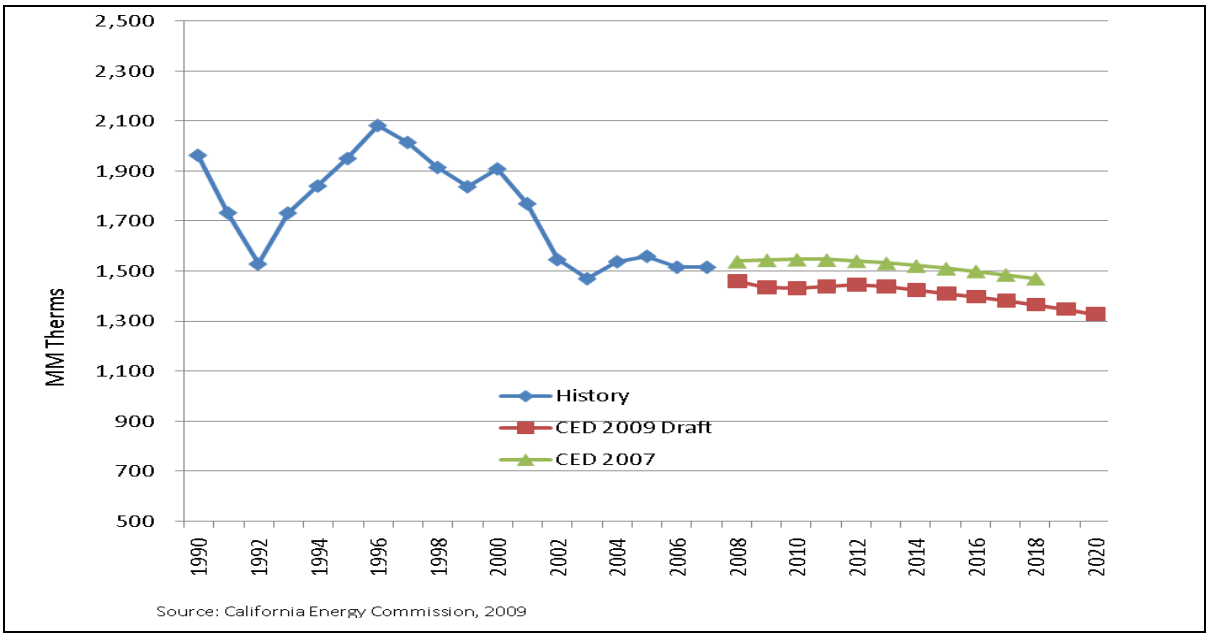
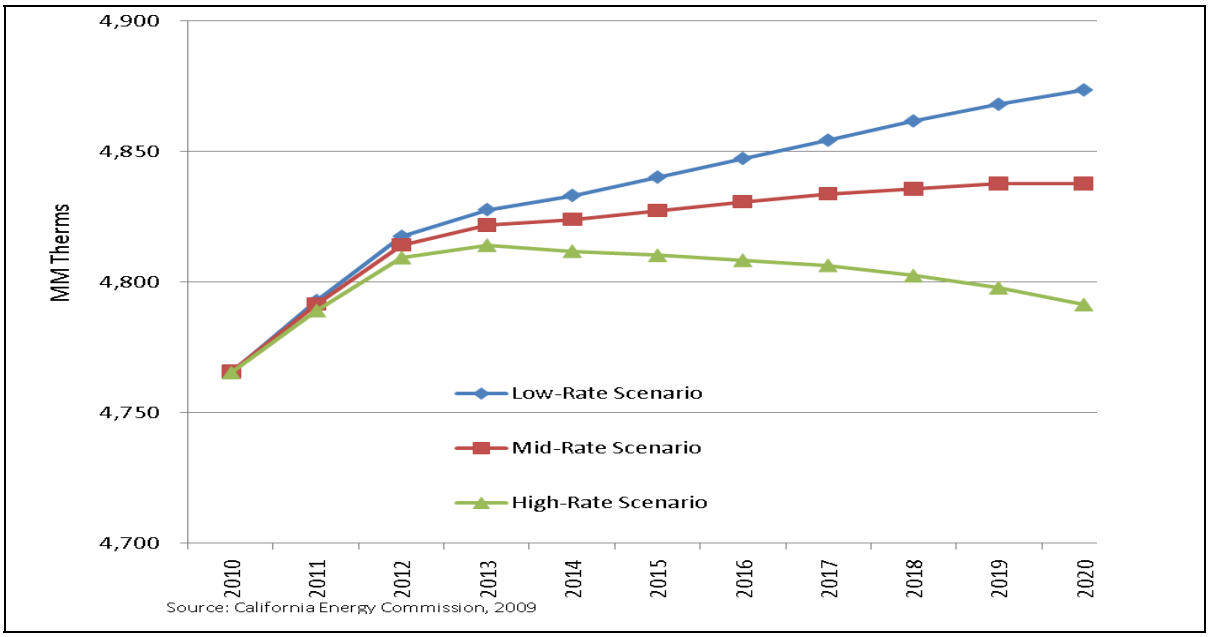


Figure 7- 7: PG&E Gas Consumption by Rate Scenario



Southern California Gas Company Planning Area

The SCG planning area is comprised of the SCE, Burbank and Glendale, Pasadena, and LADWP electric planning areas. It includes customers of those utilities, plus customers of private marketers using the SCG natural gas distribution system.

Table 7-3 compares the draft SCG planning area forecast with *CED 2007*. As in the statewide case, demand declines from 2007 to 2010, so that consumption is projected to be almost four percent less than *CED 2007* by 2010. Longer-term growth is expected to be slightly lower than in the previous forecast, increasing the difference between the two forecasts to almost five percent by 2018.

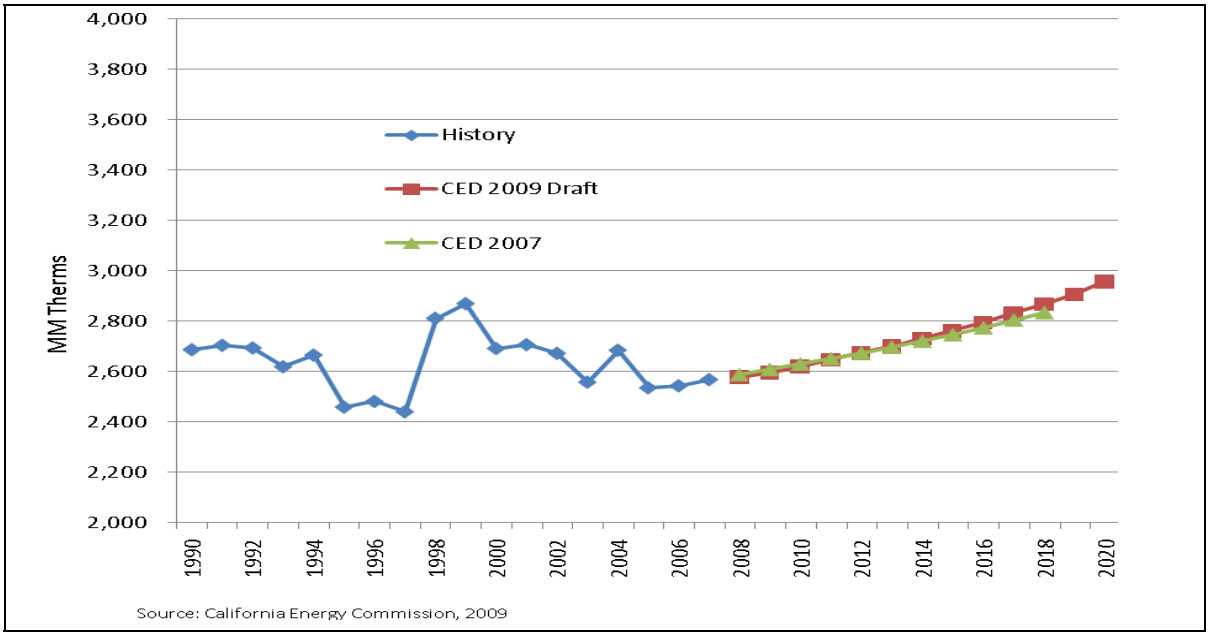
Table 7- 3: SCG Natural Gas Forecast Comparison

	Consumption (MM Therms)		
	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
1990	6,806	6,806	0. 00%
2000	7,938	7,938	0. 00%
2007	7,707	7,605	-1. 32%
2010	7,835	7,545	-3. 70%
2018	8,083	7,688	-4. 88%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	1. 55%	1. 55%	
2000- 2007	-0. 42%	-0. 61%	
2007- 2010	0. 55%	-0. 26%	
2010- 2018	0. 39%	0. 24%	

Source: California Energy Commission, 2009

Figure 7-8 compares the *CED 2009* and *CED 2007* SCG planning area residential forecasts. The two forecasts are almost identical, although the *CED 2009* projects a slightly lower consumption growth rate in the later years of the forecast period.

Figure 7- 8: SCG Planning Area Residential Gas Consumption (High-Rate Case)



Figures 7-9 and **7-10** show the forecasts for the PG&E commercial and industrial sectors, relative to *CED 2007*. The largest reductions in consumption are expected in the commercial sector, down by over nine percent by 2018, from lower projected long-term growth in the commercial sector. In the industrial sector, after a short-term decline relative to the previous forecast, consumption demand rises slightly above *CED 2007*, as expected industrial output growth is slightly higher than in the *CED 2007* projections in the later years of the forecast.

Figure 7-11 shows projected natural gas consumption for the three rate scenarios. By 2020, consumption is down by around 1.7 percent and 0.7 percent, respectively, in the high- and mid-rate cases relative to the low-rate scenario.

Figure 7- 9: SCG Planning Area Commercial Gas Consumption (High-Rate Case)

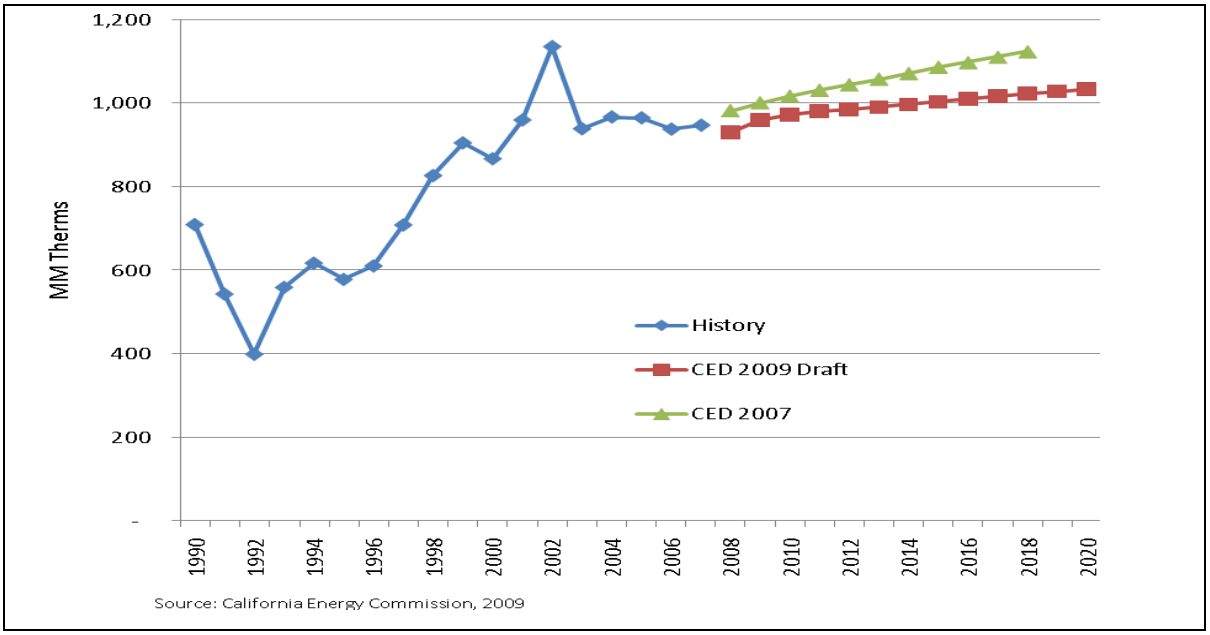


Figure 7- 10: SCG Planning Area Industrial Gas Consumption (High-Rate Case)

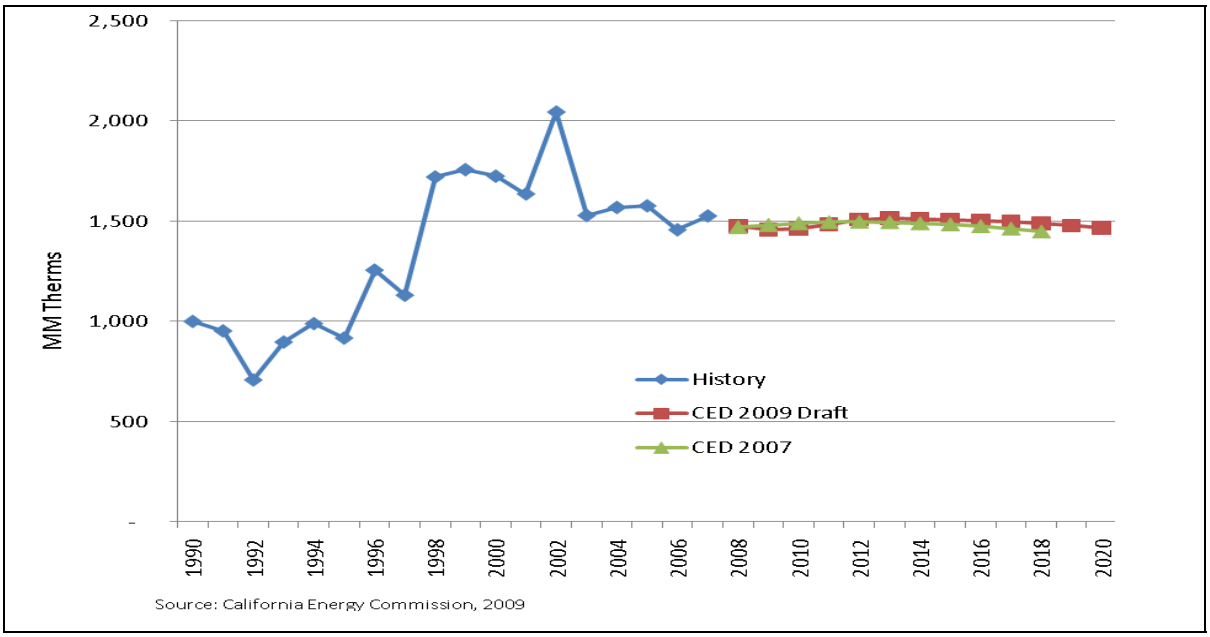
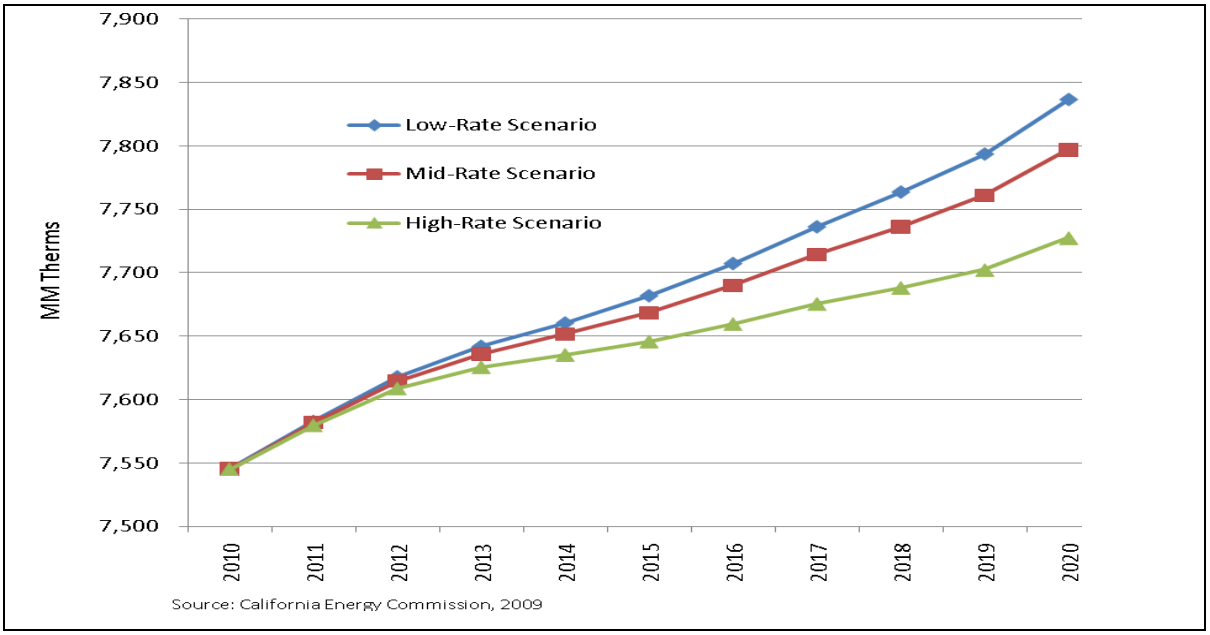


Figure 7- 11: SCG Gas Consumption by Rate Scenario



San Diego Gas and Electric Planning Area

The SDG&E planning area contains SDG&E customers plus customers of private marketers using the SDG&E natural gas distribution system.

Table 7-4 compares the draft SDG&E planning area forecast with *CED 2007*. Demand declines slightly from 2007 to 2010, so that consumption is projected to be over ten percent less than *CED 2007* by 2010. Longer-term growth, however, is expected to be slightly higher than in the previous forecast, decreasing slightly the difference between the two forecasts by 2018.

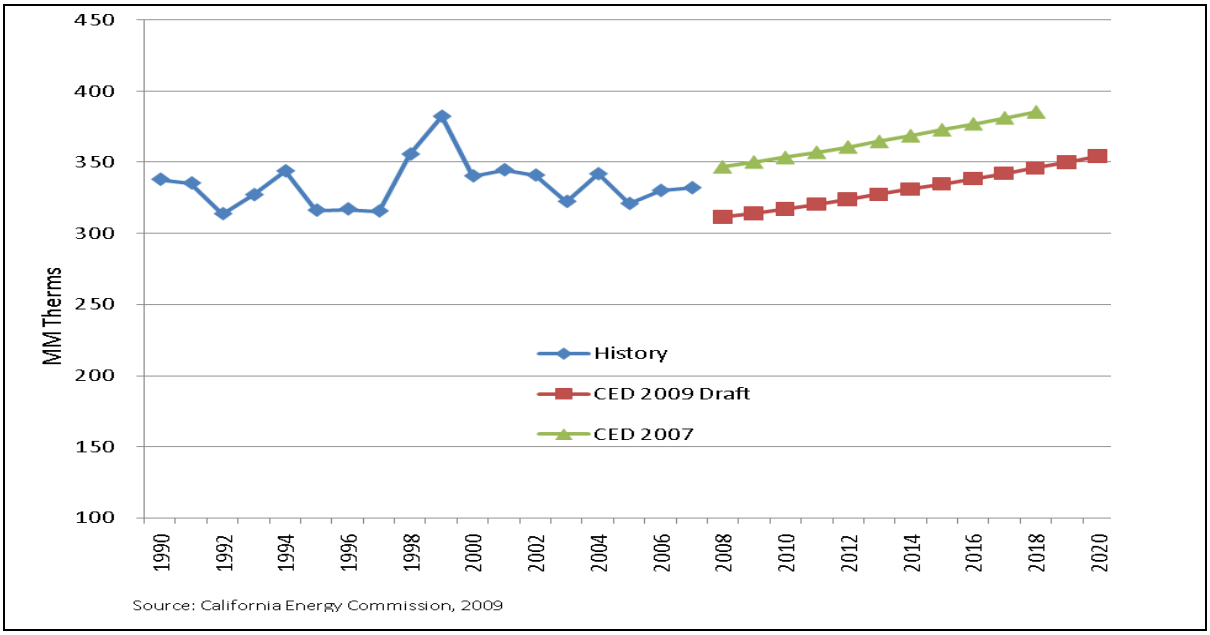
Table 7- 4: SDG&E Natural Gas Forecast Comparison

	Consumption (MM Therms)		
	CED 2007	*CED 2009* (High-Rate Case)	Percent Difference
1990	717	717	0. 00%
2000	565	565	0. 00%
2007	567	547	-3. 43%
2010	588	525	-10. 68%
2018	645	577	-10. 50%
Historic values are shaded			
	Annual Average Growth Rates		
1990- 2000	-2. 35%	-2. 35%	
2000- 2007	0. 03%	-0. 47%	
2007- 2010	1. 25%	-1. 35%	
2007- 2018	1. 16%	1. 18%	

Source: California Energy Commission, 2009

Figure 7-12 compares the *CED 2009* and *CED 2007* SDG&E planning area residential forecasts. The growth rates of the two forecasts are almost identical; the difference in level is caused by lower actual consumption in 2007 compared to the *CED 2007* forecast, followed by a projected decline in 2008.

Figure 7- 12: SDG&E Planning Area Residential Gas Consumption (High-Rate Case)



Figures 7-13 and **7-14** show the forecasts for the PG&E commercial and industrial sectors relative to *CED 2007*. The largest reductions in consumption are expected in the commercial sector, down by more than 12 percent by 2018 because of a decline in 2008 relative to the previous forecast and lower projected long-term growth in the commercial sector. In the industrial sector, the decline is slightly less, around 11 percent by 2018.

Figure 7- 13: SDG&E Planning Area Commercial Gas Consumption (High-Rate Case)

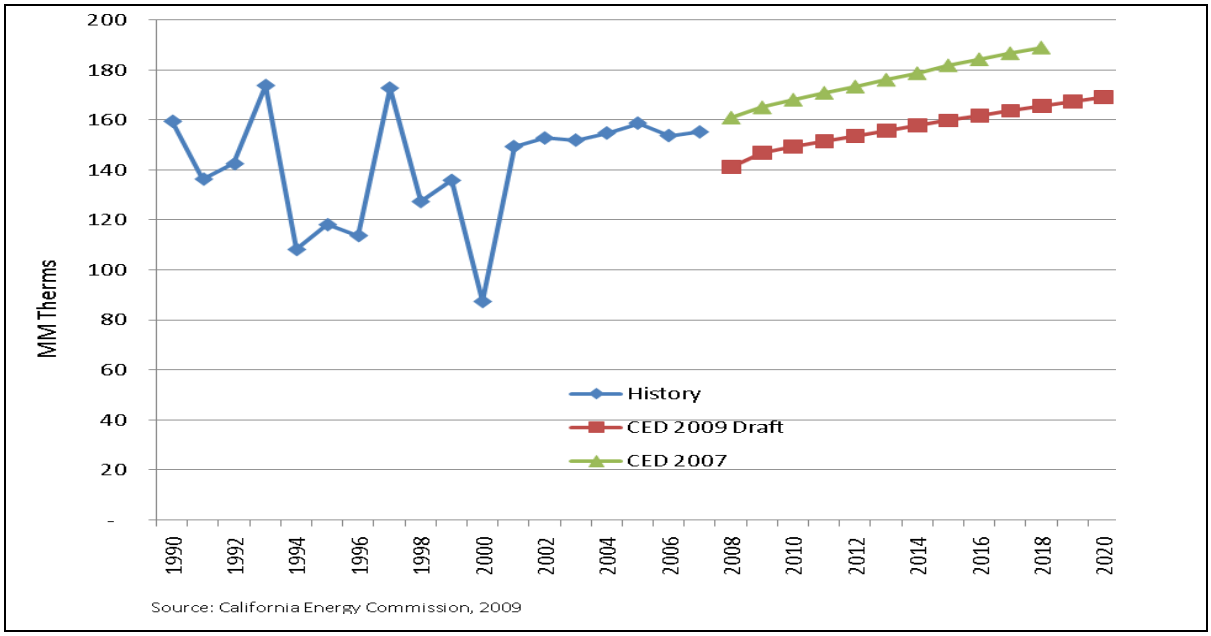


Figure 7- 14: SDG&E Planning Area Industrial Gas Consumption (High-Rate Case)

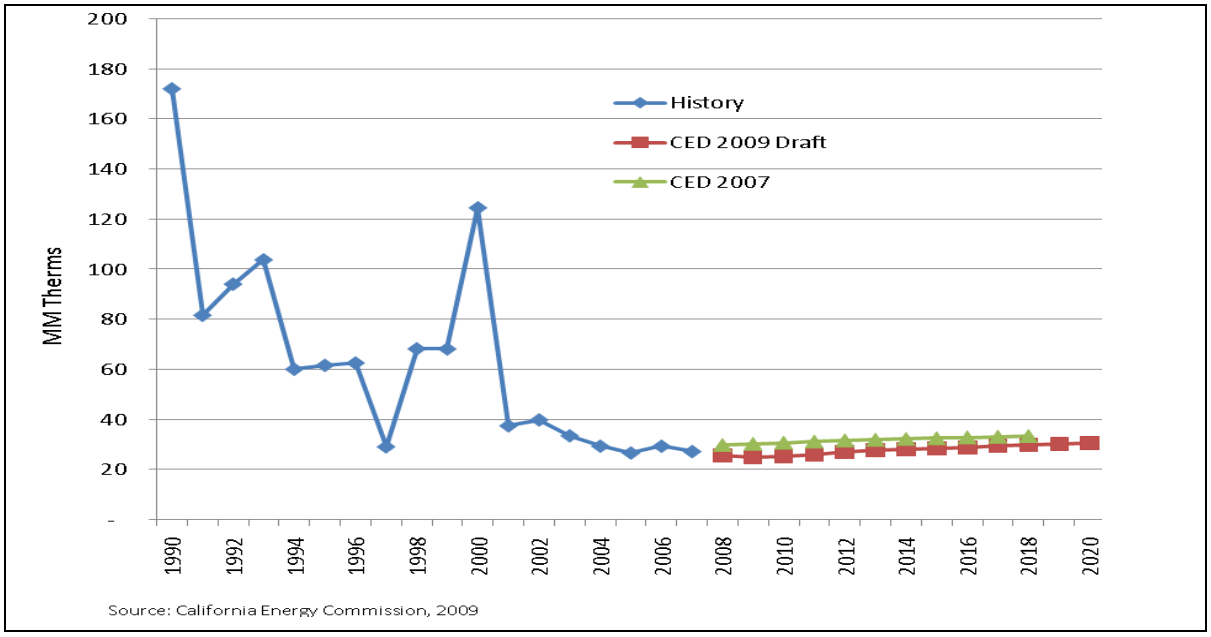
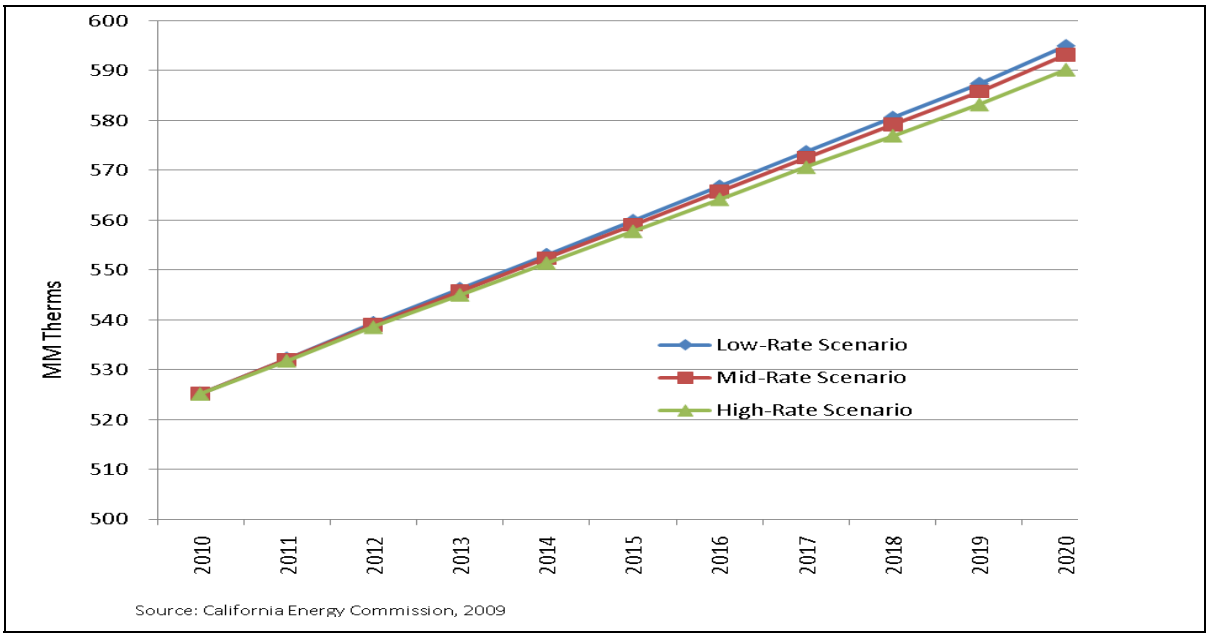


Figure 7-15 shows projected natural gas consumption for the three rate scenarios. By 2020, consumption is down by around 0.8 percent and 0.3 percent, respectively, in the high- and mid-rate cases relative to the low-rate scenario. Price response is significantly lower than in the other planning areas, a reflection of a larger natural gas residential share, a sector with lower responsiveness to price than commercial and industrial consumption.

Figure 7- 15: SDG&E Gas Consumption by Rate Scenario



CHAPTER 8: Energy Efficiency and Conservation

Introduction

With the state's adoption of the first *Energy Action Plan (EAP)* in 2003, energy efficiency became the resource of first choice for meeting the state's future energy needs. Assembly Bill 2021(Levine, Chapter 734, Statutes of 2006) set a statewide goal of reducing total forecasted electricity consumption by 10 percent over the next 10 years. Under AB 2021, the Energy Commission, in consultation with the California Public Utilities Commission (CPUC), is responsible for setting annual statewide efficiency potential estimates and targets in a public process every three years using the most recent IOU and publicly owned utility data. These targets, combined with California's greenhouse gas emission reduction goals, make it essential for the Energy Commission to properly account for energy efficiency impacts when forecasting future electricity and natural gas demand.

Utilities and other stakeholders expressed concern during the 2007 IEPR process about the lack of transparency in staff methods that account for efficiency program impacts in the Energy Commission's demand forecast. In particular, parties asked for clarification of how much uncommitted savings — savings from efficiency programs reasonably expected to occur but not yet implemented or funded — are accounted for in the forecast. Prompted by these concerns, the *2007 IEPR* committed the Energy Commission in 2008 and beyond to examining these methods in a public process that includes the CPUC staff, utilities, and other stakeholders.

To better measure and attribute energy efficiency impacts, staff has undertaken the following steps, as detailed in the *2008 IEPR Update*, during the *2009 IEPR* process:

1. Develop a standardized taxonomy of terms encompassing all major concepts applying to efficiency potential studies and energy demand forecasts.
2. Organize and participate in a stakeholder working group designed to address technical efficiency issues and to develop consistent metrics for efficiency analysis across utilities and various agencies.
3. Review and compare the modeling methods, inputs, and data sources used in Commission forecasts of efficiency savings with the consulting firm Itron's Asset Model. Compare interim savings estimates from the Energy Commission's demand forecast and Asset Model for selected programs given common sets of input and modeling assumptions.
4. Refine and improve the Energy Commission's forecasting models to allow more detailed and complete output of committed efficiency savings. Committed savings are those from efficiency programs that have already been implemented or have been approved and funded.

5. Investigate alternative forecasting methodologies.

6. Develop an uncommitted energy efficiency projection capability.

Step 1 is designed to improve communication between the Energy Commission, the CPUC, energy utilities, and other interested parties on matters related to energy efficiency impacts. This ongoing effort includes Energy Commission and CPUC staff, as well as input from various utilities.

The stakeholder working group (Step 2) has been meeting since November 2008, and has provided valuable information related to available energy efficiency program data. Step 2, along with progress made in Steps 3 and 4, provides the basis for the committed (funded and/or implemented) energy efficiency program impacts presented below. Step 5 is discussed in the Appendix. Estimation of uncommitted efficiency savings (Step 6) is ongoing, and will be finalized after the revised forecast is completed.

Statewide Results

Staff estimates the savings in energy demand associated with three sources: committed utility and public agency efficiency programs, building and appliance standards, and "naturally occurring" savings, which are intended to capture the impacts from energy price changes and certain market trends not directly associated with programs or standards. Each of these sources is discussed in the following sections. **Table 8-1** shows the estimated historical and projected impacts on residential and commercial electricity consumption and peak demand from each source for the five major California utility planning areas—PG&E, SCE, SDG&E, SMUD, and LADWP — assuming the mid-rate electricity scenario. These estimates essentially function as statewide totals, since the five major utility planning areas serve almost 98 percent of electricity demand. The "Total Savings" column represents the amount of savings from programs, standards, and naturally occurring savings explicitly accounted for in the demand forecast. Total savings would change slightly in the other rate scenarios beginning in 2010, decreasing in the low-rate case and increasing in the high-rate scenario, as discussed later in the chapter.

To give some perspective on the impacts of these savings, **Table 8-1** also shows historical and projected electricity use from the *CED 2009* forecast, as well as historical and projected "unmanaged" use, which means estimated use in the absence of these savings impacts. The last column shows the percentage reduction in use attributed to the impacts of the three sources of savings, calculated by dividing total savings by unmanaged use.

Table 8-1: Electricity Savings for the Five Major California Utilities* Combined—Mid-rate Scenario

Year	Building and Appliance Standards	Utility and Public Agency Programs	Total Savings-Programs, Standards	Naturally Occurring Savings	Total Savings	Elec. Use 2009 Draft Forecast	Elec. Use 2009 Un-managed Forecast	Percent Reduction in Use from Savings
Residential plus Commercial** Consumption Impacts (GWh)								
1990	8,251	1,454	9,705	11,246	20,951	228,473	249,424	8. 4
1998	15,101	3,266	18,366	10,506	28,872	242,561	271,433	10. 6
2003	20,417	4,313	24,730	15,432	40,162	262,099	302,260	13. 3
2008	25,206	8,997	34,203	12,013	46,216	280,184	326,399	14. 2
2011	27,947	12,397	40,344	14,882	55,226	279,880	335,106	16. 5
2015	31,979	9,550	41,529	17,403	58,932	289,493	348,424	16. 9
2020	37,012	4,776	41,788	23,242	65,030	298,616	363,647	17. 9
Residential plus Commercial** Coincident Peak Impacts (MW)								
1990	2,022	354	2,376	2,271	4,647	47,241	51,889	9. 0
1998	3,950	804	4,754	2,228	6,981	54,476	61,458	11. 4
2003	4,934	995	5,930	3,134	9,064	54,842	63,906	14. 2
2008	6,418	2,240	8,658	2,385	11,042	62,948	73,990	14. 9
2011	7,144	3,150	10,294	2,926	13,220	63,130	76,350	17. 3
2015	8,270	2,499	10,769	3,533	14,302	65,968	80,270	17. 8
2020	9,685	1,209	10,894	5,035	15,929	69,244	85,173	18. 7

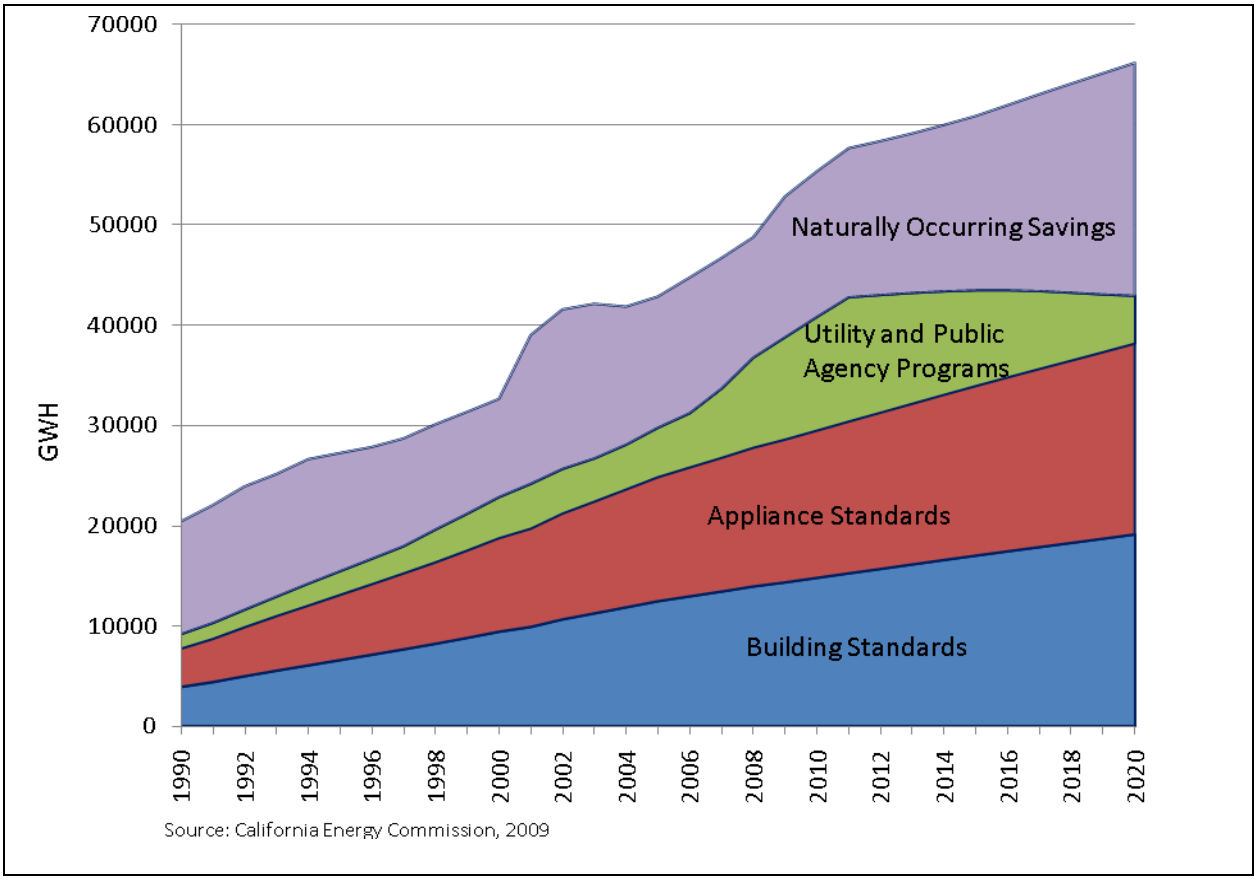
Source: California Energy Commission, 2009

*PG&E, SCE, SDG&E, LADWP, and SMUD.

**Commercial also includes agricultural program savings.

Figure 8-1 shows the distribution of savings by source from 1990-2020, with building and appliance standards broken out separately. Staff tracks historic impacts back to 1975, so naturally occurring savings in 1990 includes the impacts from rate increases in the 1970s and 1980s. Similarly, the entries for 1990 building and appliance standards include accumulated savings from standards implemented before 1990. Naturally occurring savings increase significantly from 2001-2004 because of substantial rate increases in the IOU planning areas, mainly in the commercial sector. From 2010 on, this category increases once again as a result of rate increases for the mid-rate scenario and lighting savings, as discussed later in the chapter. Savings from building and appliance standards together make up the largest share of the total from 1995 on. Utility and public agency program savings reach a maximum share of over 22 percent in 2011, the end of the current three-year CPUC program cycle. Beyond 2011, program savings decline since the staff forecast incorporates only committed impacts.

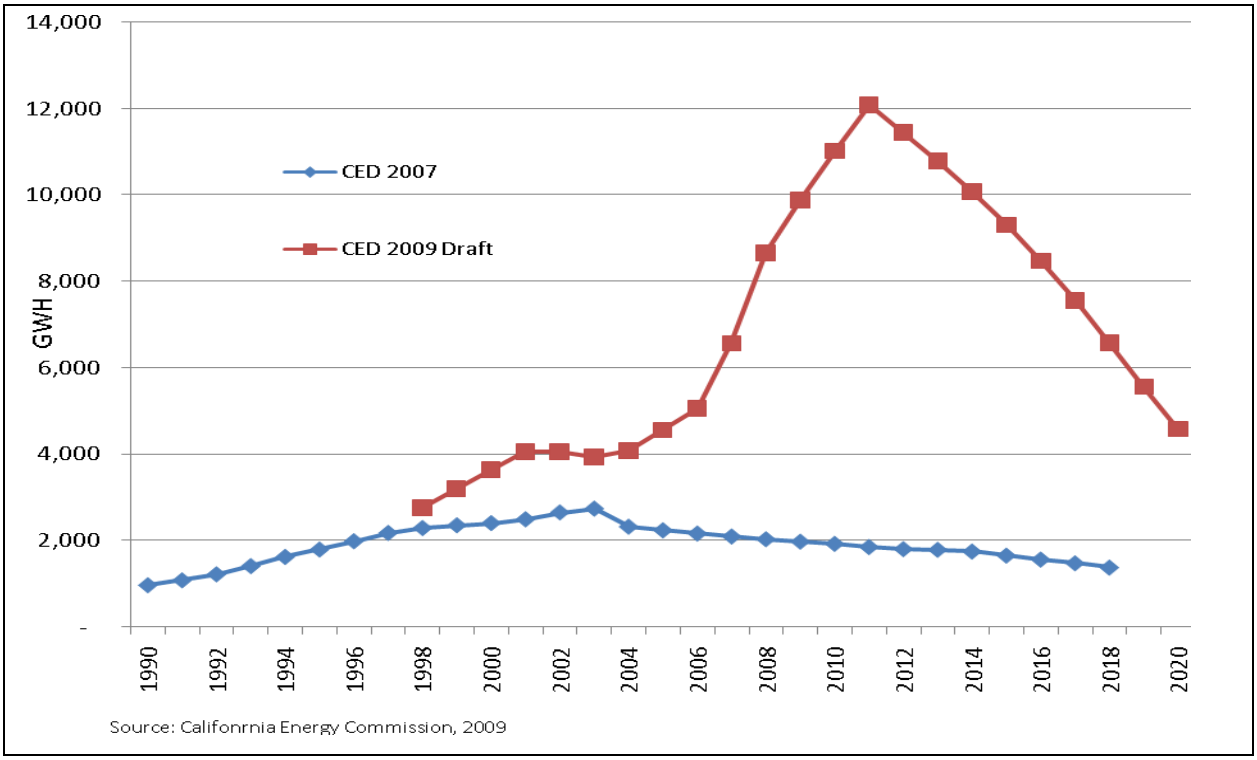
Figure 8-1: Distribution of Efficiency/Conservation Consumption Savings by Source—Mid-Rate Scenario



Utility and Public Agency Programs

The main focus of the effort by staff since the *2007 IEPR* process has been to revise and update estimates of the impacts of utility programs on electricity demand. With the help of the CPUC and the consulting firm Itron, staff set out to re-estimate the historical electricity savings from utility programs as well as to measure the impacts of the 2009-2011 program plans, with the idea of estimating program impacts not previously incorporated in Energy Commission forecasts. **Figure 8-2** shows the results of this analysis for IOUs; impacts for the publicly owned utilities are still under development and will be included in the revised forecast. The figure compares staff's current measurements with the program savings explicitly estimated for *CED 2007*; the difference between the two series indicates preliminary estimates of load impacts attributable to IOU utility programs not captured in the previous forecast.

Figure 8-2: Comparison of Committed Utility Program Consumption Impacts for IOUs



The main difference between impacts in the two forecasts occurs in 2008 and beyond, particularly during the 2009-11 program period, which was not included in *CED 2007*, as the programs were not considered committed. Staff updated program impacts beginning in 1998; the savings estimates from *CED 2007* are used for the 1990-1997 period. Further savings from possible future programs are not considered since the forecast incorporates only committed programs. Additional savings potential will be examined in staff's uncommitted efficiency savings forecast.

Figure 8-3 shows the impacts on electricity consumption from utility programs by IOU. The impact of IOU utility programs reaches a maximum in 2011 and then declines as measure savings decay. **Figure 8-4** provides corresponding peak load impacts and includes the total for the IOUs. **Table 8-2** breaks out the IOU program consumption impacts by sector.

Figure 8-3: Estimated Consumption Impacts from Utility Programs by IOU

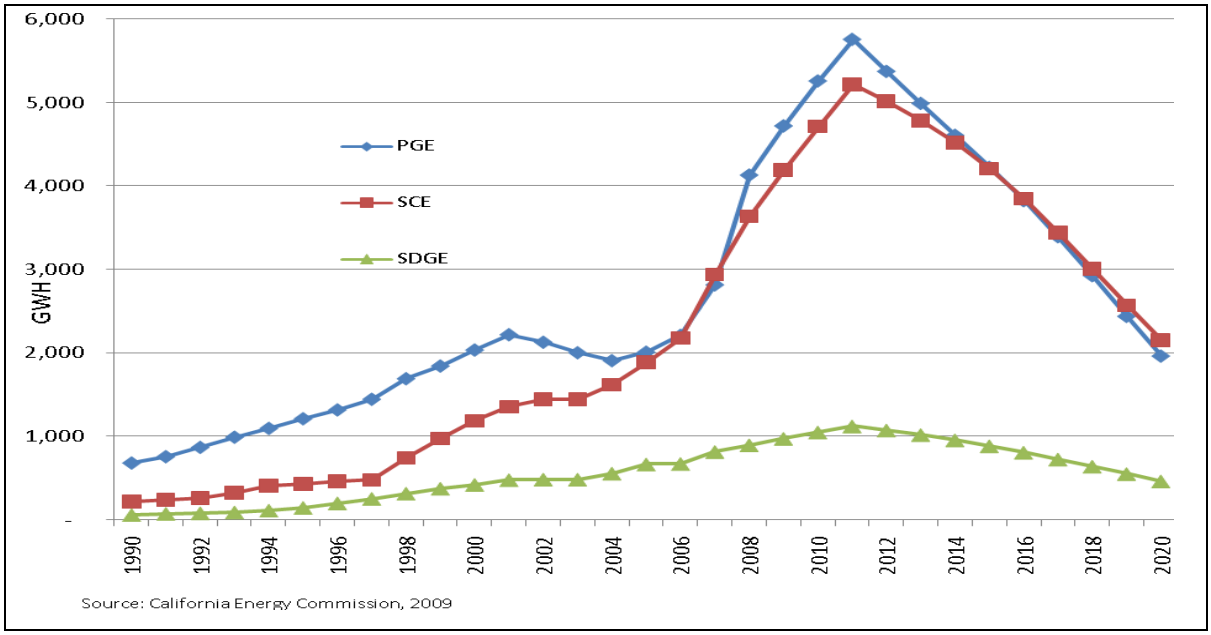


Figure 8-4: Estimated Peak Impacts from IOU Programs

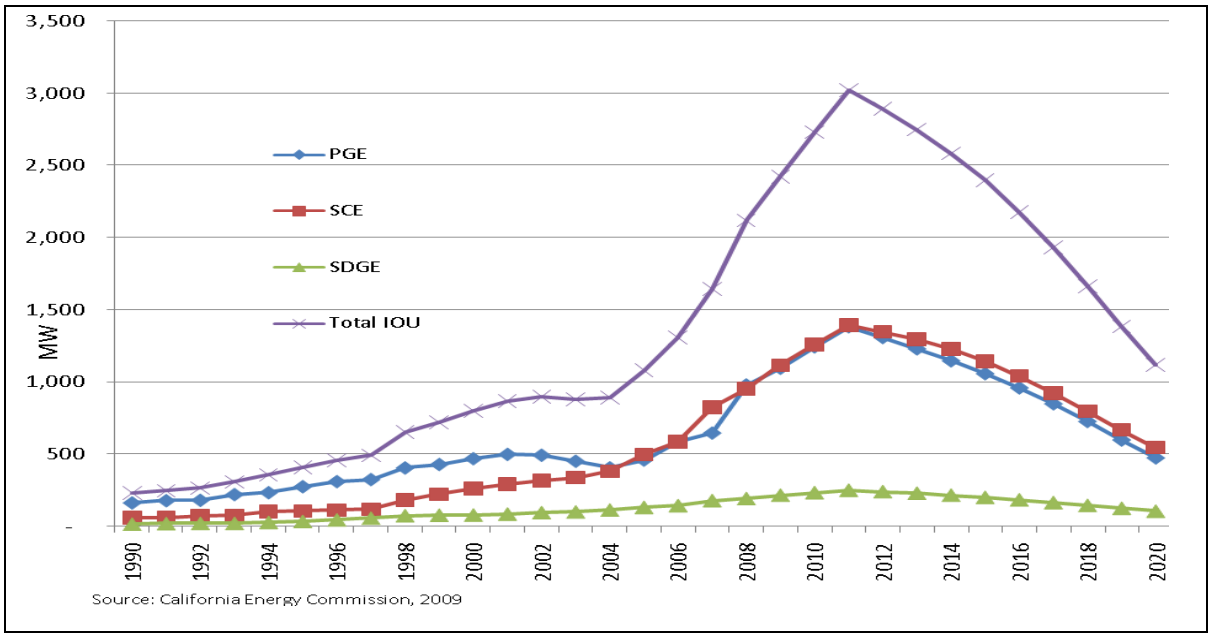


Table 8-2: Estimated IOU Program Impacts by Sector

	Consumption Impacts (GWh)				Peak Impacts (MW)			
	Resid.	Commer.	Agricult.	Total	Resid.	Commer.	Agricult.	Total
1990	849	110	0	959	207	23	0	230
1998	1,253	1,499	0	2,751	337	318	0	655
2003	1,755	2,178	0	3,933	439	442	0	881
2008	5,426	3,080	155	8,661	1,507	595	6	2,119
2011	7,816	3,881	400	12,096	2,234	742	46	3,022
2015	6,192	2,724	400	9,315	1,825	524	46	2,395
2020	2,397	1,785	396	4,578	728	344	45	1,118

Source: California Energy Commission, 2009

It is important to stress that these are preliminary estimates. Staff spent most of the time for this analysis gathering the data itself, and further examination of the numbers may change these results. In addition, the 2009-11 program plans are still under review by the CPUC, and, thus, may be modified to some degree.

Table 8-3 shows savings impacts from publicly owned utility and public agency programs included in the draft forecast. The estimates come from *CED 2007* since these savings have not yet been updated for the *CED 2009* forecast.

Table 8-3: Publicly Owned Utility and Public Agency Program Savings, CED 2009

	Consumption Impacts (GWh)			Peak Impacts (MW)		
	Publicly Owned Utility		Public	Publicly Owned Utility		Public
	Residential	Commercial	Agency*	Residential	Commercial	Agency*
1990	238	1	256	71	0	52
1998	336	55	124	110	13	27
2003	285	56	39	93	13	8
2008	277	56	3	96	12	1
2011	245	56	0	83	12	0
2015	179	56	0	60	12	0
2020	142	54	0	47	12	0

Source: California Energy Commission, 2009
*Includes the Federal Schools and Hospitals Programs

Methodology

To develop the IOU efficiency program impacts, staff, with the support of Itron, reviewed data associated with historic, current, and near-term energy efficiency programs as reported to the CPUC. To estimate verified cumulative program savings by end use for each year, staff and Itron took the following steps:

1. Collected reliable data for first-year efficiency program impacts in a disaggregated form such that gross GWh impacts could be attributed to categories that align with Energy Commission end use models. In the program years where only highly aggregate data was available (1998-2002), allocations were made for residential and commercial programs to specific end use categories using distributions from the 2003 data. Industrial and agricultural program savings were not disaggregated; models for these sectors do not operate at the end use level.

2. Applied net-to-gross (NTG) ratios to estimate net GWh impacts by end use category. This adjustment is intended to account for free ridership; that is, to account for measure adoptions that would have occurred without any utility program.

3. Applied realization rates to adjust for "real world" effects. Although staff assumes that the IOUs' estimates of their own portfolio performance are consistent with all relevant CPUC mandates, additional data sources such as evaluation, measurement, and verification (EM&V) reports suggest that the reported impacts are typically higher than the realized impacts. This occurs for various reasons, including measures purchased and not installed and lower actual savings per measure than anticipated. EM&V data yielded estimates of realized savings.

4. Estimated residual impacts for measures beyond the installation year. As is common practice, staff assumed a logistic decay of measure savings, so that 50 percent of installations remain in operation at the end of the estimated expected useful life (EUL). The logistic function models decay in such a way that installations are taken out of service at a rapid rate shortly before and after reaching the EUL.

Table 8-4 summarizes the data inputs and assumptions made in this process. The realization rate of 70 percent applied through 2008 derives from CPUC Energy Division recommendations for "ex-post" adjustment of program savings. [17] This rate is assumed to increase from 70 to 85 percent for the 2009-11 program cycle, consistent with CPUC expectations of more efficient delivery mechanisms. The Appendix provides more details on assumptions and includes first-year reported program impacts.

[17] CPUC Energy Division, *Energy Efficiency 2006-2007 Verification Report*, November, 2008. Energy Division staff recommended adjustment (realization) rates from 60 to 80 percent, depending on the utility.

Table 8-4: Data Sources and Assumptions for IOU Efficiency Program Impacts

Program Year	1998-2002	2003-2007	2008	2009-2011
Program Accomplishments	IOU Annual Reports	Monthly and Quarterly IOU Reports—Processed by Itron	IOU Quarterly Reports	March 2009 IOU Filings
Level of Disaggregation	Sector (residential, commercial, etc.)	End Use Category for Residential and Commercial	Measure	End Use Category for Residential and Commercial
Attribution to End Use	Applied 2003 Distribution for Residential and Commercial	Residential and Commercial—Provided by Itron	By Measure Description	IOU Projections
Net-to-Gross Ratios	Assumed 80 Percent	Provided by Itron	From IOU "Workbooks"	Assumed 80 Percent
Realization Rates	Assumed 70 Percent			Assumed 85 Percent
Expected Useful Life of Measures	Averages determined for each end use category based on 2006 – 2008 program workbook data			
Decay of Measures	Logistic decay of "realized" savings – 100 percent first year, 50 percent at the end of expected useful life			

Source: California Energy Commission, 2009

Following Steps 1-4 described above and using the assumptions given in **Table 8-3**, staff developed estimates of cumulative realized savings for each year: that is, savings adjusted by net-to-gross ratios and realization rates. **Table 8-5** shows these estimates by end use/sector and year.

Once cumulative realized program savings were developed for each year, staff determined whether these savings actually represented reductions in consumption or could be considered overlapping with savings impacts already incorporated in the model through building and appliance standards or some other source of savings. This step eliminated commercial (non-CFL) lighting, considered redundant with existing lighting standards, and industrial program savings, assumed to overlap with savings attributable to "natural" competitive market forces in this sector. [18]

[18] The effects of reduced energy intensity for industrial processes caused by market competition dwarf the impacts of industrial programs.

Table 8-5: Estimated IOU Accumulated Program Savings (GWh)

Sector	End Use	1998	2002	2006	2011	2015	2020
Residential	Heating, Ventilation, Air Conditioning*	11	65	119	296	259	143
	Compact Fluorescent Lighting	53	303	1,632	5,160	4,150	1,216
	Other Residential Lighting	10	56	245	713	694	577
	New Construction	9	49	63	64	62	39
	Pool Pumps	7	42	63	47	20	2
	Refrigerator Recycling	62	358	492	767	548	216
	Other Refrigerator	0	0	6	101	90	18
	Water Heating	2	13	25	57	49	29
	Misc. /Non-descriptive	0	0	6	356	133	5
	Accumulated from Pre-1998**	396	275	39	1	0	0
	Total Residential	550	1,162	2,691	7,564	6,004	2,248
Commercial	Heating, Ventilation, Air Conditioning*	33	143	300	1,363	1,291	1,093
	Compact Fluorescent Lighting	138	352	332	853	110	3
	Other Commercial Lighting	121	521	1,052	2,546	2,140	1,146
	New Construction	162	694	860	884	858	516
	Refrigeration	26	97	175	402	137	6
	Water Heating	0	0	1	1	1	0
	Misc. /Non-descriptive	84	287	195	375	326	166
	Accumulated from Pre-1998**	1,056	734	103	3	0	0
	Total Commercial	1,620	2,828	3,017	6,427	4,863	2,931
Industrial	--	0	0	86	1,398	1,396	1,328
Agricultural	--	0	0	7	400	400	396
Grand Total	--	2,170	3,991	5,801	15,788	12,663	6,903

Source: California Energy Commission, 2009

* Includes building shell measures

** Represents continuing savings from 1997 and previous years from measures not yet decayed.

For those program impacts determined to correspond to load reductions, staff incorporated these effects in the draft forecast either through "post-processing" (subtracting estimated impacts from model output) or by integrating estimated savings directly into the model through changes in inputs. **Table 8-6** summarizes the treatment by end use/sector. **Figure 8-5** shows the effects of these treatments, starting with the total realized program savings given in **Table 8-5**.

Table 8-6: Treatment of IOU Program Savings by End Use/Sector

Sector	End Use	Treatment
Residential	Heating, Ventilation, Air Conditioning*	Subtracted from model output
	Compact Fluorescent Lighting	Incorporated in model
	Other Residential Lighting	Subtracted from model output
	New Construction	Subtracted from model output
	Pool Pumps	Incorporated in model
	Refrigerator Recycling	Incorporated in model
	Other Refrigerator	Subtracted from model output
	Water Heating	Subtracted from model output
	Misc. /Non-descriptive	Subtracted from model output
	Accumulated from Pre-1998**	Subtracted from model output
Commercial	Heating, Ventilation, Air Conditioning*	Subtracted from model output
	Compact Fluorescent Lighting	Subtracted from model output
	Other Commercial Lighting	Excluded
	New Construction	Subtracted from model output
	Refrigeration	Subtracted from model output
	Water Heating	Subtracted from model output
	Misc. /Non-descriptive	Subtracted from model output
	Accumulated from Pre-1998**	Subtracted from model output
Industrial	--	Excluded
Agricultural	--	Subtracted from model output

Source: California Energy Commission, 2009

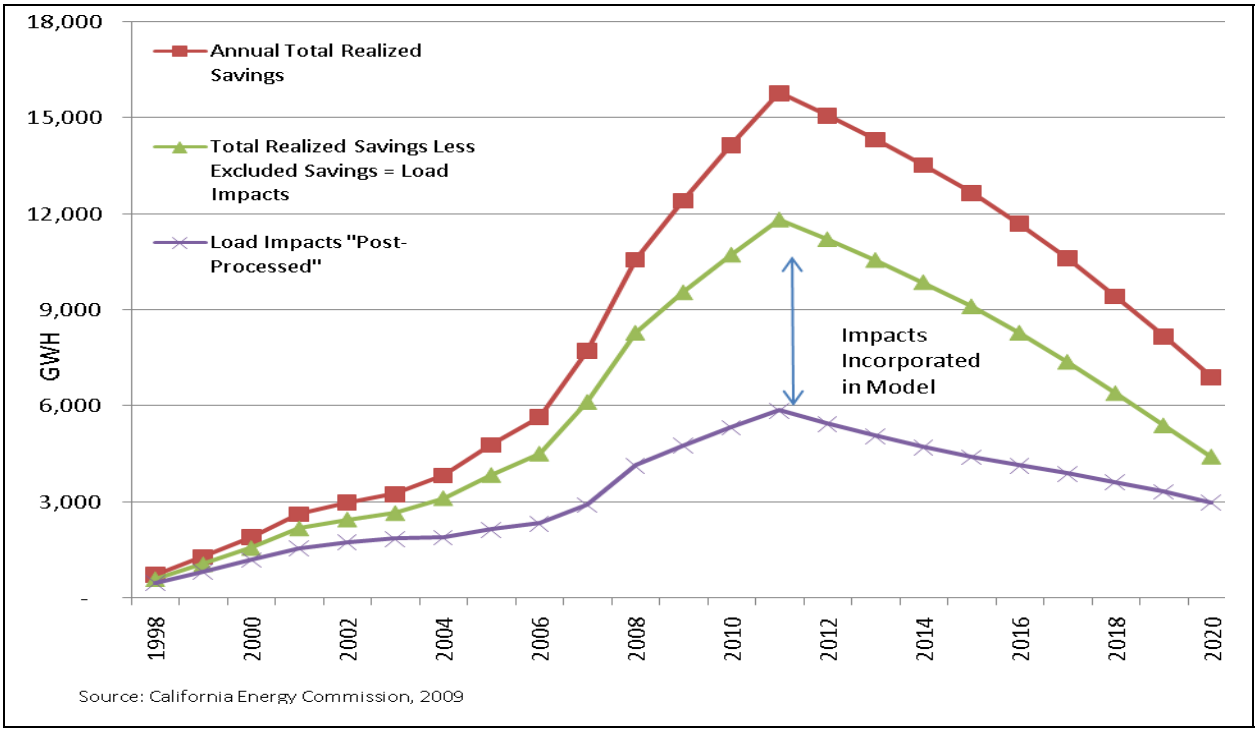
* Includes building shell measures.

** Represents continuing savings from 1997 and previous years from measures not yet decayed.

For years prior to 1998, staff used the same Energy Commission estimates for IOU program impacts as in the previous forecast. For 1998 on, staff added the estimates represented by the curve labeled "Total Realized Savings Less Excluded Savings" in **Figure 8-5** to pre-1998 impacts not yet decayed to give the totals for the *CED 2009* shown in **Figure 8-2**.

For the revised forecast, staff will examine and possibly incorporate pre-1998 estimates recently compiled by Itron. Publicly owned utility impacts, not yet updated by staff, are assumed to be the same as in *CED 2007*, as are public agency programs. Low income efficiency programs are not yet included in the analysis, but will be incorporated in the revised forecast.

Figure 8-5: Estimated Historical and Projected IOU Program Savings and Consumption Impacts (GWh)



Building and Appliance Standards

Energy Commission forecasting models incorporate building and appliance standards through changes in inputs: estimated end use consumption per household in the residential sector and end use consumption per square foot in the commercial sector. **Table 8-7** shows the standards currently included in the energy demand forecast by sector.

To measure the impact of each individual set of standards, staff removed the input effect on from standards one set at a time, beginning with the most recent standards, and calculated savings as the difference in energy demand output between model runs with the set of standards incorporated and without. For example, for the commercial sector, staff began by running the Commercial Model with all sets of standards included and then ran the model excluding changes in inputs associated with the *2005 Title 24 Nonresidential Building Standards* (the most recent standards). The difference in output between the two model runs gives an estimate of the electricity savings associated with the 2005 standards. Next, staff removed the input changes associated with the next-most recent set of standards, the *2004 Title 20 Equipment Standards*, and compared the results from model runs without the 2005 standards and without both the 2005 and 2004 standards, which provided an estimate of the impact of the 2004

standards. The process was repeated until all sets of standards had been "removed" from the model.

Table 8-7: Building and Appliance Standards Incorporated in the *CED 2009* Forecast

Residential Model	
1975 HCD Building Standards 1978 Title 24 Residential Building Standards 1983 Title 24 Residential Building Standards 1991 Title 24 Residential Building Standards 2005 Title 24 Residential Building Standards	1976-82 Title 20 Appliance Standards 1988 Federal Appliance Standards 1990 Federal Appliance Standards 1992 Federal Appliance Standards 2002 Refrigerator Standards
Commercial Model	
1978 Title 24 Nonresidential Building Standards 1978 Title 20 Equipment Standards 1984 Title 24 Nonresidential Building Standards 1984 Title 20 Nonres. Equipment Standards 1985-88 Title 24 Nonresidential Building Standards	1992 Title 24 Nonresidential Building Standards 1998 Title 24 Nonresidential Building Standards 2001 Title 24 Nonresidential Building Standards 2004 Title 20 Equipment Standards 2005 Title 24 Nonresidential Building Standards

Source: California Energy Commission, 2009

Naturally Occurring Savings

Staff estimates of naturally occurring savings are meant to capture load impacts of rate changes, certain market trends, and other changes in consumption not directly associated with standards or efficiency programs. For the draft forecast, staff included impacts from historical and projected rate changes, referred to as price effects, and expected reductions in average lighting use. There are certainly other consumption trends leading to reduced energy that could be included in this category,[19] but staff focused on those savings that potentially overlap with programs and standards. Rate increases provide a greater incentive to participate in utility programs and help improve standards compliance rates. Therefore, at least some price impacts could be attributed to programs and standards; for example, a rate increase could yield savings beyond what would otherwise occur because of the availability of program measures. [20] Utility programs have emphasize lighting measures, so naturally occurring savings from lighting assumed in this forecast could overlap with program impacts.

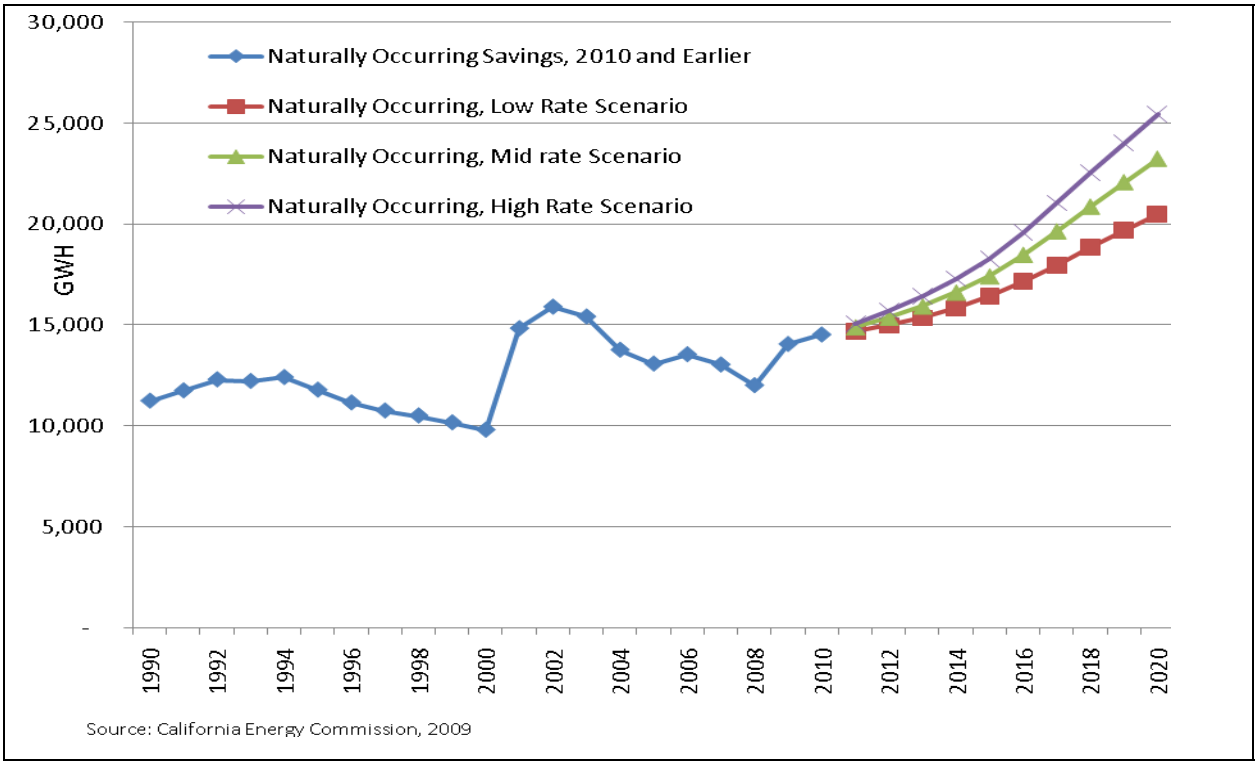
[19] Although not included in naturally occurring savings, other trends are accounted for in the forecast. For example, personal computers have become more efficient in recent years for technological/competitive reasons, and savings associated with this trend are captured through model inputs and calibration to actual consumption.

[20] A utility customer, faced with a rate increase, could reduce electricity usage by switching to incandescent light bulbs with a lower wattage. However, if the utility is offering incentives for CFL bulbs, the incentive might be enough that the customer instead begins to use CFLs and saves even more energy.

Price Effects

For the draft forecast, staff included three scenarios for electricity rates: low (constant), mid, and high, as described in Chapter 1. Therefore, total naturally occurring savings beyond 2010 depend on the rate scenario. **Figure 8-6** shows the amount of this savings under each scenario for the five major California utilities.

Figure 8-6: Historic and Projected Naturally Occurring Savings by Rate Scenario



Total consumption savings from all sources given in **Table 8-1** would change by the same amounts as shown in **Figure 8-6** under the differing rate scenarios. **Table 8-8** shows total savings for the five major California utilities by rate scenario starting in 2011. Table A-7 in the Appendix shows detailed results for the five major utilities.

Table 8-8: Total Savings from Programs, Standards, and Naturally Occurring Impacts for the Five Major California Utilities by Rate Scenario

Year	Consumption Savings (GWh)		
	Low-Rate Case	Mid-Rate Case	High-Rate Case
2011	55,044	55,226	55,402
2015	57,980	58,932	59,795
2020	62,290	65,030	67,326
	Peak Savings (MW)		
	Low-Rate Case	Mid-Rate Case	High-Rate Case
2011	13,183	13,220	13,255
2015	14,110	14,302	14,477
2020	15,375	15,929	16,380

Source: California Energy Commission, 2009

Lighting Savings

For this forecast, residential lighting was broken out as a separate end use for the first time to better capture the impacts of residential lighting efficiency programs. The Appendix provides details on this process and on estimated average lighting use per household. The focus of utility programs and state and federal legislation related to lighting led staff to assume some additional residential[21] savings for this end use, incorporated in the Residential Model.

No direct IOU lighting programs impacts were assumed beyond 2011, the end of the current three-year program cycle. However, staff assumed average lighting per household would remain at 2011 levels without utility incentives through the rest of the forecast period in the IOU planning areas. The difference between the 2011 average and an increasing average that would have occurred as utility impacts decayed was assigned to naturally occurring savings. In the publicly owned utility planning areas, staff assumed a gradual reduction in lighting per household beginning in 2008, so that by 2020 average use fell to 75 percent of estimated 2007 levels. Admittedly these are somewhat crude estimates, but staff felt that it was unrealistic to assume no continued lighting savings beyond utility programs. These numbers are meant to provide a starting point for discussion and further refinement. **Figure 8-7** shows the savings associated with these assumptions for both the IOUs and the publicly owned utilities.

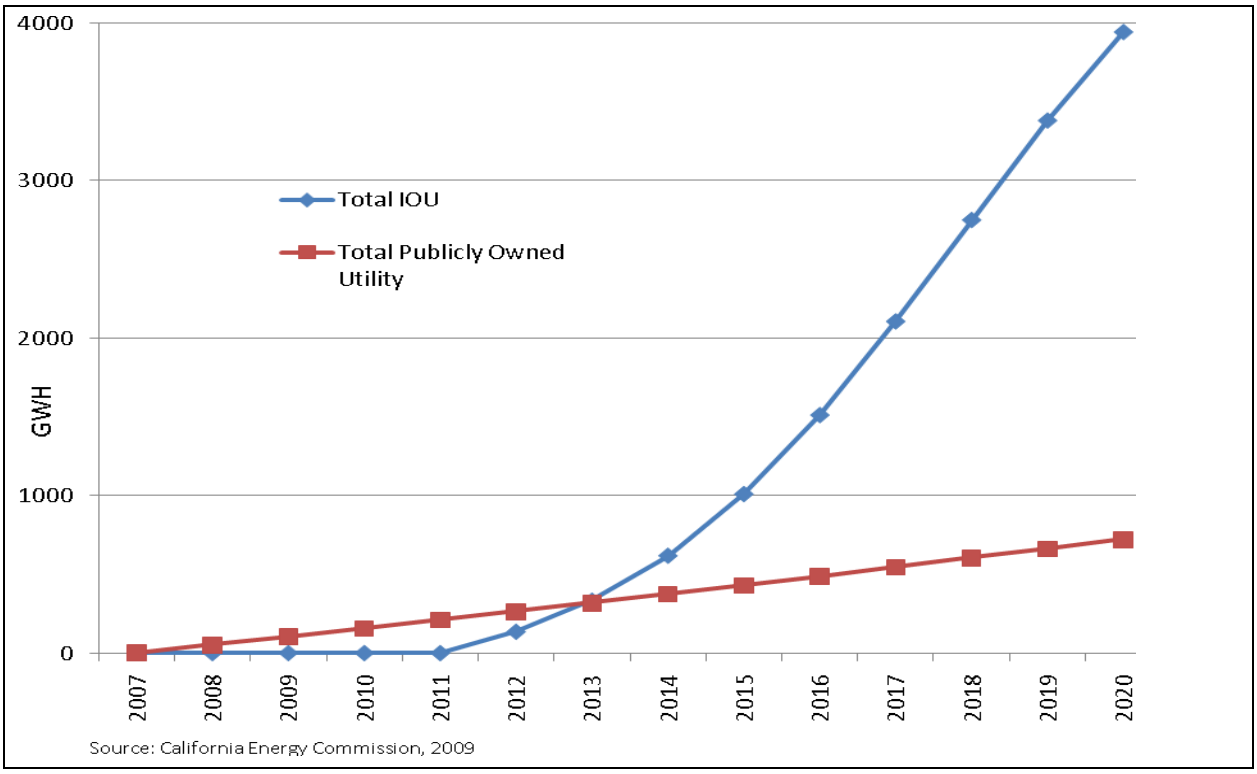
Next Steps

Staff plans to continue to improve estimates of energy savings due to utility and public agency programs, standards, and naturally occurring effects for the revised forecast and beyond. Future work includes the following:

[21] Staff assumed that savings in the commercial sector would be covered by lighting standards incorporated in the Commercial Model.

- Refining IOU efficiency program impact estimates
- Updating efficiency program impact estimates for the publicly owned utilities
- Updating model inputs and incorporating further efficiency programs directly within the forecasting models
- Identifying and estimating overlap among programs, standards, and naturally occurring savings
- Incorporating low income energy efficiency programs.

Figure 8-7: Naturally Occurring Residential Lighting Savings by Utility Type



APPENDIX: California Energy Demand 2010-2020 Staff Draft Forecast Supporting Documents

This Appendix provides additional details on work related to the *California Energy Demand 2009 Staff Draft Forecast* (*CED 2009*). The following sections include information on floor space, residential lighting, self-generation, utility efficiency program impacts, and ongoing evaluation of staff modeling methodologies and alternative forecasting approaches.

Floor Space Forecast

Energy use in the commercial sector is modeled in terms of energy use per square foot for each of twelve different building types. A forecast of floor space in each county serves as the economic driver of demand trends. The historic floor space stock estimates are based on analysis of the McGraw Hill database of permits for new buildings and floor space additions from 1970 through 2007. Staff creates a historic time series of floor space stock by allowing additions to decay as they age, in concert with the logistic survival formula:

$$Survival\left(\text{age } t\right) = \frac{e^{v}}{1+e^{v}} \quad \text{where} \quad v = 6.912\left(1 - \frac{t}{\text{median life}}\right).$$

Logistic survival posits that few buildings are torn down in their early years and that tear-downs accelerate as buildings approach their average lifetime, then slow down again as fewer old buildings remain.

For the *CED 2009*, staff revised the econometric method for forecasting growth in floor space used in *California Energy Demand 2009 Staff Revised Forecast*. The new method forecasts additions rather than total floor space, using projected additions to create a forecast for total stock.

The logic behind this approach begins with the assumption that floor space stock can be defined as a function of economic and demographic variables:

$$Stock_{i,t} = \alpha + EconDemo_i * \beta + \varepsilon_{i,t},$$

where i indicates a commercial building type and t the time period. $EconDemo_i$ refers to one or more economic/demographic variables and can be specified as current and/or past values, since there may be a delay between changes in these variables and a response in terms of construction. The error term ε is the part of stock's variation that cannot be explained by *EconDemo* variables, and is assumed to be random.

Since actual stock counts are not available, this equation needs to be changed to one specified in terms of additions. Converting the equation into changes in the variables from one time period to the next, we have:

$$\Delta\, Stock_{i,t} = \Delta\, EconDemo_i * \beta + u_{i,t},$$

where $u_{i,t}$ equals $\varepsilon_{i,t} - \varepsilon_{i,t-1}$. The change in stock comes from additions and the amount of existing floor space that disappears in year t, or *Decay*, so that:

$$Additions_{i,t} - Decay_{i,t} = \Delta\ EconDemo_i * \beta + u_{i,t}, \text{ or:}$$

$$Additions_{i,t} = Decay_{i,t} + \Delta\ EconDemo_i * \beta + u_{i,t}.$$

Staff has data for every variable except *Decay*. Assuming that *Decay* is proportional to the amount of stock existing in year t:

$$Decay_{i,t} = Stock_{i,t} * \gamma,$$

and using the equation for stock above, we have:

$$Additions_{i,t} = (\alpha + EconDemo_i * \beta) * \gamma + \Delta\ EconDemo_i * \beta + u_{i,t} + \varepsilon_{i,t}.$$

In other words, additions are specified as a function of both levels and changes in current and past economic/demographic variables plus a random error. Staff tested a variety of these variables for each building type to find the best fit, using county level data. **Table A-1** shows the economic/demographic variables that were used for each building type.

Table A-1: Economic/Demographic Variables Used for Each Building Type

Building Type	*Variables in Final Regression*
Small and Large Office	Non-farm jobs; personal income; employment in high tech; employment in finance
Restaurant	Population; employment in leisure activities
Retail and Grocery Stores	Non-farm jobs; personal income
Warehouse	Non-farm jobs, population
Refrigerated Warehouse	Employment in food manufacturing; population
School	Population aged 5-17
College	Population aged 18-24; population
Hospital	Employment in health/education; population
Hotel	Employment in leisure activities; personal income; population
Miscellaneous	Personal income; population

Source: California Energy Commission, 2009

Using the regression results, additions for each building type and county were forecast using economic and demographic projections from Economy.com and the California Department of Finance and then aggregated to the climate zone level. Projected floor space stock was calculated by adding these additions beginning in the first forecast year to the previous year's estimated stock and subtracting building decay.

Vacancy rates for both historical and forecast years were estimated using data on office building vacancies by county for 1984-2005. Vacancy rates were specified as a function of the rate of net building additions and growth in employment in office related jobs (government, information, and finance). Regression yielded the following:

Vacancy rate(t) = 14.66 + 42.27 × *additions rate*(t) - 34.73 × *employment growth*(t),

with both explanatory variables statistically significant at a 95 percent confidence level. This estimated relationship was used to project vacancy rates for all building types, with employment growth in office-related employment replaced by a growth indicator relevant to the particular building type. For example, growth in projected retail employment was used in the case of retail buildings, and growth in school age population was used for schools.

Residential Lighting

To estimate residential lighting use separately within the Residential Model, staff developed estimates of statewide average lighting energy consumption per household by household type (single and multi-family homes) for 1980 through 2004. Data for this purpose came from the consulting firm Itron and various *California Lighting and Appliance Saturation Studies*. Staff then created a new end use for the model, breaking out lighting from the "miscellaneous" category of end uses, so that total lighting use plus revised miscellaneous use equaled original miscellaneous consumption for the historical period.

For the investor-owned utility (IOU) planning areas, staff used reported lighting program savings for 2005-2008 and program plans for 2009-2011, adjusted as described in Chapter 8, to estimate reductions to average lighting values for 2005-2011. No direct IOU lighting programs impacts were assumed beyond 2011, the end of the current three-year program cycle. However, staff assumed average lighting per household would remain at 2011 levels without utility incentives through the rest of the forecast period in the IOU planning areas. The difference between the 2011 average and an increasing average that would have occurred as utility program impacts decayed was assigned to naturally occurring savings. **Table A-2** shows the historical estimates for average lighting use per household by type for selected years and gives projected values by IOU planning areas based on lighting program impacts.

In the publicly owned utility planning areas, staff applied the same statewide historical estimates, and assumed 2004 averages through 2007. For 2008 and beyond, staff assumed a gradual reduction in average lighting use, so that by 2020 average use fell to 75 percent of 2007 levels. Savings relative to 2007 average use were assigned to naturally occurring savings.

Given the focus of utility programs and state and federal legislation related to lighting, staff felt that it was unrealistic to assume no lighting savings beyond 2007 for the publicly owned utilities and 2011 for the IOUs. These estimates of continued savings are meant to provide a starting point for discussion and further refinement.

Table A-2: Estimated Historic and Projected Lighting Use per Household for the Investor-Owned Utilities (kWh per Year)

Planning Area	Housing Type	1980	1990	1995	2000	2004	2008	2011 and Beyond
PGE	Single Family	1,093	1,597	1,719	1,764	1,800	1,527	1,323
	Multi-Family	607	887	955	980	1,000	849	735
SCE	Single Family	1,093	1,597	1,719	1,764	1,800	1,527	1,213
	Multi-Family	607	887	955	980	1,000	849	674
SDGE	Single Family	1,093	1,597	1,719	1,764	1,800	1,527	1,492
	Multi-Family	607	887	955	980	1,000	849	829

Source: California Energy Commission, 2009

Self-Generation

Staff has developed a methodology to predict adoption of residential Photovoltaic (PV) systems, based on the self-generation model used by the Energy Information Agency (EIA).[22] The new model includes two distinct steps. The first step examines the private financial benefit from investing in a PV system. This essentially casts the decision to purchase a system as an investment decision to be made by a prospective homeowner. Under this framework, the homeowner will evaluate the direct financial benefits relative to the cost of investing in a PV system. If the total private financial benefit exceeds the cost, it is assumed that the homeowner will invest in the system. The metric used to capture the overall financial attractiveness of investing in a PV system is the payback period, which measures how long it would take a household to recoup their initial investment in a project given projected returns, a function of the present value of expected annual electricity cost savings.

The extent of investment in PV systems made by households is handled in the second step of the model, which uses a logistic or "s shaped" penetration function to estimate the share of households that would invest in a system in any given year, based on payback. Systems with relatively fast payback will achieve greater penetration than systems with longer payback. As in the EIA model, projects with a payback period of one year are limited to capturing 30 percent

[22] The description of the EIA self-generation model begins on page 124 of *Model Documentation Report: Residential Sector Demand Module of the National Energy Modeling System*, DOE/EIA-MO67, April 2007, Office of Integrated Analysis and Forecasting, Energy Information Administration. http://tonto.eia.doe.gov/FTPROOT/modeldoc/m067(2007).pdf.

of the market for new single family residential construction while projects with less than a one-year payback are limited to capturing 50 percent of the market.

Once the penetration rate is determined, it is multiplied by the projected amount of new single family residential units to arrive at an estimate of the projected number of new homes that purchase a PV system. Multiplying the number of homes adopting a system by system size provides an estimate of the incremental PV capacity installed.

The methodology is applied separately for the existing stock of single family homes. Given the size of the existing housing stock relative to new construction, the penetration of PV systems in the existing housing stock is limited to a maximum of 15 percent under a one year payback scenario and 25 percent under a scenario with less than a one year payback. For each projected year, the existing stock in each year is adjusted to account for PV penetration occurring in prior years.

Utility Efficiency Program Impacts

Staff, along with Itron, began the process of measuring the savings impacts from utility efficiency programs described in Chapter 8 by collecting first-year reported and projected savings data from the IOUs for 1998-2011 and distributing the savings into end uses. Where specific end use attribution was unavailable in the data (1998-2002), staff assigned savings to each end use based on the 2003 distributions. **Tables A-3** through **A-5** give the results of this initial process for selected years, showing "ex-ante" first year net savings[23] for each IOU by end use and sector. The tables clearly show the predominance of lighting measures in each utility; for example, reported first-year lighting savings make up over 70 percent of the total for each utility in 2007.

[23] Savings estimates have been adjusted from gross totals using net-to-gross ratios (adjusting for free-ridership), but not adjusted by realization rates.

Table A-3: Reported and Projected First-Year Program Savings (GWh) for PG&E by End Use and Sector

Sector	End Use	1998	2001	2005	2006	2007	2008	2009-2011*
Residential	Heating, Ventilation, Air Conditioning**	4	17	12	3	24	14	13
	Compact Fluorescent Lighting	21	80	165	264	476	878	360
	Other Residential Lighting	4	15	20	22	77	68	40
	New Construction	3	13	0	0	1	0	0
	Pool Pumps	3	11	2	1	3	3	0
	Refrigerator Recycling	24	95	7	17	32	0	82
	Other Refrigerator	0	0	0	0	0	32	0
	Water Heating	1	3	3	5	17	28	0
	Misc./Non-descriptive	0	0	0	0	0	1	139
	Total Residential	60	234	209	312	630	1,024	633
Commercial	Heating, Ventilation, Air Conditioning**	21	22	13	26	51	121	95
	Compact Fluorescent Lighting	109	111	26	228	385	683	255
	Other Commercial Lighting	78	80	66	45	124	255	51
	New Construction	104	106	3	1	5	0	0
	Refrigeration	17	17	15	23	68	162	46
	Water Heating	0	0	0	1	0	1	0
	Misc./Non-descriptive	57	58	8	10	29	188	0
	Total Commercial	388	394	131	334	662	1,410	447
Industrial	--	0	0	1	3	17	105	24
Agricultural	--	0	0	3	13	4	220	168
Grand Total	--	448	628	344	662	1,313	2,759	1,272

Source: California Energy Commission, 2009

* Utility projected first year savings are the same in each year 2009-2011.

** Includes building shell measures.

Table A-4: Reported and Projected First-Year Program Savings (GWh) for SCE by End Use and Sector

Sector	End Use	1998	2001	2005	2006	2007	2008	2009-2011*
Residential	Heating, Ventilation, Air Conditioning**	7	10	13	8	29	66	21
	Compact Fluorescent Lighting	33	48	297	334	787	487	302
	Other Residential Lighting	6	9	33	52	124	34	43
	New Construction	5	8	0	0	0	0	0
	Pool Pumps	5	7	6	1	2	4	0
	Refrigerator Recycling	39	57	34	48	79	0	63
	Other Refrigerator	0	0	2	2	3	89	0
	Water Heating	1	2	0	0	0	0	0
	Misc./Non-descriptive	0	0	3	0	0	0	17
	Total Residential	96	141	388	445	1024	680	446
Commercial	Heating, Ventilation, Air Conditioning**	23	17	15	15	50	80	205
	Compact Fluorescent Lighting	118	88	51	36	40	296	67
	Other Commercial Lighting	85	63	68	95	181	188	289
	New Construction	113	84	6	16	10	0	0
	Refrigeration	18	14	15	27	7	32	25
	Water Heating	0	0	0	0	0	0	0
	Misc./Non-descriptive	62	46	3	43	60	62	4
	Total Commercial	419	313	158	232	348	658	590
Industrial	--	0	0	0	0	48	40	72
Agricultural	--	0	0	14	0	195	223	160
Grand Total	--	515	454	560	677	1615	1601	1268

Source: California Energy Commission, 2009

* Utility projected first year savings are the same in each year 2009-2011.

** Includes building shell measures.

Table A-5: Reported and Projected First-Year Program Savings (GWh) for SDG&E by End Use and Sector

Sector	End Use	1998	2001	2005	2006	2007	2008	2009-2011*
Residential	Heating, Ventilation, Air Conditioning**	5	4	3	0	5	3	2
	Compact Fluorescent Lighting	22	20	101	38	151	67	46
	Other Residential Lighting	4	4	9	7	25	17	7
	New Construction	4	3	3	0	0	0	0
	Pool Pumps	3	3	1	3	2	1	0
	Refrigerator Recycling	26	23	7	5	11	0	16
	Other Refrigerator	0	0	2	0	1	8	1
	Water Heating	1	1	1	0	0	2	0
	Misc./Non-descriptive	0	0	0	0	0	0	0
	Total Residential	64	57	127	53	195	98	73
Commercial	Heating, Ventilation, Air Conditioning**	3	5	15	5	18	15	30
	Compact Fluorescent Lighting	14	26	8	3	6	0	3
	Other Commercial Lighting	10	19	33	45	105	134	51
	New Construction	14	25	30	6	4	0	5
	Refrigeration	2	4	6	9	12	21	7
	Water Heating	0	0	0	0	0	0	0
	Misc./Non-descriptive	7	14	12	0	28	34	20
	Total Commercial	50	92	104	68	173	204	116
Industrial	--	0	0	0	0	1	0	0
Agricultural	--	0	0	0	0	38	0	0
Grand Total	--	114	149	231	121	407	302	189

Source: California Energy Commission, 2009

* Utility projected first year savings are the same in each year 2009-2011.

** Includes building shell measures.

Table A-6 shows the expected useful lives (EULs) of adopted efficiency measures estimated for each end use/sector, applied to decay measure savings over time. These were calculated by averaging reported EULs over all measures within an end use for residential and commercial programs, and over the entire sector in the case of the agricultural and industrial programs.

The EULs were applied in a logistic decay function to develop accumulated program savings in each year. The function was specified as follows:

Decay Rate = 1 - 1 / (1 + exp(-.75 * (Years after implementation - EUL))).

This function yields an "s shaped" curve with the following characteristics: little initial decay over time, accelerated decay in the years immediately before and after the EUL, and little decay throughout the rest of the forecast period.

Table A-6: Estimated Expected Useful Life by End Use/Sector

End Use	Average Expected Useful Life (Years)	End Use	Average Expected Useful Life (Years)
Residential Sector			
Heating, Ventilation, Air Conditioning	12	Refrigerator Recycling	10
Building Shell	18	Other Refrigerator	10
Compact Fluorescent	10	Water Heating	14
Other Residential	16	Miscellaneous	4
New Construction	20	Non-descriptive	4
Pool Pumps	10		
Commercial Sector			
Heating, Ventilation, Air Conditioning	15	Refrigeration	5
Building Shell	13	Water Heating	12
Compact Fluorescent	2	Misc	12
Other Commercial	12	Non-descriptive	4
New Construction	20		
Agricultural	18	Industrial	16

Source: California Energy Commission, 2009

Electricity Consumption Savings from All Sources

Table A-7 shows total savings for the five major California utilities and is available on-line at http://www.energy.ca.gov/2009_energypolicy/documents/index.html#062609.

Evaluation of Staff Methodology

As discussed in Chapter 8, various parties expressed confusion during the *2007 IEPR* process about energy efficiency impacts incorporated within the Energy Commission Demand Forecast. Prompted by these concerns, the *2007 IEPR* committed the Energy Commission in 2008 and beyond to examining the methods used to incorporate efficiency in the Commission's demand forecast. In addition, the Commission launched an effort to evaluate the forecasting models themselves to identify potential areas for improvement in the forecasting process. Aspen Environmental Group and R.W. Beck, consultants in this effort, have completed a preliminary assessment of the staff demand forecasting methodology. Key findings include:

- The Energy Commission end-use approach is useful, has many advantages, and is a valuable counter-weight to the econometric models used by the utilities. However, the approach is data-intensive, and requires major staff effort to maintain and update the individual models. Currently, updated data is lacking in some areas and staff resources may not be adequate to take full advantage of the end-use approach.
- If the end-use approach is continued, the Energy Commission should consider adding more flexible, short-term econometric models to address policy questions.
- The current methodology requires an updated and more comprehensive price response capability.
- The current methodology requires a more transparent backcasting/calibration procedure.
- The current methodology requires an uncertainty analysis capability.
- Staff's forecast is undermined by inconsistency in energy demand reporting and data sources through time, which may be driven in part by a changing regulatory regime historically, and a lack of consistency through time with respect to data management and submission protocols on the part of individual utilities to the Energy Commission.

The consultants also suggested that the Energy Commission evaluate whether continuing to meet all of the individual tailored needs for the demand forecast is feasible given current methodologies, data requirements, reporting requirements, and resource limitations. This suggestion prompted staff to begin a second evaluation phase that involves an assessment of the applications of the demand forecast, a judgment whether all of these applications are feasible given stakeholder needs and staff resource constraints, and consideration of alternative

or additional methodologies for those applications considered feasible. "Phase II" of the evaluation effort will begin in the summer of 2009.

Draft Demand Forecast Forms Completed by Energy Commission Staff

The list of draft demand forecast forms completed by Energy Commission staff in support of the *2009 Integrated Energy Policy Report* is below. The staff's completed forms are available on-line at http://www.energy.ca.gov/2009_energypolicy/documents/index.html#062609.

Statewide Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Noncoincident Peak Demand
1.5a Net Energy for Load by Agency and Balancing Authority
1.5b 1-in-2 Electric Peak Demand by Agency and Balancing Authority
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions

Pacific Gas and Electric Planning Area Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Peak Demand
1.5 Extreme Energy Peak Demand
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions and Electricity Prices
2.3 Electricity Prices

Southern California Edison Planning Area Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Peak Demand

1.5 Extreme Energy Peak Demand
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions and Electricity Prices
2.3 Electricity Prices

San Diego Gas and Electric Planning Area Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Peak Demand
1.5 Extreme Energy Peak Demand
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions and Electricity Prices
2.3 Electricity Prices

Sacramento Municipal Utility District Planning Area Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Peak Demand
1.5 Extreme Energy Peak Demand
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions and Electricity Prices
2.3 Electricity Prices

Los Angeles Water and Power Department Planning Area Forms

1.1 Electricity Consumption by Sector
1.1b Electricity Sales by Sector
1.2 Net Energy for Load
1.3 Coincident Peak Demand by Sector
1.4 Peak Demand
1.5 Extreme Energy Peak Demand
1.7 Private Supply by Sector
2.2 Economic and Demographic Assumptions and Electricity Prices
2.3 Electricity Prices

Natural Gas Planning Areas Forms

1.1 Natural Gas Consumption
2.3 Natural Gas Prices

Form 1.1 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,019	3,511	735	146	145	436	79	9,070
2002	4,087	3,692	778	145	162	441	79	9,383
2003	4,361	3,921	780	125	181	476	80	9,924
2004	4,426	4,070	773	129	190	482	80	10,150
2005	4,554	4,311	781	128	177	490	81	10,523
2006	4,747	4,336	860	129	184	493	80	10,829
2007	4,634	4,404	921	136	207	530	85	10,917
2008	4,688	4,423	882	128	190	539	86	10,936
2009	4,694	4,456	876	128	196	542	87	10,979
2010	4,735	4,516	900	129	202	544	87	11,114
2011	4,797	4,563	921	128	208	555	88	11,259
2012	4,861	4,606	950	127	214	567	89	11,414
2013	4,924	4,651	964	126	221	578	90	11,554
2014	4,984	4,700	972	126	227	589	91	11,689
2015	5,036	4,751	980	126	234	597	92	11,816
2016	5,085	4,802	988	126	240	604	93	11,938
2017	5,132	4,851	994	126	247	609	94	12,054
2018	5,178	4,902	998	126	254	614	95	12,167
2019	5,226	4,951	1,001	126	261	617	96	12,278
2020	5,280	5,000	1,003	126	268	621	97	12,395

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.64%	2.94%	1.29%	-2.88%	4.99%	0.19%	0.66%	2.02%
2007-2010	0.72%	0.85%	-0.74%	-1.97%	-0.89%	0.90%	1.06%	0.60%
2010-2020	1.10%	1.02%	1.09%	-0.19%	2.89%	1.32%	1.06%	1.10%

Form 1.1 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,019	3,511	735	146	145	436	79	9,070
2002	4,087	3,692	778	145	162	441	79	9,383
2003	4,361	3,921	780	125	181	476	80	9,924
2004	4,426	4,070	773	129	190	482	80	10,150
2005	4,554	4,311	781	128	177	490	81	10,523
2006	4,747	4,336	860	129	184	493	80	10,829
2007	4,634	4,404	921	136	207	530	85	10,917
2008	4,688	4,423	882	128	190	539	86	10,936
2009	4,694	4,456	876	128	196	542	87	10,979
2010	4,735	4,516	900	129	202	544	87	11,114
2011	4,796	4,555	921	128	208	555	88	11,251
2012	4,861	4,590	950	127	214	567	89	11,397
2013	4,923	4,627	964	126	221	578	90	11,528
2014	4,982	4,667	972	126	227	589	91	11,654
2015	5,034	4,708	980	126	234	597	92	11,771
2016	5,082	4,743	987	126	240	604	93	11,876
2017	5,129	4,776	992	126	247	609	94	11,974
2018	5,173	4,810	996	126	254	614	95	12,068
2019	5,220	4,843	997	126	261	617	96	12,160
2020	5,273	4,875	998	126	268	621	97	12,258

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.64%	2.94%	1.29%	-2.88%	4.99%	0.19%	0.66%	2.02%
2007-2010	0.72%	0.85%	-0.74%	-1.97%	-0.89%	0.90%	1.06%	0.60%
2010-2020	1.08%	0.77%	1.03%	-0.20%	2.89%	1.32%	1.06%	0.99%

Form 1.1 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,019	3,511	735	146	145	436	79	9,070
2002	4,087	3,692	778	145	162	441	79	9,383
2003	4,361	3,921	780	125	181	476	80	9,924
2004	4,426	4,070	773	129	190	482	80	10,150
2005	4,554	4,311	781	128	177	490	81	10,523
2006	4,747	4,336	860	129	184	493	80	10,829
2007	4,634	4,404	921	136	207	530	85	10,917
2008	4,688	4,423	882	128	190	539	86	10,936
2009	4,694	4,456	876	128	196	542	87	10,979
2010	4,735	4,516	900	129	202	544	87	11,114
2011	4,796	4,547	921	128	208	555	88	11,243
2012	4,860	4,574	950	127	214	567	89	11,381
2013	4,922	4,603	964	126	221	578	90	11,504
2014	4,981	4,636	972	126	227	589	91	11,621
2015	5,032	4,668	979	126	234	597	92	11,729
2016	5,080	4,691	986	126	240	604	93	11,821
2017	5,125	4,714	991	126	247	609	94	11,906
2018	5,169	4,737	993	126	254	614	95	11,989
2019	5,215	4,760	993	126	261	617	96	12,069
2020	5,267	4,785	993	126	268	621	97	12,156

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.64%	2.94%	1.29%	-2.88%	4.99%	0.19%	0.66%	2.02%
2007-2010	0.72%	0.85%	-0.74%	-1.97%	-0.89%	0.90%	1.06%	0.60%
2010-2020	1.07%	0.58%	0.98%	-0.20%	2.89%	1.32%	1.06%	0.90%

Form 1.1b - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,018	3,504	735	146	145	436	79	9,063
2002	4,085	3,683	778	145	162	441	79	9,373
2003	4,359	3,911	780	125	181	476	80	9,913
2004	4,424	4,059	773	129	190	482	80	10,137
2005	4,552	4,298	781	128	177	490	81	10,507
2006	4,744	4,320	860	129	184	493	80	10,810
2007	4,631	4,388	920	136	207	529	85	10,896
2008	4,683	4,403	881	128	190	539	86	10,910
2009	4,689	4,434	876	128	196	541	87	10,950
2010	4,729	4,492	900	128	202	544	87	11,082
2011	4,789	4,537	920	127	208	554	88	11,225
2012	4,853	4,577	949	127	214	567	89	11,377
2013	4,915	4,621	963	126	220	577	90	11,514
2014	4,974	4,668	971	126	227	588	91	11,646
2015	5,026	4,716	980	126	233	597	92	11,770
2016	5,074	4,766	988	126	240	603	93	11,890
2017	5,120	4,813	993	126	247	609	94	12,003
2018	5,166	4,863	998	126	254	614	95	12,115
2019	5,213	4,911	1,000	126	261	617	96	12,225
2020	5,267	4,960	1,002	126	268	620	97	12,341

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.63%	2.88%	1.28%	-2.89%	4.98%	0.18%	0.66%	1.99%
2007-2010	0.70%	0.79%	-0.75%	-1.97%	-0.89%	0.90%	1.06%	0.56%
2010-2020	1.08%	1.00%	1.09%	-0.19%	2.89%	1.32%	1.06%	1.08%

Form 1.1b - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,018	3,504	735	146	145	436	79	9,063
2002	4,085	3,683	778	145	162	441	79	9,373
2003	4,359	3,911	780	125	181	476	80	9,913
2004	4,424	4,059	773	129	190	482	80	10,137
2005	4,552	4,298	781	128	177	490	81	10,507
2006	4,744	4,320	860	129	184	493	80	10,810
2007	4,631	4,388	920	136	207	529	85	10,896
2008	4,683	4,403	881	128	190	539	86	10,910
2009	4,689	4,434	876	128	196	541	87	10,950
2010	4,729	4,492	900	128	202	544	87	11,082
2011	4,789	4,529	920	127	208	554	88	11,216
2012	4,853	4,561	949	127	214	567	89	11,360
2013	4,914	4,596	963	126	220	577	90	11,488
2014	4,972	4,635	971	126	227	588	91	11,611
2015	5,024	4,674	979	126	233	597	92	11,725
2016	5,071	4,707	987	126	240	603	93	11,827
2017	5,117	4,738	992	126	247	609	94	11,922
2018	5,161	4,771	995	126	254	614	95	12,016
2019	5,207	4,803	997	126	261	617	96	12,107
2020	5,260	4,835	997	126	268	620	97	12,203

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.63%	2.88%	1.28%	-2.89%	4.98%	0.18%	0.66%	1.99%
2007-2010	0.70%	0.79%	-0.75%	-1.97%	-0.89%	0.90%	1.06%	0.56%
2010-2020	1.07%	0.74%	1.03%	-0.20%	2.89%	1.32%	1.06%	0.97%

Form 1.1b - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	3,611	3,138	721	124	107	589	67	8,358
1991	3,603	3,083	721	133	120	620	68	8,349
1992	3,626	3,208	748	103	131	611	68	8,496
1993	3,636	3,216	734	100	134	547	68	8,435
1994	3,662	3,207	727	110	146	495	71	8,418
1995	3,604	3,268	719	112	140	542	72	8,458
1996	3,808	3,342	768	116	151	547	75	8,805
1997	3,839	3,464	772	119	164	572	75	9,006
1998	3,959	3,437	828	138	122	564	75	9,123
1999	3,966	3,551	849	165	162	553	80	9,326
2000	4,135	3,596	842	167	147	523	81	9,491
2001	4,018	3,504	735	146	145	436	79	9,063
2002	4,085	3,683	778	145	162	441	79	9,373
2003	4,359	3,911	780	125	181	476	80	9,913
2004	4,424	4,059	773	129	190	482	80	10,137
2005	4,552	4,298	781	128	177	490	81	10,507
2006	4,744	4,320	860	129	184	493	80	10,810
2007	4,631	4,388	920	136	207	529	85	10,896
2008	4,683	4,403	881	128	190	539	86	10,910
2009	4,689	4,434	876	128	196	541	87	10,950
2010	4,729	4,492	900	128	202	544	87	11,082
2011	4,789	4,521	920	127	208	554	88	11,208
2012	4,852	4,546	949	127	214	567	89	11,344
2013	4,913	4,573	963	126	220	577	90	11,464
2014	4,971	4,603	971	126	227	588	91	11,578
2015	5,022	4,634	979	126	233	597	92	11,683
2016	5,068	4,655	986	126	240	603	93	11,772
2017	5,113	4,676	990	126	247	609	94	11,855
2018	5,157	4,698	993	126	254	614	95	11,936
2019	5,202	4,720	993	126	261	617	96	12,015
2020	5,254	4,744	992	126	268	620	97	12,101

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.36%	1.37%	1.55%	3.03%	3.21%	-1.19%	1.93%	1.28%
2000-2007	1.63%	2.88%	1.28%	-2.89%	4.98%	0.18%	0.66%	1.99%
2007-2010	0.70%	0.79%	-0.75%	-1.97%	-0.89%	0.90%	1.06%	0.56%
2010-2020	1.06%	0.55%	0.98%	-0.20%	2.89%	1.32%	1.06%	0.88%

Form 1.2 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	8,358	535	8,893	0	0	0	8,893
1991	8,349	534	8,884	0	0	0	8,884
1992	8,496	544	9,040	0	0	0	9,040
1993	8,435	540	8,974	0	0	0	8,974
1994	8,418	539	8,957	0	0	0	8,957
1995	8,458	541	8,999	0	0	0	8,999
1996	8,805	564	9,369	0	0	0	9,369
1997	9,006	576	9,583	0	0	0	9,583
1998	9,123	584	9,707	0	0	0	9,707
1999	9,326	597	9,923	0	0	0	9,923
2000	9,491	607	10,098	0	0	0	10,098
2001	9,070	580	9,650	0	8	8	9,643
2002	9,383	600	9,983	0	10	10	9,973
2003	9,924	634	10,559	0	11	11	10,547
2004	10,150	649	10,799	0	13	13	10,786
2005	10,523	672	11,195	0	16	16	11,179
2006	10,829	692	11,521	2	18	19	11,502
2007	10,917	697	11,614	2	19	21	11,594
2008	10,936	698	11,635	2	24	26	11,609
2009	10,979	701	11,679	2	27	29	11,651
2010	11,114	709	11,823	2	30	32	11,791
2011	11,259	718	11,978	2	33	35	11,943
2012	11,414	728	12,142	2	35	37	12,105
2013	11,554	737	12,291	2	38	40	12,251
2014	11,689	745	12,434	2	41	43	12,391
2015	11,816	753	12,569	2	44	46	12,523
2016	11,938	761	12,699	2	46	48	12,651
2017	12,054	768	12,822	2	49	51	12,771
2018	12,167	775	12,943	2	50	52	12,890
2019	12,278	782	13,061	2	51	54	13,007
2020	12,395	790	13,185	2	53	55	13,130

Annual Growth Rates (%)

1990-2000	1.28%	1.28%	1.28%	0.00%	0.00%	0.00%	1.28%
2000-2007	2.02%	1.99%	2.02%	0.00%	217.93%	221.73%	1.99%
2007-2010	0.60%	0.56%	0.59%	5.17%	16.04%	15.25%	0.56%
2010-2020	1.10%	1.08%	1.10%	1.01%	5.86%	5.62%	1.08%

Form 1.2 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	8,358	535	8,893	0	0	0	8,893
1991	8,349	534	8,884	0	0	0	8,884
1992	8,496	544	9,040	0	0	0	9,040
1993	8,435	540	8,974	0	0	0	8,974
1994	8,418	539	8,957	0	0	0	8,957
1995	8,458	541	8,999	0	0	0	8,999
1996	8,805	564	9,369	0	0	0	9,369
1997	9,006	576	9,583	0	0	0	9,583
1998	9,123	584	9,707	0	0	0	9,707
1999	9,326	597	9,923	0	0	0	9,923
2000	9,491	607	10,098	0	0	0	10,098
2001	9,070	580	9,650	0	8	8	9,643
2002	9,383	600	9,983	0	10	10	9,973
2003	9,924	634	10,559	0	11	11	10,547
2004	10,150	649	10,799	0	13	13	10,786
2005	10,523	672	11,195	0	16	16	11,179
2006	10,829	692	11,521	2	18	19	11,502
2007	10,917	697	11,614	2	19	21	11,594
2008	10,936	698	11,635	2	24	26	11,609
2009	10,979	701	11,679	2	27	29	11,651
2010	11,114	709	11,823	2	30	32	11,791
2011	11,251	718	11,969	2	33	35	11,934
2012	11,397	727	12,125	2	35	37	12,087
2013	11,528	735	12,263	2	38	40	12,223
2014	11,654	743	12,397	2	41	43	12,354
2015	11,771	750	12,521	2	44	46	12,476
2016	11,876	757	12,633	2	46	48	12,584
2017	11,974	763	12,737	2	49	51	12,685
2018	12,068	769	12,837	2	50	52	12,785
2019	12,160	775	12,935	2	51	54	12,882
2020	12,258	781	13,039	2	53	55	12,985

Annual Growth Rates (%)

1990-2000	1.28%	1.28%	1.28%	0.00%	0.00%	0.00%	1.28%
2000-2007	2.02%	1.99%	2.02%	0.00%	217.93%	221.73%	1.99%
2007-2010	0.60%	0.56%	0.59%	5.17%	16.04%	15.25%	0.56%
2010-2020	0.99%	0.97%	0.98%	1.01%	5.86%	5.62%	0.97%

Form 1.2 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	8,358	535	8,893	0	0	0	8,893
1991	8,349	534	8,884	0	0	0	8,884
1992	8,496	544	9,040	0	0	0	9,040
1993	8,435	540	8,974	0	0	0	8,974
1994	8,418	539	8,957	0	0	0	8,957
1995	8,458	541	8,999	0	0	0	8,999
1996	8,805	564	9,369	0	0	0	9,369
1997	9,006	576	9,583	0	0	0	9,583
1998	9,123	584	9,707	0	0	0	9,707
1999	9,326	597	9,923	0	0	0	9,923
2000	9,491	607	10,098	0	0	0	10,098
2001	9,070	580	9,650	0	8	8	9,643
2002	9,383	600	9,983	0	10	10	9,973
2003	9,924	634	10,559	0	11	11	10,547
2004	10,150	649	10,799	0	13	13	10,786
2005	10,523	672	11,195	0	16	16	11,179
2006	10,829	692	11,521	2	18	19	11,502
2007	10,917	697	11,614	2	19	21	11,594
2008	10,936	698	11,635	2	24	26	11,609
2009	10,979	701	11,679	2	27	29	11,651
2010	11,114	709	11,823	2	30	32	11,791
2011	11,243	717	11,960	2	33	35	11,926
2012	11,381	726	12,107	2	35	37	12,070
2013	11,504	734	12,237	2	38	40	12,197
2014	11,621	741	12,362	2	41	43	12,319
2015	11,729	748	12,477	2	44	46	12,431
2016	11,821	753	12,574	2	46	48	12,526
2017	11,906	759	12,664	2	49	51	12,613
2018	11,989	764	12,753	2	50	52	12,700
2019	12,069	769	12,838	2	51	54	12,784
2020	12,156	774	12,931	2	53	55	12,876

Annual Growth Rates (%)

1990-2000	1.28%	1.28%	1.28%	0.00%	0.00%	0.00%	1.28%
2000-2007	2.02%	1.99%	2.02%	0.00%	217.93%	221.73%	1.99%
2007-2010	0.60%	0.56%	0.59%	5.17%	16.04%	15.25%	0.56%
2010-2020	0.90%	0.88%	0.90%	1.01%	5.86%	5.62%	0.88%

Form 1.3 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,118	689	116	11	78	2,013
1991	1,154	656	114	12	77	2,012
1992	1,034	697	122	15	85	1,953
1993	1,115	671	117	14	75	1,992
1994	978	706	128	17	70	1,899
1995	1,131	715	126	16	78	2,065
1996	1,281	711	123	15	73	2,204
1997	1,274	765	131	18	80	2,268
1998	1,370	801	150	14	84	2,420
1999	1,507	813	149	17	76	2,563
2000	1,399	838	160	17	82	2,497
2001	1,346	766	123	15	59	2,308
2002	1,463	886	145	18	70	2,581
2003	1,469	913	137	19	71	2,609
2004	1,327	924	135	20	76	2,482
2005	1,530	993	134	18	74	2,750
2006	2,077	755	107	30	77	3,047
2007	1,619	1,004	155	21	79	2,879
2008	1,652	967	147	19	82	2,866
2009	1,632	956	143	19	81	2,831
2010	1,652	968	147	20	81	2,868
2011	1,675	977	150	20	83	2,905
2012	1,699	986	153	21	85	2,944
2013	1,724	995	155	21	86	2,982
2014	1,749	1,004	156	22	88	3,020
2015	1,774	1,014	158	22	89	3,057
2016	1,796	1,024	159	23	90	3,092
2017	1,817	1,034	160	24	91	3,125
2018	1,839	1,044	160	24	92	3,159
2018	1,862	1,054	160	25	92	3,193
2020	1,887	1,063	161	25	93	3,229

Annual Growth Rates (%)

1990-2000	2.27%	1.97%	3.27%	3.97%	0.54%	2.18%
2000-2007	2.11%	2.62%	-0.53%	3.28%	-0.49%	2.05%
2007-2010	0.66%	-1.22%	-1.73%	-1.81%	0.87%	-0.13%
2010-2020	1.34%	0.94%	0.92%	2.45%	1.32%	1.19%

Form 1.3 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,118	689	116	11	78	2,013
1991	1,154	656	114	12	77	2,012
1992	1,034	697	122	15	85	1,953
1993	1,115	671	117	14	75	1,992
1994	978	706	128	17	70	1,899
1995	1,131	715	126	16	78	2,065
1996	1,281	711	123	15	73	2,204
1997	1,274	765	131	18	80	2,268
1998	1,370	801	150	14	84	2,420
1999	1,507	813	149	17	76	2,563
2000	1,399	838	160	17	82	2,497
2001	1,346	766	123	15	59	2,308
2002	1,463	886	145	18	70	2,581
2003	1,469	913	137	19	71	2,609
2004	1,327	924	135	20	76	2,482
2005	1,530	993	134	18	74	2,750
2006	2,077	755	107	30	77	3,047
2007	1,619	1,004	155	21	79	2,879
2008	1,652	967	147	19	82	2,866
2009	1,632	956	143	19	81	2,831
2010	1,652	968	147	20	81	2,868
2011	1,675	976	150	20	83	2,903
2012	1,699	982	153	21	85	2,941
2013	1,724	990	155	21	86	2,977
2014	1,749	997	156	22	88	3,013
2015	1,774	1,006	157	22	89	3,048
2016	1,795	1,013	159	23	90	3,080
2017	1,817	1,019	159	24	91	3,109
2018	1,839	1,026	160	24	92	3,140
2018	1,861	1,032	160	25	92	3,170
2020	1,886	1,038	160	25	93	3,202

Annual Growth Rates (%)

1990-2000	2.27%	1.97%	3.27%	3.97%	0.54%	2.18%
2000-2007	2.11%	2.62%	-0.53%	3.28%	-0.49%	2.05%
2007-2010	0.66%	-1.22%	-1.73%	-1.81%	0.87%	-0.13%
2010-2020	1.34%	0.70%	0.88%	2.45%	1.32%	1.11%

Form 1.3 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,118	689	116	11	78	2,013
1991	1,154	656	114	12	77	2,012
1992	1,034	697	122	15	85	1,953
1993	1,115	671	117	14	75	1,992
1994	978	706	128	17	70	1,899
1995	1,131	715	126	16	78	2,065
1996	1,281	711	123	15	73	2,204
1997	1,274	765	131	18	80	2,268
1998	1,370	801	150	14	84	2,420
1999	1,507	813	149	17	76	2,563
2000	1,399	838	160	17	82	2,497
2001	1,346	766	123	15	59	2,308
2002	1,463	886	145	18	70	2,581
2003	1,469	913	137	19	71	2,609
2004	1,327	924	135	20	76	2,482
2005	1,530	993	134	18	74	2,750
2006	2,077	755	107	30	77	3,047
2007	1,619	1,004	155	21	79	2,879
2008	1,652	967	147	19	82	2,866
2009	1,632	956	143	19	81	2,831
2010	1,652	968	147	20	81	2,868
2011	1,675	974	150	20	83	2,902
2012	1,699	979	153	21	85	2,938
2013	1,724	985	155	21	86	2,972
2014	1,749	991	156	22	88	3,006
2015	1,773	997	157	22	89	3,040
2016	1,795	1,002	158	23	90	3,069
2017	1,816	1,006	159	24	91	3,096
2018	1,838	1,010	159	24	92	3,123
2018	1,860	1,015	159	25	92	3,151
2020	1,885	1,019	159	25	93	3,181

Annual Growth Rates (%)

1990-2000	2.27%	1.97%	3.27%	3.97%	0.54%	2.18%
2000-2007	2.11%	2.62%	-0.53%	3.28%	-0.49%	2.05%
2007-2010	0.66%	-1.22%	-1.73%	-1.81%	0.87%	-0.13%
2010-2020	1.33%	0.51%	0.83%	2.45%	1.32%	1.04%

Form 1.4 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,013	154	2,167	0	0	0	2,167	47
1991	2,012	154	2,166	0	0	0	2,166	47
1992	1,953	150	2,103	0	0	0	2,103	49
1993	1,992	153	2,145	0	0	0	2,145	48
1994	1,899	145	2,044	0	0	0	2,044	50
1995	2,065	158	2,223	0	0	0	2,223	46
1996	2,204	169	2,373	0	0	0	2,373	45
1997	2,268	174	2,442	0	0	0	2,442	45
1998	2,420	185	2,605	0	0	0	2,605	43
1999	2,563	196	2,759	0	0	0	2,759	41
2000	2,497	191	2,688	0	0	0	2,688	43
2001	2,308	177	2,485	0	2	2	2,483	44
2002	2,581	197	2,779	0	3	3	2,776	41
2003	2,609	200	2,809	0	4	4	2,805	43
2004	2,482	190	2,672	0	4	4	2,667	46
2005	2,750	210	2,960	0	5	5	2,955	43
2006	3,047	233	3,280	0	6	6	3,274	40
2007	2,879	220	3,099	0	6	6	3,092	43
2008	2,866	219	3,085	0	8	8	3,077	43
2009	2,831	216	3,047	0	9	9	3,038	44
2010	2,868	219	3,086	0	9	10	3,077	43
2011	2,905	222	3,127	0	10	11	3,116	43
2012	2,944	225	3,169	0	11	11	3,157	43
2013	2,982	227	3,210	0	12	12	3,197	43
2014	3,020	230	3,250	0	13	13	3,237	43
2015	3,057	233	3,290	0	14	14	3,276	43
2016	3,092	236	3,327	0	15	15	3,312	43
2017	3,125	238	3,363	0	16	16	3,348	43
2018	3,159	241	3,400	0	16	16	3,384	43
2019	3,193	243	3,436	0	16	17	3,420	43
2020	3,229	246	3,475	0	17	17	3,458	43

Annual Growth Rates (%)

1990-2000	2.18%	2.18%	2.18%	0.00%	0.00%	0.00%	2.18%	-0.88%
2000-2007	2.05%	2.02%	2.05%	0.00%	0.00%	219.78%	2.02%	-0.03%
2007-2010	-0.13%	-0.17%	-0.13%	1.95%	16.04%	15.55%	-0.17%	0.53%
2010-2020	1.19%	1.18%	1.19%	0.39%	5.86%	5.74%	1.18%	-0.09%

Form 1.4 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,013	154	2,167	0	0	0	2,167	47
1991	2,012	154	2,166	0	0	0	2,166	47
1992	1,953	150	2,103	0	0	0	2,103	49
1993	1,992	153	2,145	0	0	0	2,145	48
1994	1,899	145	2,044	0	0	0	2,044	50
1995	2,065	158	2,223	0	0	0	2,223	46
1996	2,204	169	2,373	0	0	0	2,373	45
1997	2,268	174	2,442	0	0	0	2,442	45
1998	2,420	185	2,605	0	0	0	2,605	43
1999	2,563	196	2,759	0	0	0	2,759	41
2000	2,497	191	2,688	0	0	0	2,688	43
2001	2,308	177	2,485	0	2	2	2,483	44
2002	2,581	197	2,779	0	3	3	2,776	41
2003	2,609	200	2,809	0	4	4	2,805	43
2004	2,482	190	2,672	0	4	4	2,667	46
2005	2,750	210	2,960	0	5	5	2,955	43
2006	3,047	233	3,280	0	6	6	3,274	40
2007	2,879	220	3,099	0	6	6	3,092	43
2008	2,866	219	3,085	0	8	8	3,077	43
2009	2,831	216	3,047	0	9	9	3,038	44
2010	2,868	219	3,086	0	9	10	3,077	43
2011	2,903	222	3,125	0	10	11	3,114	43
2012	2,941	224	3,165	0	11	11	3,154	43
2013	2,977	227	3,204	0	12	12	3,192	43
2014	3,013	230	3,243	0	13	13	3,230	43
2015	3,048	232	3,281	0	14	14	3,267	43
2016	3,080	235	3,314	0	15	15	3,299	43
2017	3,109	237	3,346	0	16	16	3,331	43
2018	3,140	239	3,379	0	16	16	3,363	43
2019	3,170	242	3,411	0	16	17	3,395	43
2020	3,202	244	3,446	0	17	17	3,429	43
Annual Growth Rates (%)								
1990-2000	2.18%	2.18%	2.18%	0.00%	0.00%	0.00%	2.18%	-0.88%
2000-2007	2.05%	2.02%	2.05%	0.00%	0.00%	219.78%	2.02%	-0.03%
2007-2010	-0.13%	-0.17%	-0.13%	1.95%	16.04%	15.55%	-0.17%	0.53%
2010-2020	1.11%	1.09%	1.11%	0.39%	5.86%	5.74%	1.09%	-0.12%

Form 1.4 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,013	154	2,167	0	0	0	2,167	47
1991	2,012	154	2,166	0	0	0	2,166	47
1992	1,953	150	2,103	0	0	0	2,103	49
1993	1,992	153	2,145	0	0	0	2,145	48
1994	1,899	145	2,044	0	0	0	2,044	50
1995	2,065	158	2,223	0	0	0	2,223	46
1996	2,204	169	2,373	0	0	0	2,373	45
1997	2,268	174	2,442	0	0	0	2,442	45
1998	2,420	185	2,605	0	0	0	2,605	43
1999	2,563	196	2,759	0	0	0	2,759	41
2000	2,497	191	2,688	0	0	0	2,688	43
2001	2,308	177	2,485	0	2	2	2,483	44
2002	2,581	197	2,779	0	3	3	2,776	41
2003	2,609	200	2,809	0	4	4	2,805	43
2004	2,482	190	2,672	0	4	4	2,667	46
2005	2,750	210	2,960	0	5	5	2,955	43
2006	3,047	233	3,280	0	6	6	3,274	40
2007	2,879	220	3,099	0	6	6	3,092	43
2008	2,866	219	3,085	0	8	8	3,077	43
2009	2,831	216	3,047	0	9	9	3,038	44
2010	2,868	219	3,086	0	9	10	3,077	43
2011	2,902	221	3,123	0	10	11	3,113	43
2012	2,938	224	3,162	0	11	11	3,150	43
2013	2,972	227	3,199	0	12	12	3,186	43
2014	3,006	229	3,236	0	13	13	3,223	43
2015	3,040	232	3,272	0	14	14	3,258	43
2016	3,069	234	3,302	0	15	15	3,287	43
2017	3,096	236	3,332	0	16	16	3,316	43
2018	3,123	238	3,361	0	16	16	3,345	43
2019	3,151	240	3,391	0	16	17	3,375	43
2020	3,181	242	3,424	0	17	17	3,407	43
Annual Growth Rates (%)								
1990-2000	2.18%	2.18%	2.18%	0.00%	0.00%	0.00%	2.18%	-0.88%
2000-2007	2.05%	2.02%	2.05%	0.00%	0.00%	219.78%	2.02%	-0.03%
2007-2010	-0.13%	-0.17%	-0.13%	1.95%	16.04%	15.55%	-0.17%	0.53%
2010-2020	1.04%	1.02%	1.04%	0.39%	5.86%	5.74%	1.02%	-0.14%

Form 1.5 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	3,077	3,301	3,364	3,418	1.0725	1.0930	1.1108
2009	3,038	3,259	3,321	3,375	1.0725	1.0930	1.1108
2010	3,077	3,300	3,363	3,418	1.0725	1.0930	1.1108
2011	3,116	3,342	3,406	3,461	1.0725	1.0930	1.1108
2012	3,157	3,386	3,451	3,507	1.0725	1.0930	1.1108
2013	3,197	3,429	3,495	3,551	1.0725	1.0930	1.1108
2014	3,237	3,472	3,538	3,596	1.0725	1.0930	1.1108
2015	3,276	3,514	3,581	3,639	1.0725	1.0930	1.1108
2016	3,312	3,553	3,621	3,679	1.0725	1.0930	1.1108
2017	3,348	3,590	3,659	3,718	1.0725	1.0930	1.1108

Form 1.5 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	3,077	3,301	3,364	3,418	1.0725	1.0930	1.1108
2009	3,038	3,259	3,321	3,375	1.0725	1.0930	1.1108
2010	3,077	3,300	3,363	3,418	1.0725	1.0930	1.1108
2011	3,114	3,340	3,404	3,459	1.0725	1.0930	1.1108
2012	3,154	3,382	3,447	3,503	1.0725	1.0930	1.1108
2013	3,192	3,423	3,489	3,545	1.0725	1.0930	1.1108
2014	3,230	3,464	3,530	3,587	1.0725	1.0930	1.1108
2015	3,267	3,504	3,571	3,629	1.0725	1.0930	1.1108
2016	3,299	3,539	3,606	3,665	1.0725	1.0930	1.1108
2017	3,331	3,572	3,640	3,700	1.0725	1.0930	1.1108

Form 1.5 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	3,077	3,301	3,364	3,418	1.0725	1.0930	1.1108
2009	3,038	3,259	3,321	3,375	1.0725	1.0930	1.1108
2010	3,077	3,300	3,363	3,418	1.0725	1.0930	1.1108
2011	3,113	3,338	3,402	3,457	1.0725	1.0930	1.1108
2012	3,150	3,379	3,443	3,499	1.0725	1.0930	1.1108
2013	3,186	3,417	3,483	3,539	1.0725	1.0930	1.1108
2014	3,223	3,456	3,522	3,580	1.0725	1.0930	1.1108
2015	3,258	3,494	3,561	3,619	1.0725	1.0930	1.1108
2016	3,287	3,526	3,593	3,652	1.0725	1.0930	1.1108
2017	3,316	3,556	3,624	3,683	1.0725	1.0930	1.1108

Form 2.2 - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Planning Area Economic and Demographic Assumptions

Year	Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	1,018,433	396,134	2.57	30,833	5,136	179
1991	1,051,318	407,886	2.58	30,889	4,948	184
1992	1,068,645	415,085	2.57	31,521	4,494	190
1993	1,083,913	421,153	2.57	31,227	4,280	194
1994	1,090,144	427,082	2.55	31,987	4,441	197
1995	1,095,152	432,887	2.53	33,107	4,528	200
1996	1,109,749	438,011	2.53	33,406	4,761	203
1997	1,123,820	440,189	2.55	34,697	5,446	206
1998	1,140,219	443,015	2.57	36,997	6,074	211
1999	1,179,070	449,589	2.62	38,608	7,021	217
2000	1,205,313	455,115	2.65	41,199	8,314	223
2001	1,244,667	464,466	2.68	42,903	7,867	229
2002	1,277,345	474,890	2.69	43,922	8,063	234
2003	1,306,514	485,655	2.69	45,449	8,332	241
2004	1,331,628	496,450	2.68	47,177	8,695	246
2005	1,352,292	507,482	2.66	47,987	10,542	253
2006	1,370,908	517,232	2.65	49,718	11,046	257
2007	1,389,505	524,593	2.65	51,052	10,576	262
2008	1,404,463	530,240	2.65	50,780	10,400	266
2009	1,419,576	535,946	2.65	50,612	10,277	272
2010	1,434,849	541,712	2.65	51,366	10,355	276
2011	1,450,286	547,540	2.65	52,752	10,648	280
2012	1,465,884	553,429	2.65	54,181	11,012	285
2013	1,481,649	559,381	2.65	55,527	11,208	290
2014	1,497,579	565,395	2.65	56,779	11,323	295
2015	1,513,675	571,472	2.65	57,870	11,452	300
2016	1,529,944	577,614	2.65	58,964	11,580	305
2017	1,546,384	583,821	2.65	60,075	11,693	309
2018	1,563,000	590,094	2.65	61,178	11,787	314
2019	1,579,790	596,433	2.65	62,262	11,853	318
2020	1,596,758	602,839	2.65	63,343	11,903	323
Annual Growth Rates (%)						
1990-2000	1.70%	1.40%	0.30%	2.94%	0.00%	2.20%
2000-2007	2.05%	2.05%	0.00%	3.11%	0.00%	2.37%
2007-2010	1.08%	1.08%	0.00%	0.20%	-0.70%	1.67%
2010-2020	1.07%	1.07%	0.00%	2.12%	1.40%	1.59%

Form 1.7a - SMUD Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Private Supply by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
2001	0	7	0	0	0	0	0	8
2002	1	9	0	0	0	0	0	10
2003	2	10	0	0	0	0	0	11
2004	2	11	0	0	0	0	0	13
2005	3	13	0	0	0	0	0	16
2006	3	15	0	0	0	0	0	19
2007	4	16	0	0	0	0	0	21
2008	5	20	1	0	0	0	0	26
2009	5	22	1	0	0	0	0	29
2010	6	24	1	0	0	0	0	32
2011	7	26	1	0	0	0	0	35
2012	8	28	1	0	0	0	0	37
2013	9	30	1	0	0	0	0	40
2014	10	32	1	0	0	0	0	43
2015	10	34	1	0	0	0	0	46
2016	11	36	1	0	0	0	0	48
2017	12	38	1	0	0	0	0	51
2018	12	39	1	0	0	0	0	52
2019	13	40	1	0	0	0	0	54
2020	13	41	1	0	0	0	0	55

Annual Growth Rates (%)

1990-2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000-2007	151.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	221.73%
2007-2010	19.75%	14.97%	2.67%	0.41%	1.04%	0.61%	0.00%	15.25%
2010-2020	7.50%	5.29%	0.05%	0.06%	0.07%	0.08%	0.00%	5.62%

Form 2.3 Electricity Prices - SMUD									
	residential			commercial			industrial		
YEAR	low rate	mid rate	high rate	low rate	mid rate	high rate	low rate	mid rate	high rate
1980	5.20	5.20	5.20	5.57	5.57	5.57	3.57	3.57	3.57
1981	5.33	5.33	5.33	5.61	5.61	5.61	3.58	3.58	3.58
1982	5.95	5.95	5.95	4.70	4.70	4.70	4.41	4.41	4.41
1983	6.53	6.53	6.53	6.49	6.49	6.49	4.85	4.85	4.85
1984	6.64	6.64	6.64	6.51	6.51	6.51	4.88	4.88	4.88
1985	7.50	7.50	7.50	7.47	7.47	7.47	5.64	5.64	5.64
1986	8.92	8.92	8.92	8.59	8.59	8.59	6.76	6.76	6.76
1987	10.53	10.53	10.53	10.15	10.15	10.15	8.10	8.10	8.10
1988	11.29	11.29	11.29	10.93	10.93	10.93	8.63	8.63	8.63
1989	10.79	10.79	10.79	10.72	10.72	10.72	9.30	9.30	9.30
1990	10.68	10.68	10.68	12.60	12.60	12.60	10.54	10.54	10.54
1991	10.29	10.29	10.29	12.31	12.31	12.31	10.26	10.26	10.26
1992	10.08	10.08	10.08	11.69	11.69	11.69	10.08	10.08	10.08
1993	9.20	9.20	9.20	11.39	11.39	11.39	9.15	9.15	9.15
1994	9.43	9.43	9.43	10.54	10.54	10.54	8.92	8.92	8.92
1995	9.40	9.40	9.40	10.32	10.32	10.32	8.96	8.96	8.96
1996	9.38	9.38	9.38	10.14	10.14	10.14	8.83	8.83	8.83
1997	8.59	8.59	8.59	9.91	9.91	9.91	8.59	8.59	8.59
1998	8.49	8.49	8.49	9.78	9.78	9.78	8.56	8.56	8.56
1999	8.37	8.37	8.37	9.67	9.67	9.67	8.52	8.52	8.52
2000	8.19	8.19	8.19	9.47	9.47	9.47	8.28	8.28	8.28
2001	9.35	9.35	9.35	10.96	10.96	10.96	9.75	9.75	9.75
2002	9.17	9.17	9.17	11.57	11.57	11.57	9.83	9.83	9.83
2003	10.22	10.22	10.22	11.20	11.20	11.20	9.50	9.50	9.50
2004	12.03	12.03	12.03	10.72	10.72	10.72	9.09	9.09	9.09
2005	12.10	12.10	12.10	10.78	10.78	10.78	9.06	9.06	9.06
2006	11.97	11.97	11.97	10.71	10.71	10.71	8.97	8.97	8.97
2007	11.54	11.54	11.54	10.37	10.37	10.37	8.73	8.73	8.73
2008	11.91	11.91	11.91	10.79	10.79	10.79	9.07	9.07	9.07
2009	11.95	11.95	11.95	10.98	10.98	10.98	9.24	9.24	9.24
2010	11.95	11.95	11.95	10.98	10.98	10.98	9.24	9.24	9.24
2011	11.95	12.07	12.18	10.98	11.09	11.19	9.24	9.33	9.42
2012	11.95	12.19	12.41	10.98	11.20	11.41	9.24	9.42	9.60
2013	11.95	12.30	12.65	10.98	11.30	11.62	9.24	9.51	9.78
2014	11.95	12.43	12.90	10.98	11.42	11.85	9.24	9.61	9.97
2015	11.95	12.55	13.14	10.98	11.53	12.08	9.24	9.70	10.16
2016	11.95	12.78	13.59	10.98	11.74	12.49	9.24	9.88	10.51
2017	11.95	13.01	14.05	10.98	11.95	12.91	9.24	10.06	10.87
2018	11.95	13.25	14.53	10.98	12.17	13.35	9.24	10.25	11.24
2019	11.95	13.49	15.02	10.98	12.40	13.80	9.24	10.43	11.62
2020	11.95	13.74	15.53	10.98	12.63	14.27	9.24	10.63	12.01

Form 1.1 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	5,421	5,841	1,653	292	240	1,405	73	14,926
1991	5,333	5,698	1,640	316	207	1,495	76	14,764
1992	5,609	6,257	1,680	332	195	1,515	76	15,665
1993	5,549	6,253	1,665	272	212	1,521	77	15,549
1994	5,729	6,352	1,628	229	232	1,542	79	15,791
1995	5,734	6,503	1,595	246	228	1,537	81	15,923
1996	5,935	6,850	1,581	248	251	1,491	82	16,437
1997	6,123	7,384	1,694	77	84	1,637	83	17,082
1998	6,319	7,355	1,819	217	216	1,611	93	17,630
1999	6,453	7,716	1,979	207	239	1,624	93	18,312
2000	6,513	8,628	1,995	143	153	1,767	96	19,294
2001	6,116	7,629	1,813	200	233	1,736	98	17,825
2002	6,326	7,942	1,721	225	232	1,725	96	18,267
2003	6,745	8,322	1,671	207	228	1,691	105	18,968
2004	7,074	8,892	1,699	176	252	1,713	102	19,908
2005	7,105	8,863	1,667	170	255	1,746	105	19,910
2006	7,522	9,222	1,641	189	312	1,857	108	20,851
2007	7,541	8,966	1,553	197	334	1,754	148	20,493
2008	7,494	9,062	1,479	186	251	1,740	148	20,361
2009	7,488	9,128	1,434	186	253	1,734	149	20,372
2010	7,536	9,177	1,444	186	255	1,753	150	20,502
2011	7,618	9,235	1,468	185	257	1,776	151	20,691
2012	7,699	9,355	1,511	183	259	1,799	152	20,959
2013	7,767	9,488	1,532	182	261	1,821	153	21,205
2014	7,833	9,624	1,542	181	263	1,836	155	21,434
2015	7,896	9,757	1,554	181	265	1,851	156	21,660
2016	7,965	9,887	1,568	181	267	1,866	157	21,890
2017	8,039	10,017	1,579	181	269	1,880	158	22,123
2018	8,119	10,152	1,588	180	271	1,895	159	22,364
2019	8,203	10,292	1,594	180	274	1,909	160	22,611
2020	8,294	10,439	1,598	179	276	1,924	161	22,871

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	3.98%	1.90%	-6.88%	-4.42%	2.32%	2.71%	2.60%
2000-2007	2.12%	0.55%	-3.52%	4.68%	11.83%	-0.11%	6.38%	0.86%
2007-2010	-0.03%	0.78%	-2.39%	-1.92%	-8.56%	-0.01%	0.55%	0.02%
2010-2020	0.96%	1.30%	1.02%	-0.37%	0.78%	0.93%	0.70%	1.10%

Form 1.1 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	5,421	5,841	1,653	292	240	1,405	73	14,926
1991	5,333	5,698	1,640	316	207	1,495	76	14,764
1992	5,609	6,257	1,680	332	195	1,515	76	15,665
1993	5,549	6,253	1,665	272	212	1,521	77	15,549
1994	5,729	6,352	1,628	229	232	1,542	79	15,791
1995	5,734	6,503	1,595	246	228	1,537	81	15,923
1996	5,935	6,850	1,581	248	251	1,491	82	16,437
1997	6,123	7,384	1,694	77	84	1,637	83	17,082
1998	6,319	7,355	1,819	217	216	1,611	93	17,630
1999	6,453	7,716	1,979	207	239	1,624	93	18,312
2000	6,513	8,628	1,995	143	153	1,767	96	19,294
2001	6,116	7,629	1,813	200	233	1,736	98	17,825
2002	6,326	7,942	1,721	225	232	1,725	96	18,267
2003	6,745	8,322	1,671	207	228	1,691	105	18,968
2004	7,074	8,892	1,699	176	252	1,713	102	19,908
2005	7,105	8,863	1,667	170	255	1,746	105	19,910
2006	7,522	9,222	1,641	189	312	1,857	108	20,851
2007	7,541	8,966	1,553	197	334	1,754	148	20,493
2008	7,494	9,062	1,479	186	251	1,740	148	20,361
2009	7,488	9,128	1,434	186	253	1,734	149	20,372
2010	7,536	9,177	1,444	186	255	1,753	150	20,502
2011	7,618	9,218	1,468	185	257	1,776	151	20,673
2012	7,698	9,321	1,511	183	259	1,799	152	20,924
2013	7,765	9,436	1,532	182	261	1,821	153	21,151
2014	7,830	9,554	1,542	181	263	1,836	155	21,361
2015	7,893	9,668	1,554	181	265	1,851	156	21,568
2016	7,960	9,764	1,569	181	267	1,866	157	21,763
2017	8,032	9,859	1,579	181	269	1,880	158	21,958
2018	8,111	9,956	1,588	180	271	1,895	159	22,160
2019	8,193	10,061	1,594	180	274	1,909	160	22,369
2020	8,282	10,169	1,597	179	276	1,924	161	22,588

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	3.98%	1.90%	-6.88%	-4.42%	2.32%	2.71%	2.60%
2000-2007	2.12%	0.55%	-3.52%	4.68%	11.83%	-0.11%	6.38%	0.86%
2007-2010	-0.03%	0.78%	-2.39%	-1.92%	-8.56%	-0.01%	0.55%	0.02%
2010-2020	0.95%	1.03%	1.01%	-0.38%	0.78%	0.93%	0.70%	0.97%

Form 1.1 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	5,421	5,841	1,653	292	240	1,405	73	14,926
1991	5,333	5,698	1,640	316	207	1,495	76	14,764
1992	5,609	6,257	1,680	332	195	1,515	76	15,665
1993	5,549	6,253	1,665	272	212	1,521	77	15,549
1994	5,729	6,352	1,628	229	232	1,542	79	15,791
1995	5,734	6,503	1,595	246	228	1,537	81	15,923
1996	5,935	6,850	1,581	248	251	1,491	82	16,437
1997	6,123	7,384	1,694	77	84	1,637	83	17,082
1998	6,319	7,355	1,819	217	216	1,611	93	17,630
1999	6,453	7,716	1,979	207	239	1,624	93	18,312
2000	6,513	8,628	1,995	143	153	1,767	96	19,294
2001	6,116	7,629	1,813	200	233	1,736	98	17,825
2002	6,326	7,942	1,721	225	232	1,725	96	18,267
2003	6,745	8,322	1,671	207	228	1,691	105	18,968
2004	7,074	8,892	1,699	176	252	1,713	102	19,908
2005	7,105	8,863	1,667	170	255	1,746	105	19,910
2006	7,522	9,222	1,641	189	312	1,857	108	20,851
2007	7,541	8,966	1,553	197	334	1,754	148	20,493
2008	7,494	9,062	1,479	186	251	1,740	148	20,361
2009	7,488	9,128	1,434	186	253	1,734	149	20,372
2010	7,536	9,177	1,444	186	255	1,753	150	20,502
2011	7,617	9,201	1,468	185	257	1,776	151	20,655
2012	7,697	9,288	1,511	183	259	1,799	152	20,890
2013	7,763	9,386	1,532	182	261	1,821	153	21,098
2014	7,827	9,486	1,542	181	263	1,836	155	21,290
2015	7,889	9,583	1,553	181	265	1,851	156	21,478
2016	7,955	9,649	1,568	181	267	1,866	157	21,643
2017	8,027	9,715	1,578	180	269	1,880	158	21,807
2018	8,104	9,784	1,586	180	271	1,895	159	21,979
2019	8,184	9,856	1,593	180	274	1,909	160	22,154
2020	8,271	9,934	1,596	179	276	1,924	161	22,342

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	3.98%	1.90%	-6.88%	-4.42%	2.32%	2.71%	2.60%
2000-2007	2.12%	0.55%	-3.52%	4.68%	11.83%	-0.11%	6.38%	0.86%
2007-2010	-0.03%	0.78%	-2.39%	-1.92%	-8.56%	-0.01%	0.55%	0.02%
2010-2020	0.94%	0.80%	1.01%	-0.38%	0.78%	0.93%	0.70%	0.86%

Form 1.1b - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	5,421	5,663	1,424	292	239	1,284	73	14,397
1991	5,333	5,536	1,406	316	206	1,373	76	14,246
1992	5,609	6,112	1,456	332	195	1,404	76	15,184
1993	5,549	6,107	1,463	272	211	1,433	77	15,112
1994	5,729	6,201	1,441	229	232	1,450	79	15,361
1995	5,734	6,354	1,414	246	228	1,453	81	15,509
1996	5,935	6,701	1,400	248	251	1,412	82	16,028
1997	6,123	7,234	1,522	77	84	1,556	83	16,678
1998	6,319	7,212	1,658	217	216	1,533	93	17,247
1999	6,453	7,570	1,807	207	239	1,543	93	17,913
2000	6,512	8,489	1,843	143	153	1,687	96	18,924
2001	6,115	7,369	1,697	200	233	1,736	98	17,448
2002	6,324	7,538	1,592	225	232	1,725	96	17,731
2003	6,742	7,873	1,516	207	227	1,689	105	18,359
2004	7,069	8,379	1,543	176	251	1,710	102	19,230
2005	7,098	8,315	1,504	170	254	1,742	105	19,188
2006	7,514	8,662	1,484	188	311	1,848	108	20,115
2007	7,529	8,859	1,464	197	332	1,740	148	20,270
2008	7,477	8,935	1,371	186	250	1,723	148	20,089
2009	7,461	8,955	1,326	185	252	1,715	149	20,043
2010	7,504	8,982	1,336	186	254	1,731	150	20,142
2011	7,583	9,016	1,360	184	256	1,751	151	20,302
2012	7,661	9,113	1,403	182	258	1,772	152	20,541
2013	7,725	9,236	1,423	181	260	1,794	153	20,773
2014	7,787	9,362	1,434	181	262	1,809	155	20,988
2015	7,846	9,485	1,445	180	264	1,824	156	21,200
2016	7,911	9,605	1,460	180	266	1,839	157	21,417
2017	7,984	9,732	1,470	180	268	1,853	158	21,645
2018	8,064	9,863	1,479	179	270	1,868	159	21,881
2019	8,146	9,999	1,486	179	272	1,882	160	22,124
2020	8,235	10,143	1,490	179	274	1,897	161	22,379

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	4.13%	2.62%	-6.88%	-4.40%	2.77%	2.71%	2.77%
2000-2007	2.09%	0.61%	-3.23%	4.63%	11.76%	0.45%	6.38%	0.99%
2007-2010	-0.11%	0.46%	-3.02%	-1.92%	-8.60%	-0.17%	0.55%	-0.21%
2010-2020	0.93%	1.22%	1.10%	-0.37%	0.78%	0.92%	0.70%	1.06%

Form 1.1b - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	5,421	5,663	1,424	292	239	1,284	73	14,397
1991	5,333	5,536	1,406	316	206	1,373	76	14,246
1992	5,609	6,112	1,456	332	195	1,404	76	15,184
1993	5,549	6,107	1,463	272	211	1,433	77	15,112
1994	5,729	6,201	1,441	229	232	1,450	79	15,361
1995	5,734	6,354	1,414	246	228	1,453	81	15,509
1996	5,935	6,701	1,400	248	251	1,412	82	16,028
1997	6,123	7,234	1,522	77	84	1,556	83	16,678
1998	6,319	7,212	1,658	217	216	1,533	93	17,247
1999	6,453	7,570	1,807	207	239	1,543	93	17,913
2000	6,512	8,489	1,843	143	153	1,687	96	18,924
2001	6,115	7,369	1,697	200	233	1,736	98	17,448
2002	6,324	7,538	1,592	225	232	1,725	96	17,731
2003	6,742	7,873	1,516	207	227	1,689	105	18,359
2004	7,069	8,379	1,543	176	251	1,710	102	19,230
2005	7,098	8,315	1,504	170	254	1,742	105	19,188
2006	7,514	8,662	1,484	188	311	1,848	108	20,115
2007	7,529	8,859	1,464	197	332	1,740	148	20,270
2008	7,477	8,935	1,371	186	250	1,723	148	20,089
2009	7,461	8,955	1,326	185	252	1,715	149	20,043
2010	7,504	8,982	1,336	186	254	1,731	150	20,142
2011	7,583	8,999	1,360	184	256	1,751	151	20,284
2012	7,660	9,079	1,403	182	258	1,772	152	20,506
2013	7,723	9,184	1,424	181	260	1,794	153	20,719
2014	7,784	9,291	1,434	181	262	1,809	155	20,915
2015	7,843	9,396	1,446	180	264	1,824	156	21,108
2016	7,906	9,482	1,460	180	266	1,839	157	21,290
2017	7,978	9,573	1,471	180	268	1,853	158	21,480
2018	8,055	9,667	1,479	179	270	1,868	159	21,678
2019	8,136	9,768	1,485	179	272	1,882	160	21,882
2020	8,224	9,873	1,489	179	274	1,897	161	22,097

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	4.13%	2.62%	-6.88%	-4.40%	2.77%	2.71%	2.77%
2000-2007	2.09%	0.61%	-3.23%	4.63%	11.76%	0.45%	6.38%	0.99%
2007-2010	-0.11%	0.46%	-3.02%	-1.92%	-8.60%	-0.17%	0.55%	-0.21%
2010-2020	0.92%	0.95%	1.09%	-0.38%	0.78%	0.92%	0.70%	0.93%

Form 1.1b - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	5,421	5,663	1,424	292	239	1,284	73	14,397
1991	5,333	5,536	1,406	316	206	1,373	76	14,246
1992	5,609	6,112	1,456	332	195	1,404	76	15,184
1993	5,549	6,107	1,463	272	211	1,433	77	15,112
1994	5,729	6,201	1,441	229	232	1,450	79	15,361
1995	5,734	6,354	1,414	246	228	1,453	81	15,509
1996	5,935	6,701	1,400	248	251	1,412	82	16,028
1997	6,123	7,234	1,522	77	84	1,556	83	16,678
1998	6,319	7,212	1,658	217	216	1,533	93	17,247
1999	6,453	7,570	1,807	207	239	1,543	93	17,913
2000	6,512	8,489	1,843	143	153	1,687	96	18,924
2001	6,115	7,369	1,697	200	233	1,736	98	17,448
2002	6,324	7,538	1,592	225	232	1,725	96	17,731
2003	6,742	7,873	1,516	207	227	1,689	105	18,359
2004	7,069	8,379	1,543	176	251	1,710	102	19,230
2005	7,098	8,315	1,504	170	254	1,742	105	19,188
2006	7,514	8,662	1,484	188	311	1,848	108	20,115
2007	7,529	8,859	1,464	197	332	1,740	148	20,270
2008	7,477	8,935	1,371	186	250	1,723	148	20,089
2009	7,461	8,955	1,326	185	252	1,715	149	20,043
2010	7,504	8,982	1,336	186	254	1,731	150	20,142
2011	7,582	8,982	1,360	184	256	1,751	151	20,266
2012	7,658	9,046	1,403	182	258	1,772	152	20,472
2013	7,721	9,133	1,423	181	260	1,794	153	20,666
2014	7,781	9,224	1,433	181	262	1,809	155	20,845
2015	7,840	9,311	1,445	180	264	1,824	156	21,019
2016	7,902	9,367	1,459	180	266	1,839	157	21,169
2017	7,972	9,429	1,470	180	268	1,853	158	21,329
2018	8,048	9,495	1,478	179	270	1,868	159	21,497
2019	8,127	9,563	1,484	179	272	1,882	160	21,667
2020	8,213	9,638	1,488	179	274	1,897	161	21,850

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.85%	4.13%	2.62%	-6.88%	-4.40%	2.77%	2.71%	2.77%
2000-2007	2.09%	0.61%	-3.23%	4.63%	11.76%	0.45%	6.38%	0.99%
2007-2010	-0.11%	0.46%	-3.02%	-1.92%	-8.60%	-0.17%	0.55%	-0.21%
2010-2020	0.91%	0.71%	1.08%	-0.38%	0.78%	0.92%	0.70%	0.82%

Form 1.2 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	14,926	1,058	15,985	529	0	529	15,455
1991	14,764	1,047	15,811	519	0	519	15,293
1992	15,665	1,111	16,775	480	0	480	16,295
1993	15,549	1,102	16,651	436	0	436	16,215
1994	15,791	1,120	16,910	430	0	430	16,480
1995	15,923	1,129	17,052	414	0	414	16,638
1996	16,437	1,165	17,602	409	0	409	17,193
1997	17,082	1,211	18,293	404	0	404	17,889
1998	17,630	1,250	18,880	383	0	383	18,497
1999	18,312	1,298	19,610	399	0	399	19,211
2000	19,294	1,368	20,662	370	0	370	20,292
2001	17,825	1,264	19,088	375	1	377	18,712
2002	18,267	1,295	19,562	533	3	536	19,026
2003	18,968	1,345	20,313	602	8	610	19,704
2004	19,908	1,412	21,320	666	13	679	20,641
2005	19,910	1,412	21,321	701	20	722	20,600
2006	20,851	1,478	22,329	707	29	736	21,593
2007	20,493	1,453	21,945	182	41	223	21,723
2008	20,361	1,444	21,804	205	67	271	21,533
2009	20,372	1,444	21,816	220	108	329	21,487
2010	20,502	1,454	21,955	237	123	360	21,596
2011	20,691	1,467	22,158	252	137	389	21,769
2012	20,959	1,486	22,445	268	150	418	22,027
2013	21,205	1,503	22,708	268	164	432	22,276
2014	21,434	1,520	22,954	268	178	446	22,508
2015	21,660	1,536	23,195	268	191	460	22,736
2016	21,890	1,552	23,442	268	205	473	22,969
2017	22,123	1,569	23,691	268	209	478	23,214
2018	22,364	1,586	23,949	268	214	482	23,467
2019	22,611	1,603	24,214	268	219	487	23,727
2020	22,871	1,622	24,493	268	223	492	24,001

Annual Growth Rates (%)

1990-2000	2.60%	2.60%	2.60%	-3.51%	0.00%	-3.51%	2.76%
2000-2007	0.86%	0.86%	0.86%	-9.68%	116.82%	-7.00%	0.98%
2007-2010	0.02%	0.02%	0.02%	9.22%	43.83%	17.27%	-0.19%
2010-2020	1.10%	1.10%	1.10%	1.27%	6.15%	3.18%	1.06%

loss factor 0.0709

Form 1.2 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	14,926	1,058	15,985	529	0	529	15,455
1991	14,764	1,047	15,811	519	0	519	15,293
1992	15,665	1,111	16,775	480	0	480	16,295
1993	15,549	1,102	16,651	436	0	436	16,215
1994	15,791	1,120	16,910	430	0	430	16,480
1995	15,923	1,129	17,052	414	0	414	16,638
1996	16,437	1,165	17,602	409	0	409	17,193
1997	17,082	1,211	18,293	404	0	404	17,889
1998	17,630	1,250	18,880	383	0	383	18,497
1999	18,312	1,298	19,610	399	0	399	19,211
2000	19,294	1,368	20,662	370	0	370	20,292
2001	17,825	1,264	19,088	375	1	377	18,712
2002	18,267	1,295	19,562	533	3	536	19,026
2003	18,968	1,345	20,313	602	8	610	19,704
2004	19,908	1,412	21,320	666	13	679	20,641
2005	19,910	1,412	21,321	701	20	722	20,600
2006	20,851	1,478	22,329	707	29	736	21,593
2007	20,493	1,453	21,945	182	41	223	21,723
2008	20,361	1,444	21,804	205	67	271	21,533
2009	20,372	1,444	21,816	220	108	329	21,487
2010	20,502	1,454	21,955	237	123	360	21,596
2011	20,673	1,466	22,139	252	137	389	21,750
2012	20,924	1,484	22,408	268	150	418	21,989
2013	21,151	1,500	22,651	268	164	432	22,219
2014	21,361	1,514	22,876	268	178	446	22,430
2015	21,568	1,529	23,097	268	191	460	22,637
2016	21,763	1,543	23,306	268	205	473	22,833
2017	21,958	1,557	23,515	268	209	478	23,037
2018	22,160	1,571	23,731	268	214	482	23,249
2019	22,369	1,586	23,955	268	219	487	23,468
2020	22,588	1,602	24,190	268	223	492	23,698

Annual Growth Rates (%)

1990-2000	2.60%	2.60%	2.60%	-3.51%	0.00%	-3.51%	2.76%
2000-2007	0.86%	0.86%	0.86%	-9.68%	116.82%	-7.00%	0.98%
2007-2010	0.02%	0.02%	0.02%	9.22%	43.83%	17.27%	-0.19%
2010-2020	0.97%	0.97%	0.97%	1.27%	6.15%	3.18%	0.93%

loss factor 0.0709

Form 1.2 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low High Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	14,926	1,058	15,985	529	0	529	15,455
1991	14,764	1,047	15,811	519	0	519	15,293
1992	15,665	1,111	16,775	480	0	480	16,295
1993	15,549	1,102	16,651	436	0	436	16,215
1994	15,791	1,120	16,910	430	0	430	16,480
1995	15,923	1,129	17,052	414	0	414	16,638
1996	16,437	1,165	17,602	409	0	409	17,193
1997	17,082	1,211	18,293	404	0	404	17,889
1998	17,630	1,250	18,880	383	0	383	18,497
1999	18,312	1,298	19,610	399	0	399	19,211
2000	19,294	1,368	20,662	370	0	370	20,292
2001	17,825	1,264	19,088	375	1	377	18,712
2002	18,267	1,295	19,562	533	3	536	19,026
2003	18,968	1,345	20,313	602	8	610	19,704
2004	19,908	1,412	21,320	666	13	679	20,641
2005	19,910	1,412	21,321	701	20	722	20,600
2006	20,851	1,478	22,329	707	29	736	21,593
2007	20,493	1,453	21,945	182	41	223	21,723
2008	20,361	1,444	21,804	205	67	271	21,533
2009	20,372	1,444	21,816	220	108	329	21,487
2010	20,502	1,454	21,955	237	123	360	21,596
2011	20,655	1,464	22,120	252	137	389	21,731
2012	20,890	1,481	22,371	268	150	418	21,953
2013	21,098	1,496	22,594	268	164	432	22,162
2014	21,290	1,509	22,800	268	178	446	22,354
2015	21,478	1,523	23,001	268	191	460	22,542
2016	21,643	1,534	23,177	268	205	473	22,704
2017	21,807	1,546	23,353	268	209	478	22,875
2018	21,979	1,558	23,537	268	214	482	23,055
2019	22,154	1,571	23,725	268	219	487	23,238
2020	22,342	1,584	23,926	268	223	492	23,434

Annual Growth Rates (%)

1990-2000	2.60%	2.60%	2.60%	-3.51%	0.00%	-3.51%	2.76%
2000-2007	0.86%	0.86%	0.86%	-9.68%	116.82%	-7.00%	0.98%
2007-2010	0.02%	0.02%	0.02%	9.22%	43.83%	17.27%	-0.19%
2010-2020	0.86%	0.86%	0.86%	1.27%	6.15%	3.18%	0.82%

loss factor 0.0709

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	901	1,275	361	27	217	2,780
1991	871	1,279	398	26	253	2,828
1992	1,131	1,343	358	20	224	3,076
1993	869	1,229	346	23	229	2,697
1994	1,152	1,354	336	27	238	3,107
1995	1,079	1,381	333	27	235	3,055
1996	1,064	1,442	336	30	232	3,105
1997	1,326	1,554	305	19	235	3,438
1998	1,347	1,651	398	27	271	3,695
1999	1,032	1,591	414	29	268	3,335
2000	1,019	1,596	342	26	245	3,230
2001	914	1,365	331	24	247	2,882
2002	1,037	1,592	362	27	276	3,294
2003	1,247	1,732	343	26	268	3,616
2004	1,371	1,784	322	27	260	3,764
2005	1,287	1,817	341	29	287	3,761
2006	1,567	1,928	324	33	290	4,143
2007	1,571	2,026	354	39	312	4,301
2008	1,724	1,927	298	27	274	4,251
2009	1,736	1,926	288	27	272	4,249
2010	1,767	1,933	290	27	275	4,293
2011	1,802	1,943	294	28	279	4,345
2012	1,837	1,961	301	28	283	4,410
2013	1,871	1,982	304	28	287	4,473
2014	1,905	2,005	306	28	289	4,533
2015	1,939	2,027	308	28	292	4,593
2016	1,973	2,048	310	28	294	4,653
2017	2,008	2,069	312	29	296	4,714
2018	2,043	2,091	313	29	299	4,775
2018	2,078	2,115	315	29	301	4,837
2020	2,115	2,139	315	29	303	4,902

Annual Growth Rates (%)

1990-2000	1.24%	2.28%	-0.52%	-0.34%	1.25%	1.51%
2000-2007	6.38%	3.46%	0.46%	5.95%	3.48%	4.18%
2007-2010	3.99%	-1.55%	-6.39%	-10.78%	-4.08%	-0.07%
2010-2020	1.81%	1.02%	0.83%	0.57%	0.98%	1.34%

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	901	1,275	361	27	217	2,780
1991	871	1,279	398	26	253	2,828
1992	1,131	1,343	358	20	224	3,076
1993	869	1,229	346	23	229	2,697
1994	1,152	1,354	336	27	238	3,107
1995	1,079	1,381	333	27	235	3,055
1996	1,064	1,442	336	30	232	3,105
1997	1,326	1,554	305	19	235	3,438
1998	1,347	1,651	398	27	271	3,695
1999	1,032	1,591	414	29	268	3,335
2000	1,019	1,596	342	26	245	3,230
2001	914	1,365	331	24	247	2,882
2002	1,037	1,592	362	27	276	3,294
2003	1,247	1,732	343	26	268	3,616
2004	1,371	1,784	322	27	260	3,764
2005	1,287	1,817	341	29	287	3,761
2006	1,567	1,928	324	33	290	4,143
2007	1,571	2,026	354	39	312	4,301
2008	1,724	1,927	298	27	274	4,251
2009	1,736	1,926	288	27	272	4,249
2010	1,767	1,933	290	27	275	4,293
2011	1,802	1,939	294	28	279	4,342
2012	1,837	1,954	301	28	283	4,403
2013	1,871	1,972	304	28	287	4,462
2014	1,905	1,991	306	28	289	4,518
2015	1,938	2,008	308	28	292	4,574
2016	1,972	2,023	310	28	294	4,628
2017	2,006	2,038	312	29	296	4,681
2018	2,041	2,053	313	29	299	4,735
2018	2,076	2,069	314	29	301	4,790
2020	2,113	2,086	315	29	303	4,846

Annual Growth Rates (%)

1990-2000	1.24%	2.28%	-0.52%	-0.34%	1.25%	1.51%
2000-2007	6.38%	3.46%	0.46%	5.95%	3.48%	4.18%
2007-2010	3.99%	-1.55%	-6.39%	-10.78%	-4.08%	-0.07%
2010-2020	1.80%	0.76%	0.83%	0.57%	0.98%	1.22%

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	901	1,275	361	27	217	2,780
1991	871	1,279	398	26	253	2,828
1992	1,131	1,343	358	20	224	3,076
1993	869	1,229	346	23	229	2,697
1994	1,152	1,354	336	27	238	3,107
1995	1,079	1,381	333	27	235	3,055
1996	1,064	1,442	336	30	232	3,105
1997	1,326	1,554	305	19	235	3,438
1998	1,347	1,651	398	27	271	3,695
1999	1,032	1,591	414	29	268	3,335
2000	1,019	1,596	342	26	245	3,230
2001	914	1,365	331	24	247	2,882
2002	1,037	1,592	362	27	276	3,294
2003	1,247	1,732	343	26	268	3,616
2004	1,371	1,784	322	27	260	3,764
2005	1,287	1,817	341	29	287	3,761
2006	1,567	1,928	324	33	290	4,143
2007	1,571	2,026	354	39	312	4,301
2008	1,724	1,927	298	27	274	4,251
2009	1,736	1,926	288	27	272	4,249
2010	1,767	1,933	290	27	275	4,293
2011	1,802	1,936	294	28	279	4,338
2012	1,837	1,948	301	28	283	4,396
2013	1,871	1,962	304	28	287	4,452
2014	1,904	1,977	306	28	289	4,504
2015	1,937	1,992	308	28	292	4,556
2016	1,971	2,000	310	28	294	4,604
2017	2,005	2,009	312	29	296	4,651
2018	2,040	2,019	313	29	299	4,699
2018	2,075	2,029	314	29	301	4,747
2020	2,111	2,040	315	29	303	4,798

Annual Growth Rates (%)

1990-2000	1.24%	2.28%	-0.52%	-0.34%	1.25%	1.51%
2000-2007	6.38%	3.46%	0.46%	5.95%	3.48%	4.18%
2007-2010	3.99%	-1.55%	-6.39%	-10.78%	-4.08%	-0.07%
2010-2020	1.79%	0.54%	0.82%	0.57%	0.98%	1.12%

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,780	258	3,038	89	0	89	2,949	60
1991	2,828	263	3,091	87	0	87	3,004	58
1992	3,076	288	3,364	81	0	81	3,283	57
1993	2,697	252	2,949	73	0	73	2,876	64
1994	3,107	291	3,398	72	0	72	3,326	56
1995	3,055	287	3,342	70	0	70	3,272	58
1996	3,105	291	3,396	69	0	69	3,328	59
1997	3,438	324	3,762	68	0	68	3,694	55
1998	3,695	349	4,044	64	0	64	3,979	53
1999	3,335	314	3,649	67	0	67	3,582	61
2000	3,230	304	3,534	62	0	62	3,471	67
2001	2,882	270	3,151	73	0	73	3,078	69
2002	3,294	307	3,600	98	1	99	3,501	62
2003	3,616	336	3,952	111	3	113	3,838	58
2004	3,764	348	4,111	137	4	141	3,970	59
2005	3,761	345	4,106	156	6	163	3,944	59
2006	4,143	383	4,527	139	9	149	4,378	56
2007	4,301	409	4,710	33	13	46	4,664	53
2008	4,251	403	4,654	36	21	57	4,596	53
2009	4,249	401	4,650	37	34	71	4,578	54
2010	4,293	405	4,698	38	39	77	4,621	53
2011	4,345	409	4,754	39	43	82	4,672	53
2012	4,410	415	4,825	40	48	88	4,738	53
2013	4,473	421	4,893	40	52	92	4,801	53
2014	4,533	426	4,959	40	56	96	4,863	53
2015	4,593	431	5,024	40	61	101	4,923	53
2016	4,653	437	5,090	40	65	105	4,985	53
2017	4,714	442	5,156	40	66	106	5,050	52
2018	4,775	448	5,223	40	68	108	5,115	52
2019	4,837	454	5,291	40	69	109	5,182	52
2020	4,902	460	5,362	40	71	111	5,251	52

Annual Growth Rates (%)

1990-2000	1.51%	1.64%	1.52%	-3.51%	0.00%	-3.50%	1.64%	1.12%
2000-2007	4.18%	4.31%	4.19%	-8.67%	0.00%	-4.22%	4.31%	-3.19%
2007-2010	-0.07%	-0.31%	-0.09%	5.02%	43.83%	18.75%	-0.31%	0.10%
2010-2020	1.34%	1.29%	1.33%	0.49%	6.15%	3.69%	1.29%	-0.23%

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,780	258	3,038	89	0	89	2,949	60
1991	2,828	263	3,091	87	0	87	3,004	58
1992	3,076	288	3,364	81	0	81	3,283	57
1993	2,697	252	2,949	73	0	73	2,876	64
1994	3,107	291	3,398	72	0	72	3,326	56
1995	3,055	287	3,342	70	0	70	3,272	58
1996	3,105	291	3,396	69	0	69	3,328	59
1997	3,438	324	3,762	68	0	68	3,694	55
1998	3,695	349	4,044	64	0	64	3,979	53
1999	3,335	314	3,649	67	0	67	3,582	61
2000	3,230	304	3,534	62	0	62	3,471	67
2001	2,882	270	3,151	73	0	73	3,078	69
2002	3,294	307	3,600	98	1	99	3,501	62
2003	3,616	336	3,952	111	3	113	3,838	58
2004	3,764	348	4,111	137	4	141	3,970	59
2005	3,761	345	4,106	156	6	163	3,944	59
2006	4,143	383	4,527	139	9	149	4,378	56
2007	4,301	409	4,710	33	13	46	4,664	53
2008	4,251	403	4,654	36	21	57	4,596	53
2009	4,249	401	4,650	37	34	71	4,578	54
2010	4,293	405	4,698	38	39	77	4,621	53
2011	4,342	409	4,751	39	43	82	4,668	53
2012	4,403	414	4,817	40	48	88	4,730	53
2013	4,462	420	4,882	40	52	92	4,790	53
2014	4,518	425	4,943	40	56	96	4,847	53
2015	4,574	429	5,003	40	61	101	4,903	53
2016	4,628	434	5,062	40	65	105	4,957	53
2017	4,681	439	5,120	40	66	106	5,014	52
2018	4,735	444	5,179	40	68	108	5,071	52
2019	4,790	449	5,239	40	69	109	5,130	52
2020	4,846	455	5,301	40	71	111	5,190	52

Annual Growth Rates (%)

1990-2000	1.51%	1.64%	1.52%	-3.51%	0.00%	-3.50%	1.64%	1.12%
2000-2007	4.18%	4.31%	4.19%	-8.67%	0.00%	-4.22%	4.31%	-3.19%
2007-2010	-0.07%	-0.31%	-0.09%	5.02%	43.83%	18.75%	-0.31%	0.10%
2010-2020	1.22%	1.17%	1.21%	0.49%	6.15%	3.69%	1.17%	-0.23%

Form 1.4 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	2,780	258	3,038	89	0	89	2,949	60
1991	2,828	263	3,091	87	0	87	3,004	58
1992	3,076	288	3,364	81	0	81	3,283	57
1993	2,697	252	2,949	73	0	73	2,876	64
1994	3,107	291	3,398	72	0	72	3,326	56
1995	3,055	287	3,342	70	0	70	3,272	58
1996	3,105	291	3,396	69	0	69	3,328	59
1997	3,438	324	3,762	68	0	68	3,694	55
1998	3,695	349	4,044	64	0	64	3,979	53
1999	3,335	314	3,649	67	0	67	3,582	61
2000	3,230	304	3,534	62	0	62	3,471	67
2001	2,882	270	3,151	73	0	73	3,078	69
2002	3,294	307	3,600	98	1	99	3,501	62
2003	3,616	336	3,952	111	3	113	3,838	58
2004	3,764	348	4,111	137	4	141	3,970	59
2005	3,761	345	4,106	156	6	163	3,944	59
2006	4,143	383	4,527	139	9	149	4,378	56
2007	4,301	409	4,710	33	13	46	4,664	53
2008	4,251	403	4,654	36	21	57	4,596	53
2009	4,249	401	4,650	37	34	71	4,578	54
2010	4,293	405	4,698	38	39	77	4,621	53
2011	4,338	409	4,747	39	43	82	4,664	53
2012	4,396	414	4,810	40	48	88	4,722	53
2013	4,452	419	4,870	40	52	92	4,778	53
2014	4,504	423	4,927	40	56	96	4,831	53
2015	4,556	428	4,984	40	61	101	4,884	53
2016	4,604	432	5,036	40	65	105	4,931	53
2017	4,651	436	5,087	40	66	106	4,981	52
2018	4,699	441	5,140	40	68	108	5,032	52
2019	4,747	445	5,192	40	69	109	5,083	52
2020	4,798	450	5,248	40	71	111	5,137	52
Annual Growth Rates (%)								
1990-2000	1.51%	1.64%	1.52%	-3.51%	0.00%	-3.50%	1.64%	1.12%
2000-2007	4.18%	4.31%	4.19%	-8.67%	0.00%	-4.22%	4.31%	-3.19%
2007-2010	-0.07%	-0.31%	-0.09%	5.02%	43.83%	18.75%	-0.31%	0.10%
2010-2020	1.12%	1.07%	1.11%	0.49%	6.15%	3.69%	1.07%	-0.23%

Form 1.5 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	4,578	4,974	5,087	5,184	1.087	1.111	1.132
2010	4,621	5,020	5,134	5,232	1.087	1.111	1.132
2011	4,672	5,076	5,191	5,290	1.087	1.111	1.132
2012	4,738	5,148	5,264	5,364	1.087	1.111	1.132
2013	4,801	5,217	5,334	5,436	1.087	1.111	1.132
2014	4,863	5,283	5,402	5,506	1.087	1.111	1.132
2015	4,923	5,349	5,470	5,575	1.087	1.111	1.132
2016	4,985	5,417	5,539	5,645	1.087	1.111	1.132
2017	5,050	5,487	5,611	5,718	1.087	1.111	1.132
2018	5,115	5,558	5,683	5,792	1.087	1.111	1.132
2019	5,182	5,630	5,757	5,867	1.087	1.111	1.132

Form 1.5 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	4,578	4,974	5,087	5,184	1.087	1.111	1.132
2010	4,621	5,020	5,134	5,232	1.087	1.111	1.132
2011	4,668	5,072	5,187	5,286	1.087	1.111	1.132
2012	4,730	5,139	5,255	5,355	1.087	1.111	1.132
2013	4,790	5,204	5,321	5,423	1.087	1.111	1.132
2014	4,847	5,266	5,385	5,488	1.087	1.111	1.132
2015	4,903	5,327	5,447	5,551	1.087	1.111	1.132
2016	4,957	5,386	5,508	5,613	1.087	1.111	1.132
2017	5,014	5,448	5,570	5,677	1.087	1.111	1.132
2018	5,071	5,510	5,634	5,742	1.087	1.111	1.132
2019	5,130	5,573	5,699	5,808	1.087	1.111	1.132

Form 1.5 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	4,578	4,974	5,087	5,184	1.087	1.111	1.132
2010	4,621	5,020	5,134	5,232	1.087	1.111	1.132
2011	4,664	5,068	5,182	5,281	1.087	1.111	1.132
2012	4,722	5,131	5,247	5,347	1.087	1.111	1.132
2013	4,778	5,192	5,309	5,410	1.087	1.111	1.132
2014	4,831	5,249	5,367	5,470	1.087	1.111	1.132
2015	4,884	5,306	5,426	5,530	1.087	1.111	1.132
2016	4,931	5,358	5,479	5,583	1.087	1.111	1.132
2017	4,981	5,412	5,534	5,640	1.087	1.111	1.132
2018	5,032	5,467	5,591	5,698	1.087	1.111	1.132
2019	5,083	5,523	5,648	5,756	1.087	1.111	1.132

Form 1.7a - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Private Supply by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	0	178	229	0	1	122	0	529
1991	0	162	234	0	1	122	0	519
1992	0	144	224	0	1	111	0	480
1993	0	146	202	0	0	88	0	436
1994	0	152	187	0	0	92	0	430
1995	0	149	181	0	0	84	0	414
1996	0	149	181	0	0	79	0	409
1997	0	150	173	0	0	81	0	404
1998	0	143	161	0	0	78	0	383
1999	0	146	172	0	0	81	0	399
2000	0	139	151	0	0	80	0	370
2001	1	260	116	0	0	0	0	377
2002	2	404	129	0	1	0	0	536
2003	3	449	155	0	1	2	0	610
2004	5	513	157	1	1	3	0	679
2005	6	548	162	1	1	4	0	722
2006	8	560	156	1	2	9	0	736
2007	12	107	88	1	2	14	0	223
2008	17	127	108	1	2	17	0	271
2009	27	172	108	1	2	19	0	329
2010	31	196	108	1	2	22	0	360
2011	35	219	108	1	2	24	0	389
2012	39	242	108	1	2	27	0	418
2013	42	252	108	1	2	27	0	432
2014	46	262	108	1	2	27	0	446
2015	50	272	108	1	2	27	0	460
2016	53	282	108	1	2	27	0	473
2017	55	286	108	1	2	27	0	478
2018	56	289	108	1	2	27	0	482
2019	57	293	108	1	2	27	0	487
2020	58	296	108	1	2	27	0	492

Annual Growth Rates (%)

1990-2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000-2007	90.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-7.00%
2007-2010	37.27%	22.46%	7.03%	0.28%	0.43%	16.96%	0.00%	17.27%
2010-2020	6.38%	4.23%	0.01%	0.05%	0.02%	2.06%	0.00%	3.18%

Form 2.2 - SDG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Planning Area Economic and Demographic Assumptions

Year	Household Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	2,549,875	946,084	2.70	82,398	12,358	386
1991	2,604,754	964,042	2.70	82,072	11,309	406
1992	2,653,615	977,591	2.71	83,705	10,612	420
1993	2,670,770	988,476	2.70	83,355	9,901	428
1994	2,688,860	998,758	2.69	84,225	10,007	434
1995	2,699,012	1,008,967	2.68	86,001	10,506	441
1996	2,714,332	1,019,262	2.66	89,977	10,951	448
1997	2,780,839	1,032,431	2.69	95,158	13,124	455
1998	2,842,512	1,047,694	2.71	104,464	15,517	463
1999	2,908,551	1,064,929	2.73	111,398	18,051	476
2000	2,975,571	1,078,340	2.76	119,865	21,543	492
2001	3,056,469	1,095,164	2.79	123,177	20,362	509
2002	3,119,440	1,112,325	2.80	126,323	19,633	524
2003	3,174,019	1,128,324	2.81	129,138	20,512	537
2004	3,215,424	1,144,239	2.81	135,963	22,227	549
2005	3,248,170	1,160,177	2.80	138,892	25,158	562
2006	3,287,461	1,174,133	2.80	145,229	25,919	569
2007	3,334,445	1,185,890	2.81	149,084	24,081	580
2008	3,373,797	1,198,164	2.82	148,129	23,450	590
2009	3,413,589	1,210,551	2.82	147,836	22,925	600
2010	3,449,856	1,221,774	2.82	150,661	23,057	609
2011	3,486,498	1,233,098	2.83	155,631	23,649	619
2012	3,523,513	1,244,523	2.83	160,426	24,447	631
2013	3,560,913	1,256,047	2.84	164,758	24,890	643
2014	3,598,695	1,267,674	2.84	168,788	25,160	655
2015	3,636,865	1,279,405	2.84	172,507	25,475	667
2016	3,675,426	1,291,237	2.85	176,245	25,854	678
2017	3,714,384	1,303,171	2.85	180,012	26,237	689
2018	3,753,745	1,315,213	2.85	183,767	26,596	700
2019	3,793,509	1,327,362	2.86	187,440	26,921	711
2020	3,833,685	1,339,621	2.86	191,166	27,193	722
Annual Growth Rates (%)						
1990-2000	1.56%	1.32%	0.24%	3.82%	0.00%	2.46%
2000-2007	1.64%	1.37%	0.27%	3.17%	0.00%	2.36%
2007-2010	1.14%	1.00%	0.14%	0.35%	-1.44%	1.66%
2010-2020	1.06%	0.93%	0.13%	2.41%	1.66%	1.71%

Form 2.3 Electricity Prices - SDGE									
	residential			commercial			industrial		
YEAR	low rate	mid rate	high rate	low rate	mid rate	high rate	low rate	mid rate	high rate
1980	15.64	15.64	15.64	15.75	15.75	15.75	16.66	16.66	16.66
1981	16.07	16.07	16.07	13.64	13.64	13.64	17.20	17.20	17.20
1982	19.15	19.15	19.15	16.55	16.55	16.55	21.10	21.10	21.10
1983	19.14	19.14	19.14	15.53	15.53	15.53	21.40	21.40	21.40
1984	17.91	17.91	17.91	15.68	15.68	15.68	21.05	21.05	21.05
1985	18.88	18.88	18.88	15.20	15.20	15.20	22.26	22.26	22.26
1986	16.85	16.85	16.85	14.46	14.46	14.46	17.76	17.76	17.76
1987	15.38	15.38	15.38	15.11	15.11	15.11	14.86	14.86	14.86
1988	15.06	15.06	15.06	16.12	16.12	16.12	12.15	12.15	12.15
1989	14.63	14.63	14.63	16.21	16.21	16.21	11.06	11.06	11.06
1990	13.59	13.59	13.59	16.07	16.07	16.07	10.45	10.45	10.45
1991	13.22	13.22	13.22	15.56	15.56	15.56	10.27	10.27	10.27
1992	13.17	13.17	13.17	15.71	15.71	15.71	9.73	9.73	9.73
1993	13.32	13.32	13.32	16.27	16.27	16.27	9.29	9.29	9.29
1994	12.58	12.58	12.58	16.77	16.77	16.77	9.40	9.40	9.40
1995	12.26	12.26	12.26	16.27	16.27	16.27	9.27	9.27	9.27
1996	13.71	13.71	13.71	15.82	15.82	15.82	8.89	8.89	8.89
1997	13.49	13.49	13.49	12.77	12.77	12.77	8.91	8.91	8.91
1998	12.13	12.13	12.13	13.67	13.67	13.67	8.98	8.98	8.98
1999	11.61	11.61	11.61	13.48	13.48	13.48	9.00	9.00	9.00
2000	14.95	14.95	14.95	13.19	13.19	13.19	13.87	13.87	13.87
2001	14.34	14.34	14.34	15.96	15.96	15.96	18.18	18.18	18.18
2002	13.52	13.52	13.52	15.03	15.03	15.03	19.23	19.23	19.23
2003	14.02	14.02	14.02	14.28	14.28	14.28	14.09	14.09	14.09
2004	16.44	16.44	16.44	13.53	13.53	13.53	13.41	13.41	13.41
2005	16.37	16.37	16.37	13.25	13.25	13.25	9.82	9.82	9.82
2006	18.19	18.19	18.19	12.96	12.96	12.96	11.43	11.43	11.43
2007	16.96	16.96	16.96	13.85	13.85	13.85	12.44	12.44	12.44
2008	15.95	15.95	15.95	13.85	13.85	13.85	13.51	13.51	13.51
2009	15.95	15.95	15.95	13.85	13.85	13.85	13.51	13.51	13.51
2010	15.95	15.95	15.95	13.85	13.85	13.85	13.51	13.51	13.51
2011	15.95	16.11	16.26	13.85	13.99	14.12	13.51	13.64	13.77
2012	15.95	16.26	16.57	13.85	14.13	14.39	13.51	13.77	14.03
2013	15.95	16.42	16.89	13.85	14.27	14.67	13.51	13.91	14.30
2014	15.95	16.59	17.21	13.85	14.41	14.95	13.51	14.05	14.58
2015	15.95	16.75	17.55	13.85	14.55	15.24	13.51	14.18	14.86
2016	15.95	17.06	18.14	13.85	14.81	15.76	13.51	14.44	15.36
2017	15.95	17.37	18.76	13.85	15.09	16.29	13.51	14.71	15.89
2018	15.95	17.69	19.39	13.85	15.36	16.85	13.51	14.98	16.43
2019	15.95	18.01	20.05	13.85	15.65	17.42	13.51	15.25	16.98
2020	15.95	18.34	20.74	13.85	15.93	18.01	13.51	15.53	17.56

Form 1.1 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	23,684	25,308	20,028	3,361	5,173	3,884	632	82,069
1991	23,039	25,227	19,464	3,251	5,160	3,871	632	80,642
1992	24,210	26,398	19,539	3,031	4,456	4,080	678	82,392
1993	23,362	26,504	19,294	2,883	4,864	4,056	666	81,629
1994	24,190	26,916	19,347	2,765	5,348	3,969	659	83,195
1995	24,097	27,225	19,818	3,118	4,475	4,138	616	83,487
1996	24,738	28,219	20,257	3,183	5,042	4,125	633	86,197
1997	25,270	29,160	20,793	3,232	5,225	4,702	647	89,029
1998	25,749	31,220	19,705	2,910	4,191	4,669	677	89,120
1999	25,726	31,779	21,512	2,536	4,570	4,720	650	91,491
2000	27,980	34,796	22,475	3,047	5,140	5,035	674	99,146
2001	25,970	32,783	19,528	2,595	5,212	4,166	700	90,955
2002	26,577	33,111	20,714	2,662	5,369	4,078	706	93,218
2003	28,426	35,585	18,929	2,750	4,050	4,366	700	94,807
2004	29,463	35,860	19,332	3,282	4,454	4,452	704	97,548
2005	30,199	36,156	19,373	3,282	4,555	4,991	705	99,261
2006	32,093	37,652	18,870	3,212	4,296	4,932	706	101,762
2007	31,929	36,421	18,892	2,826	4,859	4,990	720	100,636
2008	31,456	37,091	18,237	2,798	4,514	4,956	728	99,780
2009	31,171	36,183	17,811	2,804	4,400	4,916	731	98,017
2010	31,264	36,201	17,896	2,810	4,340	4,947	734	98,190
2011	31,556	36,339	18,066	2,849	4,281	5,030	737	98,857
2012	31,915	36,696	18,460	2,887	4,284	5,114	740	100,096
2013	32,255	37,095	18,596	2,911	4,289	5,187	742	101,074
2014	32,590	37,533	18,604	2,927	4,293	5,230	745	101,923
2015	32,916	37,969	18,619	2,946	4,298	5,264	748	102,761
2016	33,273	38,395	18,640	2,965	4,302	5,297	751	103,622
2017	33,670	38,816	18,623	2,984	4,306	5,330	754	104,483
2018	34,100	39,247	18,595	3,003	4,311	5,361	757	105,372
2019	34,560	39,691	18,543	3,021	4,315	5,389	760	106,278
2020	35,073	40,153	18,469	3,035	4,321	5,418	762	107,231

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.24%	1.16%	-0.98%	-0.06%	2.63%	0.65%	1.91%
2000-2007	1.90%	0.65%	-2.45%	-1.07%	-0.80%	-0.13%	0.94%	0.21%
2007-2010	-0.70%	-0.20%	-1.79%	-0.20%	-3.70%	-0.29%	0.66%	-0.82%
2010-2020	1.16%	1.04%	0.32%	0.78%	-0.04%	0.91%	0.38%	0.88%

Form 1.1 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	23,684	25,308	20,028	3,361	5,173	3,884	632	82,069
1991	23,039	25,227	19,464	3,251	5,160	3,871	632	80,642
1992	24,210	26,398	19,539	3,031	4,456	4,080	678	82,392
1993	23,362	26,504	19,294	2,883	4,864	4,056	666	81,629
1994	24,190	26,916	19,347	2,765	5,348	3,969	659	83,195
1995	24,097	27,225	19,818	3,118	4,475	4,138	616	83,487
1996	24,738	28,219	20,257	3,183	5,042	4,125	633	86,197
1997	25,270	29,160	20,793	3,232	5,225	4,702	647	89,029
1998	25,749	31,220	19,705	2,910	4,191	4,669	677	89,120
1999	25,726	31,779	21,512	2,536	4,570	4,720	650	91,491
2000	27,980	34,796	22,475	3,047	5,140	5,035	674	99,146
2001	25,970	32,783	19,528	2,595	5,212	4,166	700	90,955
2002	26,577	33,111	20,714	2,662	5,369	4,078	706	93,218
2003	28,426	35,585	18,929	2,750	4,050	4,366	700	94,807
2004	29,463	35,860	19,332	3,282	4,454	4,452	704	97,548
2005	30,199	36,156	19,373	3,282	4,555	4,991	705	99,261
2006	32,093	37,652	18,870	3,212	4,296	4,932	706	101,762
2007	31,929	36,421	18,892	2,826	4,859	4,990	720	100,636
2008	31,456	37,091	18,237	2,798	4,514	4,956	728	99,780
2009	31,171	36,183	17,811	2,804	4,400	4,916	731	98,017
2010	31,264	36,201	17,896	2,810	4,340	4,947	734	98,190
2011	31,553	36,274	18,066	2,849	4,281	5,030	737	98,789
2012	31,909	36,566	18,457	2,887	4,284	5,114	740	99,957
2013	32,246	36,899	18,590	2,911	4,289	5,187	742	100,863
2014	32,577	37,265	18,596	2,927	4,293	5,230	745	101,634
2015	32,901	37,633	18,605	2,946	4,298	5,264	748	102,394
2016	33,251	37,925	18,615	2,965	4,302	5,297	751	103,105
2017	33,641	38,213	18,580	2,984	4,306	5,330	754	103,807
2018	34,064	38,509	18,525	3,002	4,311	5,361	757	104,528
2019	34,516	38,814	18,445	3,020	4,315	5,389	760	105,259
2020	35,022	39,130	18,338	3,034	4,321	5,418	762	106,025

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.24%	1.16%	-0.98%	-0.06%	2.63%	0.65%	1.91%
2000-2007	1.90%	0.65%	-2.45%	-1.07%	-0.80%	-0.13%	0.94%	0.21%
2007-2010	-0.70%	-0.20%	-1.79%	-0.20%	-3.70%	-0.29%	0.66%	-0.82%
2010-2020	1.14%	0.78%	0.24%	0.77%	-0.04%	0.91%	0.38%	0.77%

Form 1.1 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	23,684	25,308	20,028	3,361	5,173	3,884	632	82,069
1991	23,039	25,227	19,464	3,251	5,160	3,871	632	80,642
1992	24,210	26,398	19,539	3,031	4,456	4,080	678	82,392
1993	23,362	26,504	19,294	2,883	4,864	4,056	666	81,629
1994	24,190	26,916	19,347	2,765	5,348	3,969	659	83,195
1995	24,097	27,225	19,818	3,118	4,475	4,138	616	83,487
1996	24,738	28,219	20,257	3,183	5,042	4,125	633	86,197
1997	25,270	29,160	20,793	3,232	5,225	4,702	647	89,029
1998	25,749	31,220	19,705	2,910	4,191	4,669	677	89,120
1999	25,726	31,779	21,512	2,536	4,570	4,720	650	91,491
2000	27,980	34,796	22,475	3,047	5,140	5,035	674	99,146
2001	25,970	32,783	19,528	2,595	5,212	4,166	700	90,955
2002	26,577	33,111	20,714	2,662	5,369	4,078	706	93,218
2003	28,426	35,585	18,929	2,750	4,050	4,366	700	94,807
2004	29,463	35,860	19,332	3,282	4,454	4,452	704	97,548
2005	30,199	36,156	19,373	3,282	4,555	4,991	705	99,261
2006	32,093	37,652	18,870	3,212	4,296	4,932	706	101,762
2007	31,929	36,421	18,892	2,826	4,859	4,990	720	100,636
2008	31,456	37,091	18,237	2,798	4,514	4,956	728	99,780
2009	31,171	36,183	17,811	2,804	4,400	4,916	731	98,017
2010	31,264	36,201	17,896	2,810	4,340	4,947	734	98,190
2011	31,551	36,214	18,067	2,848	4,281	5,030	737	98,727
2012	31,904	36,442	18,460	2,887	4,284	5,114	740	99,831
2013	32,238	36,707	18,592	2,910	4,289	5,187	742	100,665
2014	32,566	37,011	18,593	2,927	4,293	5,230	745	101,364
2015	32,885	37,307	18,592	2,946	4,298	5,264	748	102,040
2016	33,230	37,492	18,588	2,964	4,302	5,297	751	102,624
2017	33,614	37,667	18,537	2,983	4,306	5,330	754	103,192
2018	34,031	37,847	18,461	3,001	4,311	5,361	757	103,768
2019	34,477	38,034	18,355	3,019	4,315	5,389	760	104,349
2020	34,976	38,233	18,223	3,033	4,321	5,418	762	104,966

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.24%	1.16%	-0.98%	-0.06%	2.63%	0.65%	1.91%
2000-2007	1.90%	0.65%	-2.45%	-1.07%	-0.80%	-0.13%	0.94%	0.21%
2007-2010	-0.70%	-0.20%	-1.79%	-0.20%	-3.70%	-0.29%	0.66%	-0.82%
2010-2020	1.13%	0.55%	0.18%	0.77%	-0.04%	0.91%	0.38%	0.67%

Form 1.1b - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	23,684	24,848	17,550	3,102	5,163	3,717	632	78,697
1991	23,039	24,753	16,980	2,960	5,150	3,699	632	77,213
1992	24,210	25,893	17,045	2,735	4,446	3,906	678	78,911
1993	23,362	25,965	16,724	2,662	4,851	3,802	666	78,032
1994	24,190	26,374	16,763	2,535	5,336	3,707	659	79,564
1995	24,097	26,675	17,204	2,871	4,463	3,872	616	79,799
1996	24,738	27,668	17,609	2,937	5,029	3,859	633	82,473
1997	25,270	28,586	17,970	2,972	5,213	4,424	647	85,082
1998	25,749	30,603	16,738	2,633	4,179	4,380	677	84,959
1999	25,725	31,138	18,476	2,239	4,570	4,419	650	87,217
2000	27,980	34,147	19,392	2,770	5,140	4,723	674	94,825
2001	25,969	32,416	17,158	1,950	5,212	4,166	700	87,572
2002	26,575	32,572	17,689	1,938	5,369	4,078	706	88,928
2003	28,422	35,001	15,873	1,989	4,050	4,360	700	90,394
2004	29,455	35,348	16,669	2,515	4,454	4,442	704	93,588
2005	30,189	35,661	16,696	2,543	4,550	4,976	705	95,320
2006	32,080	37,217	16,238	2,547	4,290	4,912	706	97,990
2007	31,910	36,125	16,382	2,275	4,852	4,968	720	97,232
2008	31,423	36,689	15,714	2,244	4,505	4,923	728	96,226
2009	31,113	35,673	15,278	2,250	4,390	4,874	731	94,309
2010	31,195	35,650	15,353	2,255	4,329	4,896	734	94,411
2011	31,478	35,747	15,514	2,294	4,269	4,970	737	95,008
2012	31,827	36,064	15,898	2,332	4,272	5,045	740	96,177
2013	32,158	36,436	16,034	2,356	4,275	5,116	742	97,117
2014	32,483	36,848	16,041	2,373	4,279	5,158	745	97,927
2015	32,800	37,257	16,055	2,391	4,283	5,192	748	98,727
2016	33,147	37,655	16,076	2,410	4,286	5,223	751	99,550
2017	33,541	38,067	16,059	2,429	4,291	5,257	754	100,397
2018	33,968	38,488	16,031	2,448	4,295	5,287	757	101,274
2019	34,425	38,922	15,979	2,466	4,300	5,315	760	102,167
2020	34,935	39,373	15,905	2,481	4,305	5,344	762	103,106

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.23%	1.00%	-1.12%	-0.05%	2.42%	0.65%	1.88%
2000-2007	1.90%	0.81%	-2.38%	-2.77%	-0.82%	0.73%	0.94%	0.36%
2007-2010	-0.75%	-0.44%	-2.14%	-0.30%	-3.73%	-0.49%	0.66%	-0.98%
2010-2020	1.14%	1.00%	0.35%	0.96%	-0.06%	0.88%	0.38%	0.88%

Form 1.1b - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	23,684	24,848	17,550	3,102	5,163	3,717	632	78,697
1991	23,039	24,753	16,980	2,960	5,150	3,699	632	77,213
1992	24,210	25,893	17,045	2,735	4,446	3,906	678	78,911
1993	23,362	25,965	16,724	2,662	4,851	3,802	666	78,032
1994	24,190	26,374	16,763	2,535	5,336	3,707	659	79,564
1995	24,097	26,675	17,204	2,871	4,463	3,872	616	79,799
1996	24,738	27,668	17,609	2,937	5,029	3,859	633	82,473
1997	25,270	28,586	17,970	2,972	5,213	4,424	647	85,082
1998	25,749	30,603	16,738	2,633	4,179	4,380	677	84,959
1999	25,725	31,138	18,476	2,239	4,570	4,419	650	87,217
2000	27,980	34,147	19,392	2,770	5,140	4,723	674	94,825
2001	25,969	32,416	17,158	1,950	5,212	4,166	700	87,572
2002	26,575	32,572	17,689	1,938	5,369	4,078	706	88,928
2003	28,422	35,001	15,873	1,989	4,050	4,360	700	90,394
2004	29,455	35,348	16,669	2,515	4,454	4,442	704	93,588
2005	30,189	35,661	16,696	2,543	4,550	4,976	705	95,320
2006	32,080	37,217	16,238	2,547	4,290	4,912	706	97,990
2007	31,910	36,125	16,382	2,275	4,852	4,968	720	97,232
2008	31,423	36,689	15,714	2,244	4,505	4,923	728	96,226
2009	31,113	35,673	15,278	2,250	4,390	4,874	731	94,309
2010	31,195	35,650	15,353	2,255	4,329	4,896	734	94,411
2011	31,475	35,683	15,513	2,294	4,269	4,970	737	94,940
2012	31,822	35,934	15,895	2,332	4,272	5,045	740	96,039
2013	32,149	36,240	16,027	2,356	4,275	5,116	742	96,906
2014	32,471	36,580	16,033	2,373	4,279	5,158	745	97,639
2015	32,784	36,920	16,041	2,391	4,283	5,192	748	98,360
2016	33,125	37,186	16,051	2,410	4,286	5,223	751	99,033
2017	33,512	37,464	16,016	2,429	4,291	5,257	754	99,722
2018	33,932	37,750	15,961	2,447	4,295	5,287	757	100,429
2019	34,382	38,045	15,881	2,465	4,300	5,315	760	101,147
2020	34,884	38,351	15,774	2,480	4,305	5,344	762	101,900

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.23%	1.00%	-1.12%	-0.05%	2.42%	0.65%	1.88%
2000-2007	1.90%	0.81%	-2.38%	-2.77%	-0.82%	0.73%	0.94%	0.36%
2007-2010	-0.75%	-0.44%	-2.14%	-0.30%	-3.73%	-0.49%	0.66%	-0.98%
2010-2020	1.12%	0.73%	0.27%	0.95%	-0.06%	0.88%	0.38%	0.77%

Form 1.1b - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	23,684	24,848	17,550	3,102	5,163	3,717	632	78,697
1991	23,039	24,753	16,980	2,960	5,150	3,699	632	77,213
1992	24,210	25,893	17,045	2,735	4,446	3,906	678	78,911
1993	23,362	25,965	16,724	2,662	4,851	3,802	666	78,032
1994	24,190	26,374	16,763	2,535	5,336	3,707	659	79,564
1995	24,097	26,675	17,204	2,871	4,463	3,872	616	79,799
1996	24,738	27,668	17,609	2,937	5,029	3,859	633	82,473
1997	25,270	28,586	17,970	2,972	5,213	4,424	647	85,082
1998	25,749	30,603	16,738	2,633	4,179	4,380	677	84,959
1999	25,725	31,138	18,476	2,239	4,570	4,419	650	87,217
2000	27,980	34,147	19,392	2,770	5,140	4,723	674	94,825
2001	25,969	32,416	17,158	1,950	5,212	4,166	700	87,572
2002	26,575	32,572	17,689	1,938	5,369	4,078	706	88,928
2003	28,422	35,001	15,873	1,989	4,050	4,360	700	90,394
2004	29,455	35,348	16,669	2,515	4,454	4,442	704	93,588
2005	30,189	35,661	16,696	2,543	4,550	4,976	705	95,320
2006	32,080	37,217	16,238	2,547	4,290	4,912	706	97,990
2007	31,910	36,125	16,382	2,275	4,852	4,968	720	97,232
2008	31,423	36,689	15,714	2,244	4,505	4,923	728	96,226
2009	31,113	35,673	15,278	2,250	4,390	4,874	731	94,309
2010	31,195	35,650	15,353	2,255	4,329	4,896	734	94,411
2011	31,472	35,623	15,514	2,294	4,269	4,970	737	94,879
2012	31,816	35,810	15,898	2,332	4,272	5,045	740	95,912
2013	32,140	36,048	16,030	2,356	4,275	5,116	742	96,708
2014	32,459	36,325	16,030	2,372	4,279	5,158	745	97,369
2015	32,769	36,594	16,029	2,391	4,283	5,192	748	98,006
2016	33,105	36,753	16,024	2,410	4,286	5,223	751	98,551
2017	33,485	36,918	15,973	2,428	4,291	5,257	754	99,106
2018	33,899	37,088	15,897	2,446	4,295	5,287	757	99,670
2019	34,343	37,265	15,791	2,465	4,300	5,315	760	100,238
2020	34,838	37,454	15,659	2,478	4,305	5,344	762	100,841

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.68%	3.23%	1.00%	-1.12%	-0.05%	2.42%	0.65%	1.88%
2000-2007	1.90%	0.81%	-2.38%	-2.77%	-0.82%	0.73%	0.94%	0.36%
2007-2010	-0.75%	-0.44%	-2.14%	-0.30%	-3.73%	-0.49%	0.66%	-0.98%
2010-2020	1.11%	0.49%	0.20%	0.95%	-0.06%	0.88%	0.38%	0.66%

Form 1.2 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	82,069	5,581	87,649	3,372	0	3,372	84,277
1991	80,642	5,484	86,126	3,429	0	3,429	82,697
1992	82,392	5,603	87,994	3,480	0	3,480	84,514
1993	81,629	5,551	87,180	3,597	0	3,597	83,583
1994	83,195	5,657	88,852	3,631	0	3,631	85,221
1995	83,487	5,677	89,164	3,689	0	3,689	85,476
1996	86,197	5,861	92,058	3,724	0	3,724	88,334
1997	89,029	6,054	95,083	3,948	0	3,948	91,136
1998	89,120	6,060	95,180	4,161	0	4,161	91,019
1999	91,491	6,221	97,712	4,273	0	4,274	93,439
2000	99,146	6,742	105,888	4,321	0	4,321	101,567
2001	90,955	6,185	97,140	3,381	2	3,383	93,757
2002	93,218	6,339	99,557	4,286	5	4,291	95,267
2003	94,807	6,447	101,253	4,397	15	4,412	96,841
2004	97,548	6,633	104,181	3,934	26	3,960	100,221
2005	99,261	6,750	106,011	3,900	41	3,941	102,069
2006	101,762	6,920	108,682	3,715	57	3,772	104,910
2007	100,636	6,843	107,480	3,327	77	3,404	104,076
2008	99,780	6,785	106,565	3,398	155	3,553	103,011
2009	98,017	6,665	104,682	3,431	277	3,708	100,974
2010	98,190	6,677	104,867	3,462	317	3,779	101,088
2011	98,857	6,722	105,579	3,494	355	3,849	101,731
2012	100,096	6,807	106,902	3,526	393	3,918	102,984
2013	101,074	6,873	107,947	3,526	431	3,957	103,990
2014	101,923	6,931	108,853	3,527	469	3,995	104,858
2015	102,761	6,988	109,748	3,527	507	4,034	105,714
2016	103,622	7,046	110,668	3,528	545	4,073	106,596
2017	104,483	7,105	111,588	3,529	557	4,085	107,502
2018	105,372	7,165	112,537	3,529	569	4,098	108,439
2019	106,278	7,227	113,505	3,530	582	4,112	109,394
2020	107,231	7,292	114,523	3,531	595	4,125	110,397

Annual Growth Rates (%)

1990-2000	1.91%	1.91%	1.91%	2.51%	0.00%	2.51%	1.88%
2000-2007	0.21%	0.21%	0.21%	-3.66%	105.67%	-3.35%	0.35%
2007-2010	-0.82%	-0.82%	-0.82%	1.34%	60.29%	3.54%	-0.97%
2010-2020	0.88%	0.88%	0.88%	0.20%	6.51%	0.88%	0.88%

loss factor 0.0680

Form 1.2 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	82,069	5,581	87,649	3,372	0	3,372	84,277
1991	80,642	5,484	86,126	3,429	0	3,429	82,697
1992	82,392	5,603	87,994	3,480	0	3,480	84,514
1993	81,629	5,551	87,180	3,597	0	3,597	83,583
1994	83,195	5,657	88,852	3,631	0	3,631	85,221
1995	83,487	5,677	89,164	3,689	0	3,689	85,476
1996	86,197	5,861	92,058	3,724	0	3,724	88,334
1997	89,029	6,054	95,083	3,948	0	3,948	91,136
1998	89,120	6,060	95,180	4,161	0	4,161	91,019
1999	91,491	6,221	97,712	4,273	0	4,274	93,439
2000	99,146	6,742	105,888	4,321	0	4,321	101,567
2001	90,955	6,185	97,140	3,381	2	3,383	93,757
2002	93,218	6,339	99,557	4,286	5	4,291	95,267
2003	94,807	6,447	101,253	4,397	15	4,412	96,841
2004	97,548	6,633	104,181	3,934	26	3,960	100,221
2005	99,261	6,750	106,011	3,900	41	3,941	102,069
2006	101,762	6,920	108,682	3,715	57	3,772	104,910
2007	100,636	6,843	107,480	3,327	77	3,404	104,076
2008	99,780	6,785	106,565	3,398	155	3,553	103,011
2009	98,017	6,665	104,682	3,431	277	3,708	100,974
2010	98,190	6,677	104,867	3,462	317	3,779	101,088
2011	98,789	6,718	105,507	3,494	355	3,849	101,658
2012	99,957	6,797	106,754	3,526	393	3,918	102,836
2013	100,863	6,859	107,722	3,526	431	3,957	103,765
2014	101,634	6,911	108,545	3,527	469	3,995	104,550
2015	102,394	6,963	109,357	3,527	507	4,034	105,323
2016	103,105	7,011	110,117	3,528	545	4,073	106,044
2017	103,807	7,059	110,866	3,529	557	4,085	106,781
2018	104,528	7,108	111,635	3,529	569	4,098	107,537
2019	105,259	7,158	112,416	3,530	582	4,112	108,305
2020	106,025	7,210	113,235	3,531	595	4,125	109,110

Annual Growth Rates (%)

1990-2000	1.91%	1.91%	1.91%	2.51%	0.00%	2.51%	1.88%
2000-2007	0.21%	0.21%	0.21%	-3.66%	105.67%	-3.35%	0.35%
2007-2010	-0.82%	-0.82%	-0.82%	1.34%	60.29%	3.54%	-0.97%
2010-2020	0.77%	0.77%	0.77%	0.20%	6.51%	0.88%	0.77%

loss factor 0.0680

Form 1.2 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	82,069	5,581	87,649	3,372	0	3,372	84,277
1991	80,642	5,484	86,126	3,429	0	3,429	82,697
1992	82,392	5,603	87,994	3,480	0	3,480	84,514
1993	81,629	5,551	87,180	3,597	0	3,597	83,583
1994	83,195	5,657	88,852	3,631	0	3,631	85,221
1995	83,487	5,677	89,164	3,689	0	3,689	85,476
1996	86,197	5,861	92,058	3,724	0	3,724	88,334
1997	89,029	6,054	95,083	3,948	0	3,948	91,136
1998	89,120	6,060	95,180	4,161	0	4,161	91,019
1999	91,491	6,221	97,712	4,273	0	4,274	93,439
2000	99,146	6,742	105,888	4,321	0	4,321	101,567
2001	90,955	6,185	97,140	3,381	2	3,383	93,757
2002	93,218	6,339	99,557	4,286	5	4,291	95,267
2003	94,807	6,447	101,253	4,397	15	4,412	96,841
2004	97,548	6,633	104,181	3,934	26	3,960	100,221
2005	99,261	6,750	106,011	3,900	41	3,941	102,069
2006	101,762	6,920	108,682	3,715	57	3,772	104,910
2007	100,636	6,843	107,480	3,327	77	3,404	104,076
2008	99,780	6,785	106,565	3,398	155	3,553	103,011
2009	98,017	6,665	104,682	3,431	277	3,708	100,974
2010	98,190	6,677	104,867	3,462	317	3,779	101,088
2011	98,727	6,713	105,441	3,494	355	3,849	101,592
2012	99,831	6,788	106,619	3,526	393	3,918	102,701
2013	100,665	6,845	107,510	3,526	431	3,957	103,554
2014	101,364	6,893	108,257	3,527	469	3,995	104,262
2015	102,040	6,939	108,979	3,527	507	4,034	104,945
2016	102,624	6,978	109,602	3,528	545	4,073	105,530
2017	103,192	7,017	110,209	3,529	557	4,085	106,123
2018	103,768	7,056	110,824	3,529	569	4,098	106,726
2019	104,349	7,096	111,445	3,530	582	4,112	107,334
2020	104,966	7,138	112,104	3,531	595	4,125	107,979

Annual Growth Rates (%)

1990-2000	1.91%	1.91%	1.91%	2.51%	0.00%	2.51%	1.88%
2000-2007	0.21%	0.21%	0.21%	-3.66%	105.67%	-3.35%	0.35%
2007-2010	-0.82%	-0.82%	-0.82%	1.34%	60.29%	3.54%	-0.97%
2010-2020	0.67%	0.67%	0.67%	0.20%	6.51%	0.88%	0.66%

loss factor 0.0680

Form 1.3 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,508	6,073	3,122	729	534	16,967
1991	5,639	5,554	3,399	837	676	16,104
1992	7,089	6,030	3,175	733	671	17,697
1993	5,893	5,423	3,165	755	680	15,915
1994	7,129	5,809	2,970	842	629	17,379
1995	7,152	5,645	2,913	649	569	16,928
1996	6,917	5,998	3,178	797	656	17,546
1997	7,917	6,077	2,993	753	690	18,430
1998	7,459	7,071	3,259	661	776	19,225
1999	6,944	6,660	3,408	708	770	18,489
2000	7,458	6,777	3,149	745	725	18,853
2001	6,734	6,258	2,831	778	625	17,225
2002	6,486	6,756	3,364	829	670	18,105
2003	7,409	7,576	3,135	636	723	19,479
2004	7,402	7,726	3,339	719	753	19,939
2005	8,918	7,667	3,054	695	720	21,055
2006	9,512	7,968	2,856	638	690	21,664
2007	9,821	7,754	2,925	777	787	22,064
2008	9,216	7,967	3,118	722	840	21,863
2009	9,335	7,831	3,075	706	839	21,786
2010	9,482	7,843	3,090	696	844	21,954
2011	9,658	7,876	3,124	686	858	22,203
2012	9,846	7,938	3,190	686	872	22,534
2013	10,035	8,009	3,215	687	884	22,830
2014	10,224	8,089	3,219	688	892	23,111
2015	10,415	8,169	3,224	688	898	23,394
2016	10,610	8,248	3,231	689	904	23,681
2017	10,812	8,326	3,231	689	910	23,968
2018	11,019	8,406	3,230	690	915	24,261
2018	11,233	8,488	3,226	691	921	24,557
2020	11,468	8,573	3,217	691	926	24,876

Annual Growth Rates (%)

1990-2000	1.37%	1.10%	0.08%	0.21%	3.09%	1.06%
2000-2007	4.01%	1.94%	-1.05%	0.61%	1.19%	2.27%
2007-2010	-1.16%	0.38%	1.85%	-3.63%	2.35%	-0.17%
2010-2020	1.92%	0.90%	0.41%	-0.06%	0.93%	1.26%

Form 1.3 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,508	6,073	3,122	729	534	16,967
1991	5,639	5,554	3,399	837	676	16,104
1992	7,089	6,030	3,175	733	671	17,697
1993	5,893	5,423	3,165	755	680	15,915
1994	7,129	5,809	2,970	842	629	17,379
1995	7,152	5,645	2,913	649	569	16,928
1996	6,917	5,998	3,178	797	656	17,546
1997	7,917	6,077	2,993	753	690	18,430
1998	7,459	7,071	3,259	661	776	19,225
1999	6,944	6,660	3,408	708	770	18,489
2000	7,458	6,777	3,149	745	725	18,853
2001	6,734	6,258	2,831	778	625	17,225
2002	6,486	6,756	3,364	829	670	18,105
2003	7,409	7,576	3,135	636	723	19,479
2004	7,402	7,726	3,339	719	753	19,939
2005	8,918	7,667	3,054	695	720	21,055
2006	9,512	7,968	2,856	638	690	21,664
2007	9,821	7,754	2,925	777	787	22,064
2008	9,216	7,967	3,118	722	840	21,863
2009	9,335	7,831	3,075	706	839	21,786
2010	9,482	7,843	3,090	696	844	21,954
2011	9,658	7,863	3,124	686	858	22,189
2012	9,846	7,911	3,190	686	872	22,505
2013	10,033	7,968	3,214	687	884	22,786
2014	10,222	8,033	3,218	688	892	23,052
2015	10,412	8,099	3,222	688	898	23,320
2016	10,606	8,151	3,227	689	904	23,576
2017	10,806	8,201	3,225	689	910	23,832
2018	11,013	8,254	3,220	690	915	24,092
2018	11,224	8,307	3,212	691	921	24,354
2020	11,458	8,364	3,198	691	926	24,638

Annual Growth Rates (%)

1990-2000	1.37%	1.10%	0.08%	0.21%	3.09%	1.06%
2000-2007	4.01%	1.94%	-1.05%	0.61%	1.19%	2.27%
2007-2010	-1.16%	0.38%	1.85%	-3.63%	2.35%	-0.17%
2010-2020	1.91%	0.65%	0.35%	-0.06%	0.93%	1.16%

Form 1.3 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,508	6,073	3,122	729	534	16,967
1991	5,639	5,554	3,399	837	676	16,104
1992	7,089	6,030	3,175	733	671	17,697
1993	5,893	5,423	3,165	755	680	15,915
1994	7,129	5,809	2,970	842	629	17,379
1995	7,152	5,645	2,913	649	569	16,928
1996	6,917	5,998	3,178	797	656	17,546
1997	7,917	6,077	2,993	753	690	18,430
1998	7,459	7,071	3,259	661	776	19,225
1999	6,944	6,660	3,408	708	770	18,489
2000	7,458	6,777	3,149	745	725	18,853
2001	6,734	6,258	2,831	778	625	17,225
2002	6,486	6,756	3,364	829	670	18,105
2003	7,409	7,576	3,135	636	723	19,479
2004	7,402	7,726	3,339	719	753	19,939
2005	8,918	7,667	3,054	695	720	21,055
2006	9,512	7,968	2,856	638	690	21,664
2007	9,821	7,754	2,925	777	787	22,064
2008	9,216	7,967	3,118	722	840	21,863
2009	9,335	7,831	3,075	706	839	21,786
2010	9,482	7,843	3,090	696	844	21,954
2011	9,658	7,850	3,124	686	858	22,176
2012	9,844	7,885	3,190	686	872	22,479
2013	10,032	7,928	3,214	687	884	22,745
2014	10,220	7,980	3,217	688	892	22,997
2015	10,410	8,031	3,220	688	898	23,248
2016	10,602	8,061	3,223	689	904	23,479
2017	10,801	8,089	3,219	689	910	23,708
2018	11,006	8,117	3,211	690	915	23,939
2018	11,216	8,148	3,199	691	921	24,174
2020	11,448	8,181	3,182	691	926	24,428

Annual Growth Rates (%)

1990-2000	1.37%	1.10%	0.08%	0.21%	3.09%	1.06%
2000-2007	4.01%	1.94%	-1.05%	0.61%	1.19%	2.27%
2007-2010	-1.16%	0.38%	1.85%	-3.63%	2.35%	-0.17%
2010-2020	1.90%	0.42%	0.29%	-0.06%	0.93%	1.07%

Form 1.4 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,967	1,246	18,213	566	0	566	17,647	54
1991	16,104	1,180	17,285	576	0	576	16,709	56
1992	17,697	1,301	18,997	584	0	584	18,413	52
1993	15,915	1,164	17,079	604	0	604	16,475	58
1994	17,379	1,274	18,654	610	0	610	18,044	54
1995	16,928	1,239	18,167	619	0	619	17,548	55
1996	17,546	1,286	18,832	625	0	625	18,207	55
1997	18,430	1,350	19,781	663	0	663	19,118	54
1998	19,225	1,408	20,634	699	0	699	19,935	52
1999	18,489	1,351	19,839	717	0	717	19,122	56
2000	18,853	1,378	20,231	725	0	725	19,506	59
2001	17,225	1,266	18,491	563	1	563	17,928	60
2002	18,105	1,320	19,425	736	1	737	18,688	58
2003	19,479	1,422	20,901	760	5	765	20,136	55
2004	19,939	1,464	21,402	670	8	678	20,724	55
2005	21,055	1,549	22,604	657	13	670	21,934	53
2006	21,664	1,598	23,262	625	18	643	22,619	53
2007	22,064	1,632	23,696	561	24	585	23,111	51
2008	21,863	1,615	23,478	569	49	618	22,859	51
2009	21,786	1,606	23,391	571	88	659	22,732	51
2010	21,954	1,617	23,571	573	100	673	22,898	50
2011	22,203	1,635	23,838	575	112	687	23,151	50
2012	22,534	1,659	24,193	577	124	701	23,492	50
2013	22,830	1,681	24,510	577	136	713	23,797	50
2014	23,111	1,701	24,813	577	148	725	24,087	50
2015	23,394	1,722	25,116	577	160	737	24,379	49
2016	23,681	1,743	25,424	577	172	749	24,675	49
2017	23,968	1,764	25,733	577	176	753	24,980	49
2018	24,261	1,786	26,047	577	180	757	25,290	49
2019	24,557	1,809	26,366	577	184	761	25,605	49
2020	24,876	1,832	26,708	577	188	765	25,943	48

Annual Growth Rates (%)

1990-2000	1.06%	1.01%	1.06%	2.51%	0.00%	2.51%	1.01%	0.87%
2000-2007	2.27%	2.45%	2.28%	-3.60%	0.00%	-3.02%	2.45%	-2.04%
2007-2010	-0.17%	-0.31%	-0.18%	0.74%	60.29%	4.80%	-0.31%	-0.67%
2010-2020	1.26%	1.26%	1.26%	0.07%	6.51%	1.29%	1.26%	-0.37%

Form 1.4 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,967	1,246	18,213	566	0	566	17,647	54
1991	16,104	1,180	17,285	576	0	576	16,709	56
1992	17,697	1,301	18,997	584	0	584	18,413	52
1993	15,915	1,164	17,079	604	0	604	16,475	58
1994	17,379	1,274	18,654	610	0	610	18,044	54
1995	16,928	1,239	18,167	619	0	619	17,548	55
1996	17,546	1,286	18,832	625	0	625	18,207	55
1997	18,430	1,350	19,781	663	0	663	19,118	54
1998	19,225	1,408	20,634	699	0	699	19,935	52
1999	18,489	1,351	19,839	717	0	717	19,122	56
2000	18,853	1,378	20,231	725	0	725	19,506	59
2001	17,225	1,266	18,491	563	1	563	17,928	60
2002	18,105	1,320	19,425	736	1	737	18,688	58
2003	19,479	1,422	20,901	760	5	765	20,136	55
2004	19,939	1,464	21,402	670	8	678	20,724	55
2005	21,055	1,549	22,604	657	13	670	21,934	53
2006	21,664	1,598	23,262	625	18	643	22,619	53
2007	22,064	1,632	23,696	561	24	585	23,111	51
2008	21,863	1,615	23,478	569	49	618	22,859	51
2009	21,786	1,606	23,391	571	88	659	22,732	51
2010	21,954	1,617	23,571	573	100	673	22,898	50
2011	22,189	1,634	23,823	575	112	687	23,136	50
2012	22,505	1,657	24,163	577	124	701	23,461	50
2013	22,786	1,678	24,464	577	136	713	23,751	50
2014	23,052	1,697	24,749	577	148	725	24,024	50
2015	23,320	1,716	25,036	577	160	737	24,299	49
2016	23,576	1,735	25,311	577	172	749	24,562	49
2017	23,832	1,754	25,586	577	176	753	24,833	49
2018	24,092	1,773	25,865	577	180	757	25,108	49
2019	24,354	1,793	26,147	577	184	761	25,386	49
2020	24,638	1,814	26,452	577	188	765	25,687	48
Annual Growth Rates (%)								
1990-2000	1.06%	1.01%	1.06%	2.51%	0.00%	2.51%	1.01%	0.87%
2000-2007	2.27%	2.45%	2.28%	-3.60%	0.00%	-3.02%	2.45%	-2.04%
2007-2010	-0.17%	-0.31%	-0.18%	0.74%	60.29%	4.80%	-0.31%	-0.67%
2010-2020	1.16%	1.16%	1.16%	0.07%	6.51%	1.29%	1.16%	-0.37%

Form 1.4 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,967	1,246	18,213	566	0	566	17,647	54
1991	16,104	1,180	17,285	576	0	576	16,709	56
1992	17,697	1,301	18,997	584	0	584	18,413	52
1993	15,915	1,164	17,079	604	0	604	16,475	58
1994	17,379	1,274	18,654	610	0	610	18,044	54
1995	16,928	1,239	18,167	619	0	619	17,548	55
1996	17,546	1,286	18,832	625	0	625	18,207	55
1997	18,430	1,350	19,781	663	0	663	19,118	54
1998	19,225	1,408	20,634	699	0	699	19,935	52
1999	18,489	1,351	19,839	717	0	717	19,122	56
2000	18,853	1,378	20,231	725	0	725	19,506	59
2001	17,225	1,266	18,491	563	1	563	17,928	60
2002	18,105	1,320	19,425	736	1	737	18,688	58
2003	19,479	1,422	20,901	760	5	765	20,136	55
2004	19,939	1,464	21,402	670	8	678	20,724	55
2005	21,055	1,549	22,604	657	13	670	21,934	53
2006	21,664	1,598	23,262	625	18	643	22,619	53
2007	22,064	1,632	23,696	561	24	585	23,111	51
2008	21,863	1,615	23,478	569	49	618	22,859	51
2009	21,786	1,606	23,391	571	88	659	22,732	51
2010	21,954	1,617	23,571	573	100	673	22,898	50
2011	22,176	1,633	23,809	575	112	687	23,122	50
2012	22,479	1,655	24,134	577	124	701	23,432	50
2013	22,745	1,674	24,420	577	136	713	23,707	50
2014	22,997	1,693	24,689	577	148	725	23,964	50
2015	23,248	1,711	24,958	577	160	737	24,221	49
2016	23,479	1,727	25,207	577	172	749	24,457	49
2017	23,708	1,745	25,453	577	176	753	24,700	49
2018	23,939	1,762	25,701	577	180	757	24,944	49
2019	24,174	1,779	25,953	577	184	761	25,192	49
2020	24,428	1,798	26,227	577	188	765	25,462	48

Annual Growth Rates (%)

1990-2000	1.06%	1.01%	1.06%	2.51%	0.00%	2.51%	1.01%	0.87%
2000-2007	2.27%	2.45%	2.28%	-3.60%	0.00%	-3.02%	2.45%	-2.04%
2007-2010	-0.17%	-0.31%	-0.18%	0.74%	60.29%	4.80%	-0.31%	-0.67%
2010-2020	1.07%	1.07%	1.07%	0.07%	6.51%	1.29%	1.07%	-0.37%

Form 1.5 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	22,732	24,187	24,599	24,956	1.064	1.082	1.098
2010	22,898	24,363	24,778	25,138	1.064	1.082	1.098
2011	23,151	24,632	25,052	25,415	1.064	1.082	1.098
2012	23,492	24,995	25,421	25,790	1.064	1.082	1.098
2013	23,797	25,320	25,751	26,125	1.064	1.082	1.098
2014	24,087	25,629	26,065	26,444	1.064	1.082	1.098
2015	24,379	25,939	26,381	26,764	1.064	1.082	1.098
2016	24,675	26,254	26,701	27,089	1.064	1.082	1.098
2017	24,980	26,578	27,031	27,423	1.064	1.082	1.098
2018	25,290	26,908	27,367	27,764	1.064	1.082	1.098
2019	25,605	27,243	27,707	28,110	1.064	1.082	1.098

Form 1.5 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	22,732	24,187	24,599	24,956	1.064	1.082	1.098
2010	22,898	24,363	24,778	25,138	1.064	1.082	1.098
2011	23,136	24,616	25,035	25,399	1.064	1.082	1.098
2012	23,461	24,963	25,388	25,757	1.064	1.082	1.098
2013	23,751	25,271	25,701	26,074	1.064	1.082	1.098
2014	24,024	25,561	25,997	26,374	1.064	1.082	1.098
2015	24,299	25,854	26,294	26,676	1.064	1.082	1.098
2016	24,562	26,134	26,579	26,965	1.064	1.082	1.098
2017	24,833	26,422	26,872	27,262	1.064	1.082	1.098
2018	25,108	26,715	27,170	27,565	1.064	1.082	1.098
2019	25,386	27,011	27,471	27,870	1.064	1.082	1.098

Form 1.5 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	22,732	24,187	24,599	24,956	1.064	1.082	1.098
2010	22,898	24,363	24,778	25,138	1.064	1.082	1.098
2011	23,122	24,601	25,020	25,384	1.064	1.082	1.098
2012	23,432	24,932	25,356	25,725	1.064	1.082	1.098
2013	23,707	25,224	25,653	26,026	1.064	1.082	1.098
2014	23,964	25,497	25,932	26,308	1.064	1.082	1.098
2015	24,221	25,771	26,210	26,591	1.064	1.082	1.098
2016	24,457	26,022	26,465	26,850	1.064	1.082	1.098
2017	24,700	26,280	26,728	27,116	1.064	1.082	1.098
2018	24,944	26,540	26,992	27,384	1.064	1.082	1.098
2019	25,192	26,804	27,260	27,656	1.064	1.082	1.098

Form 2.2 - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Planning Area Economic and Demographic Assumptions

Year	Household Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	10,871,280	3,684,796	2.95	347,782	52,726	1,816
1991	11,115,546	3,746,161	2.97	340,649	50,492	1,894
1992	11,318,873	3,782,986	2.99	345,645	48,496	1,961
1993	11,426,196	3,818,354	2.99	340,789	46,076	2,000
1994	11,518,359	3,846,110	2.99	343,541	45,417	2,024
1995	11,618,824	3,882,776	2.99	350,542	46,550	2,045
1996	11,714,177	3,915,467	2.99	360,635	48,296	2,066
1997	11,870,277	3,941,462	3.01	374,447	57,934	2,089
1998	12,014,583	3,975,263	3.02	401,903	64,577	2,119
1999	12,223,586	4,008,944	3.05	415,520	74,790	2,156
2000	12,454,359	4,035,610	3.09	435,594	88,390	2,209
2001	12,739,465	4,066,111	3.13	447,484	80,194	2,260
2002	12,993,063	4,107,613	3.16	453,281	75,691	2,322
2003	13,246,226	4,158,371	3.19	464,396	79,622	2,383
2004	13,475,630	4,215,394	3.20	482,438	86,072	2,429
2005	13,678,327	4,282,296	3.19	498,604	92,155	2,476
2006	13,856,297	4,348,934	3.19	520,931	94,898	2,516
2007	14,028,524	4,400,433	3.19	530,345	96,282	2,566
2008	14,200,627	4,446,264	3.19	522,167	98,885	2,613
2009	14,375,657	4,492,830	3.20	520,467	101,002	2,658
2010	14,557,970	4,541,542	3.21	530,209	103,266	2,696
2011	14,743,406	4,591,037	3.21	548,398	105,587	2,730
2012	14,932,031	4,641,333	3.22	565,992	107,783	2,770
2013	15,123,913	4,692,441	3.22	581,941	109,688	2,814
2014	15,319,119	4,744,383	3.23	596,376	111,467	2,860
2015	15,517,721	4,797,168	3.23	609,377	113,321	2,904
2016	15,719,785	4,850,821	3.24	622,504	115,156	2,947
2017	15,925,395	4,905,365	3.25	636,001	116,846	2,989
2018	16,134,621	4,960,798	3.25	649,578	118,406	3,030
2019	16,347,541	5,017,160	3.26	663,077	119,835	3,072
2020	16,564,240	5,074,460	3.26	676,756	121,202	3,113
Annual Growth Rates (%)						
1990-2000	1.37%	0.91%	0.45%	2.28%	0.00%	1.97%
2000-2007	1.71%	1.24%	0.47%	2.85%	0.00%	2.17%
2007-2010	1.24%	1.06%	0.18%	-0.01%	2.36%	1.66%
2010-2020	1.30%	1.12%	0.18%	2.47%	1.61%	1.45%

Form 1.7a - SCE Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Private Supply by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	0	460	2,477	259	10	166	0	3,372
1991	0	474	2,484	291	10	171	0	3,429
1992	0	505	2,495	296	10	174	0	3,480
1993	0	539	2,570	222	13	254	0	3,597
1994	0	542	2,583	230	13	262	0	3,631
1995	0	550	2,614	247	13	266	0	3,689
1996	0	550	2,649	246	13	266	0	3,724
1997	0	574	2,823	260	13	278	0	3,948
1998	0	617	2,966	277	12	289	0	4,161
1999	0	641	3,036	297	0	301	0	4,274
2000	0	649	3,083	276	0	312	0	4,321
2001	1	366	2,371	645	0	0	0	3,383
2002	3	540	3,024	724	0	0	0	4,291
2003	5	584	3,056	762	0	6	0	4,412
2004	8	512	2,663	767	0	10	0	3,960
2005	10	495	2,677	739	5	15	0	3,941
2006	13	435	2,632	665	6	20	0	3,772
2007	19	296	2,510	551	7	21	0	3,404
2008	33	402	2,523	554	9	33	0	3,553
2009	59	510	2,533	554	10	42	0	3,708
2010	69	551	2,543	554	11	51	0	3,779
2011	78	591	2,553	555	12	60	0	3,849
2012	88	632	2,562	555	12	69	0	3,918
2013	97	659	2,563	555	13	70	0	3,957
2014	107	686	2,563	555	14	71	0	3,995
2015	116	713	2,563	555	15	72	0	4,034
2016	126	739	2,564	555	15	73	0	4,073
2017	129	749	2,564	555	16	73	0	4,085
2018	132	759	2,564	555	16	74	0	4,098
2019	135	769	2,564	555	16	74	0	4,112
2020	138	779	2,564	555	16	74	0	4,125

Annual Growth Rates (%)

1990-2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000-2007	93.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-3.35%
2007-2010	54.46%	22.99%	0.44%	0.22%	15.85%	33.45%	0.00%	3.54%
2010-2020	7.22%	3.52%	0.08%	0.01%	3.80%	3.79%	0.00%	0.88%

Form 2.3 Electricity Prices - SCE									
	residential			commercial			industrial		
YEAR	low rate	mid rate	high rate	low rate	mid rate	high rate	low rate	mid rate	high rate
1980	12.24	12.24	12.24	14.45	14.45	14.45	12.31	12.31	12.31
1981	12.02	12.02	12.02	14.00	14.00	14.00	11.84	11.84	11.84
1982	12.74	12.74	12.74	14.85	14.85	14.85	13.03	13.03	13.03
1983	11.93	11.93	11.93	14.46	14.46	14.46	12.97	12.97	12.97
1984	11.84	11.84	11.84	10.93	10.93	10.93	12.99	12.99	12.99
1985	11.90	11.90	11.90	14.37	14.37	14.37	13.05	13.05	13.05
1986	12.01	12.01	12.01	14.54	14.54	14.54	13.08	13.08	13.08
1987	11.85	11.85	11.85	14.22	14.22	14.22	12.49	12.49	12.49
1988	12.63	12.63	12.63	14.16	14.16	14.16	11.68	11.68	11.68
1989	13.64	13.64	13.64	14.60	14.60	14.60	11.48	11.48	11.48
1990	13.95	13.95	13.95	14.41	14.41	14.41	11.03	11.03	11.03
1991	14.64	14.64	14.64	14.80	14.80	14.80	10.99	10.99	10.99
1992	14.90	14.90	14.90	14.67	14.67	14.67	10.50	10.50	10.50
1993	14.55	14.55	14.55	13.67	13.67	13.67	9.54	9.54	9.54
1994	14.52	14.52	14.52	13.54	13.54	13.54	9.58	9.58	9.58
1995	14.85	14.85	14.85	13.26	13.26	13.26	9.43	9.43	9.43
1996	14.43	14.43	14.43	12.24	12.24	12.24	8.69	8.69	8.69
1997	14.20	14.20	14.20	11.74	11.74	11.74	8.43	8.43	8.43
1998	12.77	12.77	12.77	11.30	11.30	11.30	7.93	7.93	7.93
1999	12.58	12.58	12.58	11.07	11.07	11.07	7.08	7.08	7.08
2000	12.31	12.31	12.31	10.84	10.84	10.84	6.53	6.53	6.53
2001	13.78	13.78	13.78	14.33	14.33	14.33	11.09	11.09	11.09
2002	13.39	13.39	13.39	16.10	16.10	16.10	11.06	11.06	11.06
2003	13.49	13.49	13.49	14.92	14.92	14.92	10.63	10.63	10.63
2004	12.10	12.10	12.10	12.85	12.85	12.85	8.94	8.94	8.94
2005	11.73	11.73	11.73	12.33	12.33	12.33	8.84	8.84	8.84
2006	13.41	13.41	13.41	14.57	14.57	14.57	10.49	10.49	10.49
2007	12.77	12.77	12.77	13.53	13.53	13.53	9.73	9.73	9.73
2008	11.85	11.85	11.85	12.56	12.56	12.56	9.03	9.03	9.03
2009	13.76	13.76	13.76	14.62	14.62	14.62	10.51	10.51	10.51
2010	14.16	14.16	14.16	15.03	15.03	15.03	10.81	10.81	10.81
2011	14.16	14.30	14.44	15.03	15.18	15.32	10.81	10.92	11.02
2012	14.16	14.44	14.71	15.03	15.33	15.61	10.81	11.02	11.23
2013	14.16	14.58	15.00	15.03	15.48	15.91	10.81	11.13	11.45
2014	14.16	14.73	15.29	15.03	15.63	16.22	10.81	11.24	11.67
2015	14.16	14.87	15.58	15.03	15.78	16.53	10.81	11.35	11.89
2016	14.16	15.14	16.11	15.03	16.07	17.09	10.81	11.56	12.30
2017	14.16	15.42	16.66	15.03	16.37	17.68	10.81	11.77	12.71
2018	14.16	15.71	17.22	15.03	16.67	18.28	10.81	11.99	13.14
2019	14.16	15.99	17.81	15.03	16.97	18.90	10.81	12.21	13.59
2020	14.16	16.29	18.41	15.03	17.28	19.54	10.81	12.43	14.05

Form 1.1 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	25,844	26,022	20,071	3,188	6,512	4,685	481	86,803
1991	26,308	26,325	19,545	3,255	5,887	4,799	508	86,627
1992	26,412	27,333	19,500	3,190	6,078	4,871	499	87,883
1993	26,781	27,714	19,706	3,115	5,850	4,955	507	88,627
1994	27,013	27,850	19,784	2,838	5,772	4,854	509	88,621
1995	27,080	28,516	20,770	2,574	5,380	4,934	527	89,781
1996	28,120	29,466	20,486	2,629	5,723	5,104	542	92,069
1997	28,599	31,203	21,750	2,716	5,975	4,897	559	95,699
1998	29,596	31,156	21,117	2,563	5,000	4,841	572	94,845
1999	30,521	33,176	20,572	2,585	6,005	5,165	509	98,534
2000	31,646	34,503	20,748	2,599	6,004	5,279	552	101,331
2001	29,657	33,329	18,893	2,397	6,350	4,857	509	95,993
2002	30,537	34,220	18,143	2,283	6,439	4,944	503	97,070
2003	31,976	35,243	17,954	2,477	6,324	4,682	516	99,171
2004	32,708	35,741	18,352	2,642	6,778	4,987	532	101,740
2005	33,106	35,819	18,619	2,863	5,402	5,113	537	101,460
2006	34,345	36,943	18,561	2,912	6,010	5,407	542	104,719
2007	34,608	38,115	18,324	3,068	7,301	5,567	547	107,529
2008	34,515	38,478	18,086	2,992	6,542	5,587	554	106,753
2009	34,293	38,283	17,823	2,946	6,201	5,593	556	105,695
2010	34,388	38,543	17,976	2,898	6,205	5,671	559	106,240
2011	34,657	38,736	18,205	2,881	6,205	5,781	561	107,026
2012	35,095	39,130	18,661	2,864	6,224	5,939	564	108,477
2013	35,531	39,471	18,861	2,834	6,244	6,034	566	109,541
2014	35,983	39,803	18,919	2,800	6,264	6,082	569	110,419
2015	36,434	40,099	18,976	2,770	6,284	6,119	571	111,254
2016	36,910	40,372	19,046	2,740	6,299	6,155	574	112,096
2017	37,407	40,622	19,089	2,712	6,315	6,193	576	112,914
2018	37,923	40,862	19,123	2,683	6,330	6,232	579	113,732
2019	38,457	41,100	19,135	2,653	6,346	6,264	581	114,536
2020	39,056	41,352	19,126	2,622	6,362	6,303	584	115,404

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.86%	0.33%	-2.02%	-0.81%	1.20%	1.40%	1.56%
2000-2007	1.29%	1.43%	-1.76%	2.40%	2.83%	0.76%	-0.14%	0.85%
2007-2010	-0.21%	0.37%	-0.64%	-1.88%	-5.27%	0.62%	0.72%	-0.40%
2010-2020	1.28%	0.71%	0.62%	-1.00%	0.25%	1.06%	0.44%	0.83%

Form 1.1 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	25,844	26,022	20,071	3,188	6,512	4,685	481	86,803
1991	26,308	26,325	19,545	3,255	5,887	4,799	508	86,627
1992	26,412	27,333	19,500	3,190	6,078	4,871	499	87,883
1993	26,781	27,714	19,706	3,115	5,850	4,955	507	88,627
1994	27,013	27,850	19,784	2,838	5,772	4,854	509	88,621
1995	27,080	28,516	20,770	2,574	5,380	4,934	527	89,781
1996	28,120	29,466	20,486	2,629	5,723	5,104	542	92,069
1997	28,599	31,203	21,750	2,716	5,975	4,897	559	95,699
1998	29,596	31,156	21,117	2,563	5,000	4,841	572	94,845
1999	30,521	33,176	20,572	2,585	6,005	5,165	509	98,534
2000	31,646	34,503	20,748	2,599	6,004	5,279	552	101,331
2001	29,657	33,329	18,893	2,397	6,350	4,857	509	95,993
2002	30,537	34,220	18,143	2,283	6,439	4,944	503	97,070
2003	31,976	35,243	17,954	2,477	6,324	4,682	516	99,171
2004	32,708	35,741	18,352	2,642	6,778	4,987	532	101,740
2005	33,106	35,819	18,619	2,863	5,402	5,113	537	101,460
2006	34,345	36,943	18,561	2,912	6,010	5,407	542	104,719
2007	34,608	38,115	18,324	3,068	7,301	5,567	547	107,529
2008	34,515	38,478	18,086	2,992	6,542	5,587	554	106,753
2009	34,293	38,283	17,823	2,946	6,201	5,593	556	105,695
2010	34,388	38,543	17,976	2,898	6,205	5,671	559	106,240
2011	34,654	38,668	18,208	2,881	6,205	5,781	561	106,958
2012	35,090	38,993	18,664	2,864	6,224	5,939	564	108,339
2013	35,523	39,260	18,862	2,834	6,244	6,034	566	109,323
2014	35,972	39,523	18,916	2,801	6,264	6,082	569	110,125
2015	36,420	39,744	18,969	2,771	6,284	6,119	571	110,878
2016	36,891	39,899	19,034	2,740	6,299	6,155	574	111,592
2017	37,382	40,032	19,068	2,712	6,315	6,193	576	112,278
2018	37,892	40,156	19,088	2,683	6,330	6,232	579	112,959
2019	38,419	40,282	19,088	2,653	6,346	6,264	581	113,632
2020	39,010	40,419	19,065	2,622	6,362	6,303	584	114,365

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.86%	0.33%	-2.02%	-0.81%	1.20%	1.40%	1.56%
2000-2007	1.29%	1.43%	-1.76%	2.40%	2.83%	0.76%	-0.14%	0.85%
2007-2010	-0.21%	0.37%	-0.64%	-1.88%	-5.27%	0.62%	0.72%	-0.40%
2010-2020	1.27%	0.48%	0.59%	-1.00%	0.25%	1.06%	0.44%	0.74%

Form 1.1 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	25,844	26,022	20,071	3,188	6,512	4,685	481	86,803
1991	26,308	26,325	19,545	3,255	5,887	4,799	508	86,627
1992	26,412	27,333	19,500	3,190	6,078	4,871	499	87,883
1993	26,781	27,714	19,706	3,115	5,850	4,955	507	88,627
1994	27,013	27,850	19,784	2,838	5,772	4,854	509	88,621
1995	27,080	28,516	20,770	2,574	5,380	4,934	527	89,781
1996	28,120	29,466	20,486	2,629	5,723	5,104	542	92,069
1997	28,599	31,203	21,750	2,716	5,975	4,897	559	95,699
1998	29,596	31,156	21,117	2,563	5,000	4,841	572	94,845
1999	30,521	33,176	20,572	2,585	6,005	5,165	509	98,534
2000	31,646	34,503	20,748	2,599	6,004	5,279	552	101,331
2001	29,657	33,329	18,893	2,397	6,350	4,857	509	95,993
2002	30,537	34,220	18,143	2,283	6,439	4,944	503	97,070
2003	31,976	35,243	17,954	2,477	6,324	4,682	516	99,171
2004	32,708	35,741	18,352	2,642	6,778	4,987	532	101,740
2005	33,106	35,819	18,619	2,863	5,402	5,113	537	101,460
2006	34,345	36,943	18,561	2,912	6,010	5,407	542	104,719
2007	34,608	38,115	18,324	3,068	7,301	5,567	547	107,529
2008	34,515	38,478	18,086	2,992	6,542	5,587	554	106,753
2009	34,293	38,283	17,823	2,946	6,201	5,593	556	105,695
2010	34,388	38,543	17,976	2,898	6,205	5,671	559	106,240
2011	34,652	38,600	18,208	2,881	6,205	5,781	561	106,887
2012	35,085	38,858	18,665	2,864	6,224	5,939	564	108,199
2013	35,515	39,068	18,868	2,834	6,244	6,034	566	109,130
2014	35,962	39,279	18,924	2,800	6,264	6,082	569	109,880
2015	36,407	39,456	18,980	2,770	6,284	6,119	571	110,588
2016	36,873	39,534	19,039	2,740	6,299	6,155	574	111,214
2017	37,359	39,589	19,070	2,711	6,315	6,193	576	111,813
2018	37,863	39,643	19,084	2,683	6,330	6,232	579	112,414
2019	38,385	39,702	19,075	2,652	6,346	6,264	581	113,004
2020	38,970	39,780	19,045	2,621	6,362	6,303	584	113,665

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.86%	0.33%	-2.02%	-0.81%	1.20%	1.40%	1.56%
2000-2007	1.29%	1.43%	-1.76%	2.40%	2.83%	0.76%	-0.14%	0.85%
2007-2010	-0.21%	0.37%	-0.64%	-1.88%	-5.27%	0.62%	0.72%	-0.40%
2010-2020	1.26%	0.32%	0.58%	-1.00%	0.25%	1.06%	0.44%	0.68%

Form 1.1b - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	25,837	25,638	17,638	2,015	6,504	4,556	481	82,670
1991	26,302	25,915	17,320	2,024	5,878	4,668	508	82,615
1992	26,406	26,919	17,276	1,978	6,069	4,741	499	83,887
1993	26,774	27,277	16,592	1,900	5,847	4,811	507	83,708
1994	27,013	27,408	16,536	1,634	5,770	4,730	509	83,601
1995	27,080	28,073	17,531	1,391	5,378	4,810	527	84,789
1996	28,120	29,020	16,752	1,412	5,720	4,979	542	86,545
1997	28,599	30,765	17,960	1,444	5,972	4,785	559	90,084
1998	29,596	30,721	17,699	1,278	4,997	4,728	572	89,591
1999	30,520	32,735	17,157	1,407	6,005	5,064	509	93,398
2000	31,645	34,064	17,594	1,408	6,004	5,179	552	96,446
2001	29,654	32,887	15,983	1,025	6,350	4,857	509	91,266
2002	30,530	33,774	15,001	758	6,439	4,943	503	91,949
2003	31,963	34,887	14,485	862	6,324	4,677	516	93,716
2004	32,686	35,411	15,371	1,002	6,776	4,981	532	96,759
2005	33,076	35,357	15,723	1,274	5,396	5,103	537	96,466
2006	34,304	36,294	15,707	1,478	6,001	5,381	542	99,707
2007	34,545	37,415	15,037	1,942	7,289	5,534	547	102,308
2008	34,410	37,657	14,785	1,864	6,526	5,537	554	101,333
2009	34,107	37,226	14,517	1,817	6,183	5,527	556	99,934
2010	34,166	37,441	14,666	1,770	6,186	5,591	559	100,379
2011	34,402	37,591	14,891	1,752	6,184	5,687	561	101,069
2012	34,807	37,941	15,343	1,735	6,203	5,831	564	102,423
2013	35,209	38,253	15,540	1,705	6,222	5,924	566	103,418
2014	35,627	38,556	15,594	1,671	6,241	5,971	569	104,228
2015	36,045	38,822	15,648	1,641	6,260	6,007	571	104,995
2016	36,488	39,065	15,715	1,611	6,274	6,041	574	105,768
2017	36,976	39,302	15,758	1,583	6,289	6,079	576	106,562
2018	37,482	39,528	15,792	1,554	6,304	6,118	579	107,357
2019	38,005	39,752	15,804	1,524	6,320	6,150	581	108,136
2020	38,594	39,990	15,795	1,493	6,336	6,188	584	108,979

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.88%	-0.02%	-3.52%	-0.80%	1.29%	1.40%	1.55%
2000-2007	1.26%	1.35%	-2.22%	4.69%	2.81%	0.95%	-0.14%	0.85%
2007-2010	-0.37%	0.02%	-0.83%	-3.04%	-5.32%	0.34%	0.72%	-0.63%
2010-2020	1.23%	0.66%	0.74%	-1.69%	0.24%	1.02%	0.44%	0.83%

Form 1.1b - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	25,837	25,638	17,638	2,015	6,504	4,556	481	82,670
1991	26,302	25,915	17,320	2,024	5,878	4,668	508	82,615
1992	26,406	26,919	17,276	1,978	6,069	4,741	499	83,887
1993	26,774	27,277	16,592	1,900	5,847	4,811	507	83,708
1994	27,013	27,408	16,536	1,634	5,770	4,730	509	83,601
1995	27,080	28,073	17,531	1,391	5,378	4,810	527	84,789
1996	28,120	29,020	16,752	1,412	5,720	4,979	542	86,545
1997	28,599	30,765	17,960	1,444	5,972	4,785	559	90,084
1998	29,596	30,721	17,699	1,278	4,997	4,728	572	89,591
1999	30,520	32,735	17,157	1,407	6,005	5,064	509	93,398
2000	31,645	34,064	17,594	1,408	6,004	5,179	552	96,446
2001	29,654	32,887	15,983	1,025	6,350	4,857	509	91,266
2002	30,530	33,774	15,001	758	6,439	4,943	503	91,949
2003	31,963	34,887	14,485	862	6,324	4,677	516	93,716
2004	32,686	35,411	15,371	1,002	6,776	4,981	532	96,759
2005	33,076	35,357	15,723	1,274	5,396	5,103	537	96,466
2006	34,304	36,294	15,707	1,478	6,001	5,381	542	99,707
2007	34,545	37,415	15,037	1,942	7,289	5,534	547	102,308
2008	34,410	37,657	14,785	1,864	6,526	5,537	554	101,333
2009	34,107	37,226	14,517	1,817	6,183	5,527	556	99,934
2010	34,166	37,441	14,667	1,770	6,186	5,591	559	100,379
2011	34,400	37,523	14,894	1,752	6,184	5,687	561	101,001
2012	34,802	37,805	15,346	1,735	6,203	5,831	564	102,285
2013	35,201	38,042	15,541	1,705	6,222	5,924	566	103,201
2014	35,617	38,275	15,591	1,672	6,241	5,971	569	103,934
2015	36,032	38,466	15,642	1,642	6,260	6,007	571	104,619
2016	36,469	38,593	15,703	1,611	6,274	6,041	574	105,264
2017	36,950	38,712	15,738	1,583	6,289	6,079	576	105,926
2018	37,450	38,822	15,757	1,554	6,304	6,118	579	106,584
2019	37,967	38,934	15,756	1,524	6,320	6,150	581	107,232
2020	38,548	39,057	15,734	1,493	6,336	6,188	584	107,940

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.88%	-0.02%	-3.52%	-0.80%	1.29%	1.40%	1.55%
2000-2007	1.26%	1.35%	-2.22%	4.69%	2.81%	0.95%	-0.14%	0.85%
2007-2010	-0.37%	0.02%	-0.83%	-3.04%	-5.32%	0.34%	0.72%	-0.63%
2010-2020	1.21%	0.42%	0.70%	-1.69%	0.24%	1.02%	0.44%	0.73%

Form 1.1b - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	25,837	25,638	17,638	2,015	6,504	4,556	481	82,670
1991	26,302	25,915	17,320	2,024	5,878	4,668	508	82,615
1992	26,406	26,919	17,276	1,978	6,069	4,741	499	83,887
1993	26,774	27,277	16,592	1,900	5,847	4,811	507	83,708
1994	27,013	27,408	16,536	1,634	5,770	4,730	509	83,601
1995	27,080	28,073	17,531	1,391	5,378	4,810	527	84,789
1996	28,120	29,020	16,752	1,412	5,720	4,979	542	86,545
1997	28,599	30,765	17,960	1,444	5,972	4,785	559	90,084
1998	29,596	30,721	17,699	1,278	4,997	4,728	572	89,591
1999	30,520	32,735	17,157	1,407	6,005	5,064	509	93,398
2000	31,645	34,064	17,594	1,408	6,004	5,179	552	96,446
2001	29,654	32,887	15,983	1,025	6,350	4,857	509	91,266
2002	30,530	33,774	15,001	758	6,439	4,943	503	91,949
2003	31,963	34,887	14,485	862	6,324	4,677	516	93,716
2004	32,686	35,411	15,371	1,002	6,776	4,981	532	96,759
2005	33,076	35,357	15,723	1,274	5,396	5,103	537	96,466
2006	34,304	36,294	15,707	1,478	6,001	5,381	542	99,707
2007	34,545	37,415	15,037	1,942	7,289	5,534	547	102,308
2008	34,410	37,657	14,785	1,864	6,526	5,537	554	101,333
2009	34,107	37,226	14,517	1,817	6,183	5,527	556	99,934
2010	34,166	37,441	14,666	1,770	6,186	5,591	559	100,379
2011	34,397	37,455	14,894	1,752	6,184	5,687	561	100,930
2012	34,797	37,669	15,346	1,735	6,203	5,831	564	102,145
2013	35,194	37,851	15,547	1,705	6,222	5,924	566	103,008
2014	35,606	38,032	15,599	1,671	6,241	5,971	569	103,689
2015	36,018	38,179	15,652	1,641	6,260	6,007	571	104,329
2016	36,451	38,228	15,709	1,611	6,274	6,041	574	104,887
2017	36,927	38,269	15,739	1,582	6,289	6,079	576	105,461
2018	37,422	38,309	15,753	1,554	6,304	6,118	579	106,038
2019	37,933	38,354	15,744	1,523	6,320	6,150	581	106,604
2020	38,508	38,418	15,714	1,492	6,336	6,188	584	107,240

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	2.05%	2.88%	-0.02%	-3.52%	-0.80%	1.29%	1.40%	1.55%
2000-2007	1.26%	1.35%	-2.22%	4.69%	2.81%	0.95%	-0.14%	0.85%
2007-2010	-0.37%	0.02%	-0.83%	-3.04%	-5.32%	0.34%	0.72%	-0.63%
2010-2020	1.20%	0.26%	0.69%	-1.69%	0.24%	1.02%	0.44%	0.66%

Form 1.2 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	86,803	8,333	95,136	4,133	0	4,133	91,003
1991	86,627	8,316	94,943	4,012	0	4,012	90,932
1992	87,883	8,437	96,320	3,996	0	3,996	92,324
1993	88,627	8,508	97,135	4,919	0	4,919	92,216
1994	88,621	8,508	97,129	5,020	0	5,020	92,108
1995	89,781	8,619	98,400	4,992	0	4,992	93,408
1996	92,069	8,839	100,908	5,525	0	5,525	95,383
1997	95,699	9,187	104,886	5,615	0	5,615	99,271
1998	94,845	9,105	103,950	5,253	0	5,253	98,697
1999	98,534	9,459	107,994	5,136	1	5,136	102,857
2000	101,331	9,728	111,059	4,883	1	4,885	106,174
2001	95,993	9,215	105,208	4,722	4	4,726	100,482
2002	97,070	9,319	106,389	5,108	14	5,121	101,267
2003	99,171	9,520	108,692	5,426	30	5,456	103,236
2004	101,740	9,767	111,507	4,920	62	4,982	106,526
2005	101,460	9,740	111,200	4,899	95	4,994	106,206
2006	104,719	10,053	114,772	4,869	143	5,012	109,760
2007	107,529	10,323	117,852	5,011	211	5,221	112,630
2008	106,753	10,248	117,001	5,062	358	5,420	111,581
2009	105,695	10,147	115,842	5,092	670	5,761	110,081
2010	106,240	10,199	116,439	5,119	742	5,861	110,578
2011	107,026	10,274	117,300	5,147	810	5,957	111,343
2012	108,477	10,414	118,891	5,175	878	6,054	112,837
2013	109,541	10,516	120,056	5,175	947	6,122	113,934
2014	110,419	10,600	121,019	5,176	1,015	6,191	114,829
2015	111,254	10,680	121,934	5,176	1,084	6,259	115,675
2016	112,096	10,761	122,858	5,176	1,152	6,328	116,530
2017	112,914	10,840	123,753	5,176	1,175	6,351	117,402
2018	113,732	10,918	124,651	5,176	1,199	6,375	118,275
2019	114,536	10,995	125,532	5,176	1,224	6,400	119,132
2020	115,404	11,079	126,483	5,176	1,249	6,425	120,058

Annual Growth Rates (%)

1990-2000	1.56%	1.56%	1.56%	1.68%	0.00%	1.68%	1.55%
2000-2007	0.85%	0.85%	0.85%	0.37%	106.71%	0.96%	0.85%
2007-2010	-0.40%	-0.40%	-0.40%	0.72%	52.14%	3.93%	-0.61%
2010-2020	0.83%	0.83%	0.83%	0.11%	5.35%	0.92%	0.83%

loss factor 0.0960

Form 1.2 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	86,803	8,333	95,136	4,133	0	4,133	91,003
1991	86,627	8,316	94,943	4,012	0	4,012	90,932
1992	87,883	8,437	96,320	3,996	0	3,996	92,324
1993	88,627	8,508	97,135	4,919	0	4,919	92,216
1994	88,621	8,508	97,129	5,020	0	5,020	92,108
1995	89,781	8,619	98,400	4,992	0	4,992	93,408
1996	92,069	8,839	100,908	5,525	0	5,525	95,383
1997	95,699	9,187	104,886	5,615	0	5,615	99,271
1998	94,845	9,105	103,950	5,253	0	5,253	98,697
1999	98,534	9,459	107,994	5,136	1	5,136	102,857
2000	101,331	9,728	111,059	4,883	1	4,885	106,174
2001	95,993	9,215	105,208	4,722	4	4,726	100,482
2002	97,070	9,319	106,389	5,108	14	5,121	101,267
2003	99,171	9,520	108,692	5,426	30	5,456	103,236
2004	101,740	9,767	111,507	4,920	62	4,982	106,526
2005	101,460	9,740	111,200	4,899	95	4,994	106,206
2006	104,719	10,053	114,772	4,869	143	5,012	109,760
2007	107,529	10,323	117,852	5,011	211	5,221	112,630
2008	106,753	10,248	117,001	5,062	358	5,420	111,581
2009	105,695	10,147	115,842	5,092	670	5,761	110,081
2010	106,240	10,199	116,439	5,119	742	5,861	110,578
2011	106,958	10,268	117,226	5,147	810	5,957	111,269
2012	108,339	10,401	118,739	5,175	878	6,054	112,686
2013	109,323	10,495	119,818	5,175	947	6,122	113,696
2014	110,125	10,572	120,697	5,176	1,015	6,191	114,506
2015	110,878	10,644	121,522	5,176	1,084	6,259	115,263
2016	111,592	10,713	122,305	5,176	1,152	6,328	115,977
2017	112,278	10,779	123,056	5,176	1,175	6,351	116,705
2018	112,959	10,844	123,804	5,176	1,199	6,375	117,428
2019	113,632	10,909	124,541	5,176	1,224	6,400	118,141
2020	114,365	10,979	125,344	5,176	1,249	6,425	118,919

Annual Growth Rates (%)

1990-2000	1.56%	1.56%	1.56%	1.68%	0.00%	1.68%	1.55%
2000-2007	0.85%	0.85%	0.85%	0.37%	106.71%	0.96%	0.85%
2007-2010	-0.40%	-0.40%	-0.40%	0.72%	52.14%	3.93%	-0.61%
2010-2020	0.74%	0.74%	0.74%	0.11%	5.35%	0.92%	0.73%

loss factor 0.0960

Form 1.2 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	86,803	8,333	95,136	4,133	0	4,133	91,003
1991	86,627	8,316	94,943	4,012	0	4,012	90,932
1992	87,883	8,437	96,320	3,996	0	3,996	92,324
1993	88,627	8,508	97,135	4,919	0	4,919	92,216
1994	88,621	8,508	97,129	5,020	0	5,020	92,108
1995	89,781	8,619	98,400	4,992	0	4,992	93,408
1996	92,069	8,839	100,908	5,525	0	5,525	95,383
1997	95,699	9,187	104,886	5,615	0	5,615	99,271
1998	94,845	9,105	103,950	5,253	0	5,253	98,697
1999	98,534	9,459	107,994	5,136	1	5,136	102,857
2000	101,331	9,728	111,059	4,883	1	4,885	106,174
2001	95,993	9,215	105,208	4,722	4	4,726	100,482
2002	97,070	9,319	106,389	5,108	14	5,121	101,267
2003	99,171	9,520	108,692	5,426	30	5,456	103,236
2004	101,740	9,767	111,507	4,920	62	4,982	106,526
2005	101,460	9,740	111,200	4,899	95	4,994	106,206
2006	104,719	10,053	114,772	4,869	143	5,012	109,760
2007	107,529	10,323	117,852	5,011	211	5,221	112,630
2008	106,753	10,248	117,001	5,062	358	5,420	111,581
2009	105,695	10,147	115,842	5,092	670	5,761	110,081
2010	106,240	10,199	116,439	5,119	742	5,861	110,578
2011	106,887	10,261	117,149	5,147	810	5,957	111,192
2012	108,199	10,387	118,586	5,175	878	6,054	112,532
2013	109,130	10,476	119,606	5,175	947	6,122	113,484
2014	109,880	10,548	120,428	5,176	1,015	6,191	114,237
2015	110,588	10,616	121,204	5,176	1,084	6,259	114,945
2016	111,214	10,677	121,891	5,176	1,152	6,328	115,563
2017	111,813	10,734	122,547	5,176	1,175	6,351	116,195
2018	112,414	10,792	123,205	5,176	1,199	6,375	116,830
2019	113,004	10,848	123,853	5,176	1,224	6,400	117,453
2020	113,665	10,912	124,577	5,176	1,249	6,425	118,152

Annual Growth Rates (%)

1990-2000	1.56%	1.56%	1.56%	1.68%	0.00%	1.68%	1.55%
2000-2007	0.85%	0.85%	0.85%	0.37%	106.71%	0.96%	0.85%
2007-2010	-0.40%	-0.40%	-0.40%	0.72%	52.14%	3.93%	-0.61%
2010-2020	0.68%	0.68%	0.68%	0.11%	5.35%	0.92%	0.66%

loss factor 0.0960

Form 1.3 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,152	4,571	3,465	1,398	615	16,203
1991	6,274	4,423	2,959	1,273	598	15,526
1992	5,584	4,687	3,345	1,302	626	15,544
1993	6,195	4,993	3,402	1,193	648	16,431
1994	6,003	4,977	3,493	1,276	660	16,408
1995	6,444	5,507	3,397	1,164	680	17,192
1996	7,193	5,509	3,609	1,192	686	18,189
1997	6,954	5,822	3,866	1,256	669	18,567
1998	7,938	6,117	3,775	1,029	666	19,526
1999	8,114	6,186	3,188	1,231	680	19,399
2000	8,240	6,678	3,109	946	685	19,658
2001	7,816	6,023	2,832	1,259	624	18,554
2002	8,461	6,243	2,848	1,336	670	19,557
2003	8,181	6,812	2,812	1,005	638	19,450
2004	7,517	6,794	3,496	1,163	732	19,702
2005	8,642	6,641	3,104	1,150	719	20,257
2006	10,758	7,405	3,176	1,317	780	23,435
2007	9,045	7,034	3,458	1,580	771	21,888
2008	9,664	7,061	3,514	1,425	796	22,459
2009	9,676	6,993	3,436	1,325	792	22,221
2010	9,814	7,042	3,451	1,324	803	22,433
2011	9,980	7,078	3,488	1,321	818	22,686
2012	10,169	7,141	3,565	1,323	840	23,038
2013	10,363	7,195	3,594	1,325	853	23,331
2014	10,562	7,249	3,597	1,327	860	23,595
2015	10,761	7,298	3,601	1,328	866	23,854
2016	10,965	7,344	3,608	1,329	871	24,116
2017	11,172	7,386	3,610	1,329	876	24,373
2018	11,383	7,426	3,610	1,329	882	24,630
2018	11,599	7,467	3,606	1,329	886	24,887
2020	11,853	7,510	3,598	1,329	892	25,182

Annual Growth Rates (%)

1990-2000	2.97%	3.86%	-1.08%	-3.83%	1.08%	1.95%
2000-2007	1.34%	0.75%	1.53%	7.60%	1.70%	1.55%
2007-2010	2.75%	0.03%	-0.06%	-5.71%	1.37%	0.82%
2010-2020	1.91%	0.65%	0.42%	0.04%	1.06%	1.16%

Form 1.3 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,152	4,571	3,465	1,398	615	16,203
1991	6,274	4,423	2,959	1,273	598	15,526
1992	5,584	4,687	3,345	1,302	626	15,544
1993	6,195	4,993	3,402	1,193	648	16,431
1994	6,003	4,977	3,493	1,276	660	16,408
1995	6,444	5,507	3,397	1,164	680	17,192
1996	7,193	5,509	3,609	1,192	686	18,189
1997	6,954	5,822	3,866	1,256	669	18,567
1998	7,938	6,117	3,775	1,029	666	19,526
1999	8,114	6,186	3,188	1,231	680	19,399
2000	8,240	6,678	3,109	946	685	19,658
2001	7,816	6,023	2,832	1,259	624	18,554
2002	8,461	6,243	2,848	1,336	670	19,557
2003	8,181	6,812	2,812	1,005	638	19,450
2004	7,517	6,794	3,496	1,163	732	19,702
2005	8,642	6,641	3,104	1,150	719	20,257
2006	10,758	7,405	3,176	1,317	780	23,435
2007	9,045	7,034	3,458	1,580	771	21,888
2008	9,664	7,061	3,514	1,425	796	22,459
2009	9,676	6,993	3,436	1,325	792	22,221
2010	9,814	7,042	3,451	1,324	803	22,434
2011	9,979	7,066	3,489	1,321	818	22,674
2012	10,169	7,117	3,566	1,323	840	23,015
2013	10,362	7,158	3,595	1,325	853	23,294
2014	10,560	7,201	3,597	1,327	860	23,545
2015	10,759	7,237	3,600	1,328	866	23,790
2016	10,962	7,261	3,606	1,329	871	24,029
2017	11,169	7,283	3,606	1,329	876	24,263
2018	11,379	7,303	3,604	1,329	882	24,497
2018	11,594	7,323	3,597	1,329	886	24,731
2020	11,846	7,345	3,587	1,329	892	25,000

Annual Growth Rates (%)

1990-2000	2.97%	3.86%	-1.08%	-3.83%	1.08%	1.95%
2000-2007	1.34%	0.75%	1.53%	7.60%	1.70%	1.55%
2007-2010	2.75%	0.03%	-0.06%	-5.71%	1.37%	0.82%
2010-2020	1.90%	0.42%	0.39%	0.04%	1.06%	1.09%

Form 1.3 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	6,152	4,571	3,465	1,398	615	16,203
1991	6,274	4,423	2,959	1,273	598	15,526
1992	5,584	4,687	3,345	1,302	626	15,544
1993	6,195	4,993	3,402	1,193	648	16,431
1994	6,003	4,977	3,493	1,276	660	16,408
1995	6,444	5,507	3,397	1,164	680	17,192
1996	7,193	5,509	3,609	1,192	686	18,189
1997	6,954	5,822	3,866	1,256	669	18,567
1998	7,938	6,117	3,775	1,029	666	19,526
1999	8,114	6,186	3,188	1,231	680	19,399
2000	8,240	6,678	3,109	946	685	19,658
2001	7,816	6,023	2,832	1,259	624	18,554
2002	8,461	6,243	2,848	1,336	670	19,557
2003	8,181	6,812	2,812	1,005	638	19,450
2004	7,517	6,794	3,496	1,163	732	19,702
2005	8,642	6,641	3,104	1,150	719	20,257
2006	10,758	7,405	3,176	1,317	780	23,435
2007	9,045	7,034	3,458	1,580	771	21,888
2008	9,664	7,061	3,514	1,425	796	22,459
2009	9,676	6,993	3,436	1,325	792	22,221
2010	9,814	7,042	3,451	1,324	803	22,433
2011	9,979	7,054	3,489	1,321	818	22,662
2012	10,168	7,094	3,566	1,323	840	22,991
2013	10,361	7,125	3,596	1,325	853	23,260
2014	10,559	7,157	3,598	1,327	860	23,501
2015	10,758	7,185	3,602	1,328	866	23,739
2016	10,959	7,195	3,607	1,329	871	23,961
2017	11,166	7,202	3,607	1,329	876	24,180
2018	11,375	7,209	3,604	1,329	882	24,398
2018	11,590	7,216	3,596	1,329	886	24,618
2020	11,841	7,228	3,584	1,329	892	24,875

Annual Growth Rates (%)

1990-2000	2.97%	3.86%	-1.08%	-3.83%	1.08%	1.95%
2000-2007	1.34%	0.75%	1.53%	7.60%	1.70%	1.55%
2007-2010	2.75%	0.03%	-0.06%	-5.71%	1.37%	0.82%
2010-2020	1.90%	0.26%	0.38%	0.04%	1.06%	1.04%

Form 1.4 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,203	1,504	17,707	694	0	694	17,013	61
1991	15,526	1,441	16,967	673	0	673	16,294	63
1992	15,544	1,443	16,987	671	0	671	16,316	64
1993	16,431	1,514	17,944	826	0	826	17,119	61
1994	16,408	1,510	17,917	843	0	843	17,074	61
1995	17,192	1,586	18,778	838	0	838	17,940	59
1996	18,189	1,674	19,864	927	0	927	18,936	57
1997	18,567	1,710	20,277	943	0	943	19,334	58
1998	19,526	1,808	21,334	882	0	882	20,452	55
1999	19,399	1,798	21,197	862	0	862	20,335	57
2000	19,658	1,827	21,485	820	0	820	20,665	58
2001	18,554	1,720	20,275	819	1	821	19,454	59
2002	19,557	1,807	21,364	926	4	931	20,433	56
2003	19,450	1,792	21,241	970	10	980	20,261	58
2004	19,702	1,826	21,528	862	20	881	20,647	59
2005	20,257	1,868	22,125	967	30	997	21,127	57
2006	23,435	2,180	25,615	920	45	966	24,649	51
2007	21,888	2,019	23,907	1,004	67	1,071	22,836	56
2008	22,459	2,070	24,528	1,010	113	1,123	23,405	54
2009	22,221	2,037	24,258	1,012	212	1,224	23,034	54
2010	22,433	2,055	24,488	1,014	235	1,248	23,240	54
2011	22,686	2,077	24,763	1,015	256	1,271	23,491	54
2012	23,038	2,109	25,148	1,017	278	1,295	23,853	54
2013	23,331	2,135	25,466	1,017	300	1,316	24,150	54
2014	23,595	2,159	25,754	1,017	321	1,338	24,416	53
2015	23,854	2,182	26,036	1,017	343	1,360	24,676	53
2016	24,116	2,205	26,321	1,017	364	1,381	24,940	53
2017	24,373	2,229	26,602	1,017	372	1,389	25,213	53
2018	24,630	2,254	26,884	1,017	379	1,396	25,488	53
2019	24,887	2,278	27,165	1,017	387	1,404	25,761	53
2020	25,182	2,306	27,487	1,017	395	1,412	26,075	52

Annual Growth Rates (%)

1990-2000	1.95%	1.96%	1.95%	1.68%	0.00%	1.69%	1.96%	-0.40%
2000-2007	1.55%	1.44%	1.54%	2.94%	0.00%	3.89%	1.44%	-0.58%
2007-2010	0.82%	0.59%	0.80%	0.30%	52.14%	5.23%	0.59%	-1.21%
2010-2020	1.16%	1.16%	1.16%	0.03%	5.35%	1.24%	1.16%	-0.33%

Form 1.4 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,203	1,504	17,707	694	0	694	17,013	61
1991	15,526	1,441	16,967	673	0	673	16,294	63
1992	15,544	1,443	16,987	671	0	671	16,316	64
1993	16,431	1,514	17,944	826	0	826	17,119	61
1994	16,408	1,510	17,917	843	0	843	17,074	61
1995	17,192	1,586	18,778	838	0	838	17,940	59
1996	18,189	1,674	19,864	927	0	927	18,936	57
1997	18,567	1,710	20,277	943	0	943	19,334	58
1998	19,526	1,808	21,334	882	0	882	20,452	55
1999	19,399	1,798	21,197	862	0	862	20,335	57
2000	19,658	1,827	21,485	820	0	820	20,665	58
2001	18,554	1,720	20,275	819	1	821	19,454	59
2002	19,557	1,807	21,364	926	4	931	20,433	56
2003	19,450	1,792	21,241	970	10	980	20,261	58
2004	19,702	1,826	21,528	862	20	881	20,647	59
2005	20,257	1,868	22,125	967	30	997	21,127	57
2006	23,435	2,180	25,615	920	45	966	24,649	51
2007	21,888	2,019	23,907	1,004	67	1,071	22,836	56
2008	22,459	2,070	24,528	1,010	113	1,123	23,405	54
2009	22,221	2,037	24,258	1,012	212	1,224	23,034	54
2010	22,434	2,055	24,488	1,014	235	1,248	23,240	54
2011	22,674	2,076	24,750	1,015	256	1,271	23,479	54
2012	23,015	2,107	25,122	1,017	278	1,295	23,827	54
2013	23,294	2,132	25,426	1,017	300	1,316	24,109	54
2014	23,545	2,154	25,699	1,017	321	1,338	24,360	53
2015	23,790	2,176	25,966	1,017	343	1,360	24,606	53
2016	24,029	2,197	26,225	1,017	364	1,381	24,844	53
2017	24,263	2,219	26,482	1,017	372	1,389	25,093	53
2018	24,497	2,241	26,737	1,017	379	1,396	25,341	53
2019	24,731	2,263	26,993	1,017	387	1,404	25,589	53
2020	25,000	2,288	27,288	1,017	395	1,412	25,876	52

Annual Growth Rates (%)

1990-2000	1.95%	1.96%	1.95%	1.68%	0.00%	1.69%	1.96%	-0.40%
2000-2007	1.55%	1.44%	1.54%	2.94%	0.00%	3.89%	1.44%	-0.58%
2007-2010	0.82%	0.59%	0.80%	0.30%	52.14%	5.23%	0.59%	-1.21%
2010-2020	1.09%	1.08%	1.09%	0.03%	5.35%	1.24%	1.08%	-0.33%

Form 1.4 - PG&E
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	16,203	1,504	17,707	694	0	694	17,013	61
1991	15,526	1,441	16,967	673	0	673	16,294	63
1992	15,544	1,443	16,987	671	0	671	16,316	64
1993	16,431	1,514	17,944	826	0	826	17,119	61
1994	16,408	1,510	17,917	843	0	843	17,074	61
1995	17,192	1,586	18,778	838	0	838	17,940	59
1996	18,189	1,674	19,864	927	0	927	18,936	57
1997	18,567	1,710	20,277	943	0	943	19,334	58
1998	19,526	1,808	21,334	882	0	882	20,452	55
1999	19,399	1,798	21,197	862	0	862	20,335	57
2000	19,658	1,827	21,485	820	0	820	20,665	58
2001	18,554	1,720	20,275	819	1	821	19,454	59
2002	19,557	1,807	21,364	926	4	931	20,433	56
2003	19,450	1,792	21,241	970	10	980	20,261	58
2004	19,702	1,826	21,528	862	20	881	20,647	59
2005	20,257	1,868	22,125	967	30	997	21,127	57
2006	23,435	2,180	25,615	920	45	966	24,649	51
2007	21,888	2,019	23,907	1,004	67	1,071	22,836	56
2008	22,459	2,070	24,528	1,010	113	1,123	23,405	54
2009	22,221	2,037	24,258	1,012	212	1,224	23,034	54
2010	22,433	2,055	24,488	1,014	235	1,248	23,240	54
2011	22,662	2,075	24,737	1,015	256	1,271	23,465	54
2012	22,991	2,105	25,095	1,017	278	1,295	23,800	54
2013	23,260	2,129	25,389	1,017	300	1,316	24,072	54
2014	23,501	2,150	25,651	1,017	321	1,338	24,313	53
2015	23,739	2,171	25,910	1,017	343	1,360	24,550	53
2016	23,961	2,190	26,151	1,017	364	1,381	24,770	53
2017	24,180	2,211	26,391	1,017	372	1,389	25,002	53
2018	24,398	2,231	26,629	1,017	379	1,396	25,233	53
2019	24,618	2,252	26,869	1,017	387	1,404	25,465	53
2020	24,875	2,276	27,151	1,017	395	1,412	25,739	52

Annual Growth Rates (%)

1990-2000	1.95%	1.96%	1.95%	1.68%	0.00%	1.69%	1.96%	-0.40%
2000-2007	1.55%	1.44%	1.54%	2.94%	0.00%	3.89%	1.44%	-0.58%
2007-2010	0.82%	0.59%	0.80%	0.30%	52.14%	5.23%	0.59%	-1.21%
2010-2020	1.04%	1.03%	1.04%	0.03%	5.35%	1.24%	1.03%	-0.33%

Form 1.5 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	23,034	24,232	24,572	24,866	1.052	1.067	1.080
2010	23,240	24,450	24,792	25,089	1.052	1.067	1.080
2011	23,491	24,714	25,060	25,360	1.052	1.067	1.080
2012	23,853	25,094	25,445	25,750	1.052	1.067	1.080
2013	24,150	25,406	25,762	26,071	1.052	1.067	1.080
2014	24,416	25,686	26,046	26,358	1.052	1.067	1.080
2015	24,676	25,960	26,324	26,639	1.052	1.067	1.080
2016	24,940	26,237	26,605	26,924	1.052	1.067	1.080
2017	25,213	26,525	26,897	27,219	1.052	1.067	1.080
2018	25,488	26,814	27,190	27,515	1.052	1.067	1.080
2019	25,761	27,101	27,481	27,810	1.052	1.067	1.080

Form 1.5 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	23,034	24,232	24,572	24,866	1.052	1.067	1.080
2010	23,240	24,450	24,792	25,089	1.052	1.067	1.080
2011	23,479	24,700	25,046	25,346	1.052	1.067	1.080
2012	23,827	25,067	25,418	25,722	1.052	1.067	1.080
2013	24,109	25,364	25,719	26,027	1.052	1.067	1.080
2014	24,360	25,628	25,987	26,298	1.052	1.067	1.080
2015	24,606	25,886	26,249	26,563	1.052	1.067	1.080
2016	24,844	26,137	26,503	26,820	1.052	1.067	1.080
2017	25,093	26,399	26,769	27,090	1.052	1.067	1.080
2018	25,341	26,660	27,033	27,357	1.052	1.067	1.080
2019	25,589	26,921	27,298	27,625	1.052	1.067	1.080

Form 1.5 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2009	23,034	24,232	24,572	24,866	1.052	1.067	1.080
2010	23,240	24,450	24,792	25,089	1.052	1.067	1.080
2011	23,465	24,686	25,032	25,332	1.052	1.067	1.080
2012	23,800	25,039	25,390	25,694	1.052	1.067	1.080
2013	24,072	25,325	25,680	25,987	1.052	1.067	1.080
2014	24,313	25,578	25,936	26,247	1.052	1.067	1.080
2015	24,550	25,828	26,189	26,503	1.052	1.067	1.080
2016	24,770	26,059	26,424	26,740	1.052	1.067	1.080
2017	25,002	26,303	26,671	26,991	1.052	1.067	1.080
2018	25,233	26,546	26,918	27,240	1.052	1.067	1.080
2019	25,465	26,790	27,166	27,491	1.052	1.067	1.080

Form 1.7a - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Private Supply by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	7	383	2,433	1,173	8	129	0	4,133
1991	7	410	2,225	1,231	9	131	0	4,012
1992	6	414	2,225	1,212	10	131	0	3,996
1993	7	437	3,113	1,215	3	144	0	4,919
1994	0	442	3,248	1,203	3	124	0	5,020
1995	0	443	3,239	1,183	3	124	0	4,992
1996	0	446	3,734	1,217	3	125	0	5,525
1997	0	438	3,790	1,272	3	112	0	5,615
1998	0	435	3,418	1,285	3	113	0	5,253
1999	0	441	3,416	1,178	0	101	0	5,136
2000	1	439	3,154	1,191	0	100	0	4,885
2001	3	441	2,911	1,371	0	0	0	4,726
2002	7	446	3,143	1,524	0	1	0	5,121
2003	12	355	3,469	1,614	0	5	0	5,456
2004	22	330	2,981	1,640	2	6	0	4,982
2005	30	462	2,896	1,589	6	10	0	4,994
2006	42	649	2,854	1,433	9	26	0	5,012
2007	63	700	3,287	1,127	12	33	0	5,221
2008	105	821	3,301	1,128	15	50	0	5,420
2009	186	1,058	3,305	1,128	18	66	0	5,761
2010	221	1,102	3,310	1,128	19	80	0	5,861
2011	255	1,145	3,314	1,129	20	94	0	5,957
2012	288	1,188	3,318	1,129	22	108	0	6,054
2013	322	1,218	3,321	1,129	23	110	0	6,122
2014	355	1,248	3,324	1,129	24	111	0	6,191
2015	389	1,277	3,328	1,129	24	112	0	6,259
2016	422	1,307	3,331	1,129	25	114	0	6,328
2017	432	1,320	3,331	1,129	26	114	0	6,351
2018	442	1,334	3,331	1,129	26	114	0	6,375
2019	452	1,348	3,331	1,129	26	115	0	6,400
2020	462	1,362	3,331	1,129	26	115	0	6,425

Annual Growth Rates (%)

1990-2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000-2007	90.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.96%
2007-2010	51.94%	16.33%	0.23%	0.06%	17.18%	34.71%	0.00%	3.93%
2010-2020	7.63%	2.14%	0.07%	0.01%	3.07%	3.65%	0.00%	0.92%

Form 2.2 - PG&E Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Planning Area Economic and Demographic Assumptions

Year	Household Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	10,450,128	3,897,421	2.68	352,574	64,501	1,759
1991	10,678,197	3,961,902	2.70	351,035	63,059	1,799
1992	10,874,483	4,011,740	2.71	362,430	60,849	1,827
1993	11,037,375	4,055,134	2.72	364,535	59,339	1,857
1994	11,125,194	4,095,706	2.72	370,458	59,046	1,881
1995	11,221,517	4,135,477	2.71	384,840	61,455	1,908
1996	11,331,199	4,173,736	2.71	403,080	64,770	1,932
1997	11,538,191	4,216,615	2.74	424,314	76,975	1,956
1998	11,684,836	4,265,384	2.74	457,472	87,095	1,986
1999	11,859,729	4,319,650	2.75	489,084	101,414	2,033
2000	12,058,806	4,359,746	2.77	547,532	128,405	2,078
2001	12,295,514	4,419,162	2.78	535,218	116,082	2,122
2002	12,473,122	4,477,394	2.79	519,565	108,030	2,176
2003	12,634,462	4,537,430	2.78	520,800	108,757	2,218
2004	12,790,590	4,603,998	2.78	541,272	114,111	2,251
2005	12,942,358	4,676,762	2.77	558,680	129,549	2,285
2006	13,105,920	4,745,589	2.76	587,328	137,832	2,311
2007	13,289,604	4,803,541	2.77	605,169	133,797	2,341
2008	13,462,647	4,862,421	2.77	603,010	133,587	2,372
2009	13,638,790	4,922,326	2.77	601,824	132,516	2,403
2010	13,817,475	4,983,037	2.77	613,544	134,736	2,431
2011	13,999,359	5,044,807	2.78	634,279	139,604	2,459
2012	14,184,525	5,107,654	2.78	654,062	145,742	2,488
2013	14,373,034	5,171,606	2.78	671,766	149,294	2,518
2014	14,564,951	5,236,677	2.78	688,053	151,226	2,548
2015	14,760,366	5,302,900	2.78	702,775	153,076	2,578
2016	14,959,336	5,370,289	2.79	717,839	155,145	2,608
2017	15,161,941	5,438,869	2.79	733,336	157,188	2,637
2018	15,368,260	5,508,671	2.79	748,922	159,166	2,666
2019	15,578,381	5,579,720	2.79	764,248	160,979	2,695
2020	15,792,388	5,652,047	2.79	779,702	162,521	2,723
Annual Growth Rates (%)						
1990-2000	1.44%	1.13%	0.31%	4.50%	0.00%	1.68%
2000-2007	1.40%	1.39%	0.00%	1.44%	0.00%	1.72%
2007-2010	1.31%	1.23%	0.08%	0.46%	0.23%	1.27%
2010-2020	1.34%	1.27%	0.08%	2.43%	1.89%	1.14%

Form 2.3 Electricity Prices - PG&E									
	residential			commercial			industrial		
YEAR	low rate	mid rate	high rate	low rate	mid rate	high rate	low rate	mid rate	high rate
1980	9.42	9.42	9.42	11.86	11.86	11.86	9.08	9.08	9.08
1981	10.94	10.94	10.94	13.92	13.92	13.92	10.48	10.48	10.48
1982	10.54	10.54	10.54	13.13	13.13	13.13	10.60	10.60	10.60
1983	10.07	10.07	10.07	12.80	12.80	12.80	11.25	11.25	11.25
1984	11.92	11.92	11.92	15.04	15.04	15.04	13.43	13.43	13.43
1985	12.67	12.67	12.67	16.31	16.31	16.31	14.51	14.51	14.51
1986	12.62	12.62	12.62	16.18	16.18	16.18	13.42	13.42	13.42
1987	11.33	11.33	11.33	13.98	13.98	13.98	9.90	9.90	9.90
1988	12.14	12.14	12.14	13.63	13.63	13.63	9.26	9.26	9.26
1989	13.40	13.40	13.40	14.27	14.27	14.27	9.73	9.73	9.73
1990	13.78	13.78	13.78	14.42	14.42	14.42	9.62	9.62	9.62
1991	14.33	14.33	14.33	14.66	14.66	14.66	9.85	9.85	9.85
1992	14.72	14.72	14.72	15.17	15.17	15.17	9.65	9.65	9.65
1993	14.74	14.74	14.74	14.87	14.87	14.87	9.25	9.25	9.25
1994	14.69	14.69	14.69	14.74	14.74	14.74	8.87	8.87	8.87
1995	13.34	13.34	13.34	13.33	13.33	13.33	8.51	8.51	8.51
1996	13.69	13.69	13.69	12.83	12.83	12.83	7.75	7.75	7.75
1997	13.46	13.46	13.46	12.61	12.61	12.61	7.30	7.30	7.30
1998	12.11	12.11	12.11	8.83	8.83	8.83	6.83	6.83	6.83
1999	11.93	11.93	11.93	8.93	8.93	8.93	7.45	7.45	7.45
2000	11.68	11.68	11.68	8.69	8.69	8.69	7.39	7.39	7.39
2001	12.44	12.44	12.44	8.87	8.87	8.87	13.64	13.64	13.64
2002	12.53	12.53	12.53	12.27	12.27	12.27	12.30	12.30	12.30
2003	12.89	12.89	12.89	13.87	13.87	13.87	12.51	12.51	12.51
2004	13.00	13.00	13.00	13.49	13.49	13.49	11.58	11.58	11.58
2005	13.29	13.29	13.29	13.06	13.06	13.06	10.85	10.85	10.85
2006	14.63	14.63	14.63	13.69	13.69	13.69	10.67	10.67	10.67
2007	14.77	14.77	14.77	13.63	13.63	13.63	10.02	10.02	10.02
2008	13.90	13.90	13.90	12.75	12.75	12.75	8.96	8.96	8.96
2009	14.18	14.18	14.18	13.14	13.14	13.14	9.42	9.42	9.42
2010	14.18	14.18	14.18	13.14	13.14	13.14	9.42	9.42	9.42
2011	14.18	14.31	14.45	13.14	13.27	13.40	9.42	9.51	9.60
2012	14.18	14.45	14.73	13.14	13.40	13.65	9.42	9.60	9.78
2013	14.18	14.60	15.01	13.14	13.53	13.92	9.42	9.70	9.97
2014	14.18	14.74	15.30	13.14	13.67	14.18	9.42	9.79	10.16
2015	14.18	14.88	15.59	13.14	13.80	14.46	9.42	9.89	10.36
2016	14.18	15.16	16.12	13.14	14.05	14.95	9.42	10.07	10.71
2017	14.18	15.44	16.67	13.14	14.31	15.46	9.42	10.25	11.07
2018	14.18	15.72	17.24	13.14	14.57	15.98	9.42	10.44	11.45
2019	14.18	16.01	17.82	13.14	14.84	16.52	9.42	10.63	11.84
2020	14.18	16.30	18.43	13.14	15.11	17.09	9.42	10.83	12.24

Form 1.1 - PG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): High Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,118	778	1,962	238	65	114	5,275
1991	2,169	758	1,733	418	60	122	5,260
1992	1,963	651	1,530	162	50	90	4,445
1993	2,126	696	1,732	96	40	95	4,786
1994	2,211	755	1,840	71	52	98	5,027
1995	1,966	707	1,950	77	47	76	4,822
1996	1,982	706	2,081	44	55	81	4,950
1997	1,978	723	2,014	163	64	67	5,010
1998	2,283	789	1,914	319	70	67	5,442
1999	2,422	831	1,837	236	71	64	5,461
2000	2,164	797	1,909	288	79	55	5,291
2001	2,029	642	1,770	296	50	67	4,853
2002	2,086	819	1,547	272	59	35	4,818
2003	2,051	887	1,471	268	85	49	4,810
2004	2,024	812	1,538	304	65	68	4,811
2005	1,935	779	1,560	329	41	79	4,724
2006	2,021	923	1,517	286	48	104	4,899
2007	2,038	873	1,516	388	46	50	4,912
2008	2,001	829	1,460	371	46	51	4,757
2009	2,016	845	1,434	361	46	51	4,754
2010	2,036	849	1,430	352	46	52	4,765
2011	2,057	849	1,437	347	46	53	4,789
2012	2,078	845	1,444	342	46	53	4,809
2013	2,100	841	1,438	335	46	54	4,814
2014	2,122	837	1,424	328	46	55	4,812
2015	2,145	833	1,410	321	46	55	4,810
2016	2,167	829	1,396	314	46	56	4,808
2017	2,190	825	1,381	307	46	57	4,806
2018	2,214	820	1,364	300	46	58	4,803
2019	2,238	815	1,346	294	46	59	4,798
2020	2,262	810	1,327	287	46	59	4,791
Annual Growth Rates (%)							
1990-2000	0.2%	0.2%	-0.3%	1.9%	-	-7.0%	0.0%
2000-2007	-0.8%	1.3%	-3.2%	4.4%	-7.3%	-1.4%	-1.1%
2007-2010	0.0%	-0.9%	-1.9%	-3.2%	0.0%	1.3%	-1.0%
2010-2020	1.1%	-0.4%	-0.6%	-2.0%	0.0%	1.3%	0.1%

Form 1.1 - PG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Mid Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,118	778	1,962	238	65	114	5,275
1991	2,169	758	1,733	418	60	122	5,260
1992	1,963	651	1,530	162	50	90	4,445
1993	2,126	696	1,732	96	40	95	4,786
1994	2,211	755	1,840	71	52	98	5,027
1995	1,966	707	1,950	77	47	76	4,822
1996	1,982	706	2,081	44	55	81	4,950
1997	1,978	723	2,014	163	64	67	5,010
1998	2,283	789	1,914	319	70	67	5,442
1999	2,422	831	1,837	236	71	64	5,461
2000	2,164	797	1,909	288	79	55	5,291
2001	2,029	642	1,770	296	50	67	4,853
2002	2,086	819	1,547	272	59	35	4,818
2003	2,051	887	1,471	268	85	49	4,810
2004	2,024	812	1,538	304	65	68	4,811
2005	1,935	779	1,560	329	41	79	4,724
2006	2,021	923	1,517	286	48	104	4,899
2007	2,038	873	1,516	388	46	50	4,912
2008	2,001	829	1,460	369	46	51	4,756
2009	2,016	845	1,434	361	46	51	4,754
2010	2,036	849	1,430	352	46	52	4,766
2011	2,057	850	1,438	347	46	53	4,792
2012	2,079	848	1,446	342	46	53	4,814
2013	2,100	845	1,441	335	46	54	4,822
2014	2,122	842	1,431	328	46	55	4,824
2015	2,145	839	1,421	321	46	55	4,827
2016	2,167	837	1,410	314	46	56	4,831
2017	2,191	834	1,399	307	46	57	4,834
2018	2,214	830	1,387	301	46	58	4,836
2019	2,239	827	1,374	294	46	59	4,838
2020	2,263	823	1,359	287	46	59	4,847

Annual Growth Rates (%)

1990-2000	0.22%	0.24%	-0.28%	1.93%	-	-6.96%	0.03%
2000-2007	-0.85%	1.30%	-3.23%	4.36%	-7.30%	-1.45%	-1.06%
2007-2010	-0.05%	-0.91%	-1.93%	-3.15%	0.00%	1.29%	-1.00%
2010-2020	1.06%	-0.28%	-0.39%	-1.97%	0.00%	1.32%	0.18%

Form 1.1 - PG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Low Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,118	778	1,962	238	65	114	5,275
1991	2,169	758	1,733	418	60	122	5,260
1992	1,963	651	1,530	162	50	90	4,445
1993	2,126	696	1,732	96	40	95	4,786
1994	2,211	755	1,840	71	52	98	5,027
1995	1,966	707	1,950	77	47	76	4,822
1996	1,982	706	2,081	44	55	81	4,950
1997	1,978	723	2,014	163	64	67	5,010
1998	2,283	789	1,914	319	70	67	5,442
1999	2,422	831	1,837	236	71	64	5,461
2000	2,164	797	1,909	288	79	55	5,291
2001	2,029	642	1,770	296	50	67	4,853
2002	2,086	819	1,547	272	59	35	4,818
2003	2,051	887	1,471	268	85	49	4,810
2004	2,024	812	1,538	304	65	68	4,811
2005	1,935	779	1,560	329	41	79	4,724
2006	2,021	923	1,517	286	48	104	4,899
2007	2,038	873	1,516	388	46	50	4,912
2008	2,001	829	1,460	369	46	51	4,756
2009	2,016	845	1,434	361	46	51	4,754
2010	2,036	849	1,430	352	46	52	4,766
2011	2,057	851	1,439	348	46	53	4,793
2012	2,079	849	1,447	343	46	53	4,818
2013	2,100	847	1,444	336	46	54	4,828
2014	2,122	845	1,435	330	46	55	4,833
2015	2,145	843	1,427	324	46	55	4,840
2016	2,168	841	1,418	318	46	56	4,847
2017	2,191	839	1,409	313	46	57	4,854
2018	2,215	837	1,400	307	46	58	4,862
2019	2,239	834	1,389	301	46	59	4,868
2020	2,263	831	1,378	296	46	59	4,883

Annual Growth Rates (%)

1990-2000	0.22%	0.24%	-0.28%	1.93%	-	-6.96%	0.03%
2000-2007	-0.85%	1.30%	-3.23%	4.36%	-7.30%	-1.45%	-1.06%
2007-2010	-0.05%	-0.90%	-1.94%	-3.15%	0.00%	1.29%	-1.00%
2010-2020	1.06%	-0.19%	-0.26%	-1.72%	0.00%	1.32%	0.25%

Form 1.1 - SCG Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Low Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,687	710	1,002	2,295	45	67	6,806
1991	2,705	543	954	2,194	34	109	6,539
1992	2,694	399	710	2,452	26	47	6,329
1993	2,620	559	899	2,153	33	58	6,322
1994	2,666	617	990	2,011	44	62	6,390
1995	2,459	578	919	2,494	40	67	6,557
1996	2,482	611	1,257	2,646	48	130	7,174
1997	2,441	709	1,132	3,311	63	87	7,743
1998	2,812	827	1,721	2,900	69	87	8,416
1999	2,870	905	1,757	2,635	87	92	8,347
2000	2,692	867	1,725	2,476	90	87	7,938
2001	2,707	960	1,636	2,556	86	74	8,020
2002	2,673	1,136	2,044	2,195	114	99	8,261
2003	2,558	939	1,529	2,608	102	77	7,814
2004	2,685	968	1,569	2,636	101	66	8,025
2005	2,536	965	1,578	2,427	85	71	7,662
2006	2,544	938	1,458	2,536	87	88	7,651
2007	2,568	948	1,527	2,369	86	107	7,605
2008	2,577	930	1,477	2,343	86	108	7,521
2009	2,596	960	1,457	2,319	86	109	7,528
2010	2,620	974	1,462	2,292	86	111	7,545
2011	2,647	984	1,486	2,268	86	112	7,583
2012	2,674	991	1,513	2,240	86	113	7,618
2013	2,702	999	1,525	2,216	86	115	7,642
2014	2,731	1,008	1,527	2,191	86	116	7,660
2015	2,762	1,017	1,531	2,167	86	118	7,682
2016	2,795	1,027	1,534	2,145	86	119	7,707
2017	2,833	1,037	1,537	2,122	86	121	7,736
2018	2,870	1,047	1,539	2,099	86	122	7,764
2019	2,907	1,057	1,540	2,079	86	124	7,794
2020	2,960	1,066	1,540	2,058	86	126	7,837

Annual Growth Rates (%)

1990-2000	0.02%	2.03%	5.59%	0.76%	-	2.66%	1.55%
2000-2007	-0.67%	1.27%	-1.73%	-0.63%	-0.63%	2.90%	-0.61%
2007-2010	0.67%	0.90%	-1.43%	-1.10%	0.00%	1.22%	-0.26%
2010-2020	1.23%	0.92%	0.64%	-1.09%	0.00%	1.27%	0.36%

Form 1.1 - SCG Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Mid Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,687	710	1,002	2,295	45	67	6,806
1991	2,705	543	954	2,194	34	109	6,539
1992	2,694	399	710	2,452	26	47	6,329
1993	2,620	559	899	2,153	33	58	6,322
1994	2,666	617	990	2,011	44	62	6,390
1995	2,459	578	919	2,494	40	67	6,557
1996	2,482	611	1,257	2,646	48	130	7,174
1997	2,441	709	1,132	3,311	63	87	7,743
1998	2,812	827	1,721	2,900	69	87	8,416
1999	2,870	905	1,757	2,635	87	92	8,347
2000	2,692	867	1,725	2,476	90	87	7,938
2001	2,707	960	1,636	2,556	86	74	8,020
2002	2,673	1,136	2,044	2,195	114	99	8,261
2003	2,558	939	1,529	2,608	102	77	7,814
2004	2,685	968	1,569	2,636	101	66	8,025
2005	2,536	965	1,578	2,427	85	71	7,662
2006	2,544	938	1,458	2,536	87	88	7,651
2007	2,568	948	1,527	2,369	86	107	7,605
2008	2,577	930	1,477	2,343	86	108	7,521
2009	2,596	960	1,457	2,319	86	109	7,528
2010	2,620	973	1,462	2,292	86	111	7,545
2011	2,647	983	1,486	2,268	86	112	7,582
2012	2,674	989	1,512	2,240	86	113	7,615
2013	2,702	996	1,522	2,216	86	115	7,636
2014	2,731	1,004	1,523	2,191	86	116	7,652
2015	2,762	1,012	1,523	2,167	86	118	7,668
2016	2,795	1,021	1,524	2,144	86	119	7,690
2017	2,833	1,030	1,523	2,122	86	121	7,715
2018	2,869	1,038	1,522	2,098	86	122	7,736
2019	2,907	1,047	1,518	2,079	86	124	7,761
2020	2,960	1,055	1,514	2,057	86	126	7,797

Annual Growth Rates (%)

1990-2000	0.02%	2.03%	5.59%	0.76%	-	2.66%	1.55%
2000-2007	-0.67%	1.27%	-1.73%	-0.63%	-0.63%	2.90%	-0.61%
2007-2010	0.67%	0.89%	-1.43%	-1.10%	0.00%	1.22%	-0.26%
2010-2020	1.23%	0.81%	0.50%	-1.10%	0.00%	1.27%	0.31%

Form 1.1 - SCG Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): HIgh Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	2,687	710	1,002	2,295	45	67	6,806
1991	2,705	543	954	2,194	34	109	6,539
1992	2,694	399	710	2,452	26	47	6,329
1993	2,620	559	899	2,153	33	58	6,322
1994	2,666	617	990	2,011	44	62	6,390
1995	2,459	578	919	2,494	40	67	6,557
1996	2,482	611	1,257	2,646	48	130	7,174
1997	2,441	709	1,132	3,311	63	87	7,743
1998	2,812	827	1,721	2,900	69	87	8,416
1999	2,870	905	1,757	2,635	87	92	8,347
2000	2,692	867	1,725	2,476	90	87	7,938
2001	2,707	960	1,636	2,556	86	74	8,020
2002	2,673	1,136	2,044	2,195	114	99	8,261
2003	2,558	939	1,529	2,608	102	77	7,814
2004	2,685	968	1,569	2,636	101	66	8,025
2005	2,536	965	1,578	2,427	85	71	7,662
2006	2,544	938	1,458	2,536	87	88	7,651
2007	2,568	948	1,527	2,369	86	107	7,605
2008	2,577	930	1,477	2,343	86	108	7,521
2009	2,596	960	1,457	2,319	86	109	7,528
2010	2,620	973	1,462	2,292	86	111	7,545
2011	2,647	981	1,486	2,268	86	112	7,580
2012	2,674	986	1,509	2,240	86	113	7,609
2013	2,702	991	1,516	2,215	86	115	7,626
2014	2,731	998	1,513	2,191	86	116	7,635
2015	2,762	1,004	1,509	2,167	86	118	7,646
2016	2,795	1,011	1,505	2,144	86	119	7,660
2017	2,832	1,017	1,498	2,121	86	121	7,676
2018	2,869	1,024	1,489	2,098	86	122	7,688
2019	2,907	1,029	1,479	2,078	86	124	7,702
2020	2,959	1,035	1,466	2,056	86	126	7,728

Annual Growth Rates (%)

1990-2000	0.02%	2.03%	5.59%	0.76%	-	2.66%	1.55%
2000-2007	-0.67%	1.27%	-1.73%	-0.63%	-0.63%	2.90%	-0.61%
2007-2010	0.67%	0.89%	-1.43%	-1.10%	0.00%	1.22%	-0.26%
2010-2020	1.22%	0.63%	0.23%	-1.10%	0.00%	1.27%	0.24%

Form 1.1 - SDG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Low Rate Case

Year	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	338	160	172	8	6	33	717
1991	335	136	82	6	5	23	588
1992	314	143	94	6	4	26	586
1993	327	174	104	5	8	30	648
1994	344	108	60	4	6	16	538
1995	316	118	62	4	6	16	521
1996	317	114	63	6	8	20	527
1997	316	173	29	1	3	7	528
1998	356	127	68	2	7	18	578
1999	382	136	68	2	8	20	616
2000	340	87	125	2	3	9	565
2001	345	149	38	2	6	19	559
2002	341	153	40	3	7	16	559
2003	322	152	34	6	6	14	533
2004	342	155	29	5	6	13	551
2005	321	159	27	5	5	13	530
2006	330	154	29	4	5	25	547
2007	332	155	27	4	4	24	547
2008	312	141	26	4	4	24	511
2009	314	147	25	4	4	24	519
2010	317	149	25	4	4	25	525
2011	321	152	26	4	4	25	532
2012	324	154	27	4	4	25	539
2013	328	157	28	4	4	25	546
2014	331	159	28	4	4	26	553
2015	335	162	29	4	4	26	560
2016	339	164	29	4	4	26	567
2017	343	167	30	4	4	26	574
2018	346	169	30	4	4	27	581
2019	350	171	30	4	4	27	587
2020	355	174	31	4	4	27	595

Annual Growth Rates (%)

1990-2000	0.07%	-5.85%	-3.18%	-13.57%	-	-12.66%	-2.35%
2000-2007	-0.35%	8.57%	-19.52%	12.91%	6.84%	15.67%	-0.47%
2007-2010	-1.49%	-1.30%	-2.33%	-1.17%	0.00%	1.11%	-1.35%
2010-2020	1.12%	1.55%	2.10%	-0.02%	0.00%	1.05%	1.26%

Form 1.1 - SDG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): Mid Rate Case

Year	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	338	160	172	8	6	33	717
1991	335	136	82	6	5	23	588
1992	314	143	94	6	4	26	586
1993	327	174	104	5	8	30	648
1994	344	108	60	4	6	16	538
1995	316	118	62	4	6	16	521
1996	317	114	63	6	8	20	527
1997	316	173	29	1	3	7	528
1998	356	127	68	2	7	18	578
1999	382	136	68	2	8	20	616
2000	340	87	125	2	3	9	565
2001	345	149	38	2	6	19	559
2002	341	153	40	3	7	16	559
2003	322	152	34	6	6	14	533
2004	342	155	29	5	6	13	551
2005	321	159	27	5	5	13	530
2006	330	154	29	4	5	25	547
2007	332	155	27	4	4	24	547
2008	312	141	26	4	4	24	511
2009	314	147	25	4	4	24	519
2010	317	149	25	4	4	25	525
2011	321	152	26	4	4	25	532
2012	324	154	27	4	4	25	539
2013	328	156	28	4	4	25	546
2014	331	159	28	4	4	26	552
2015	335	161	29	4	4	26	559
2016	339	163	29	4	4	26	566
2017	343	165	30	4	4	26	573
2018	346	168	30	4	4	27	579
2019	350	170	30	4	4	27	586
2020	355	172	31	4	4	27	593

Annual Growth Rates (%)

1990-2000	0.07%	-5.85%	-3.18%	-13.57%	-	-12.66%	-2.35%
2000-2007	-0.35%	8.57%	-19.52%	12.91%	6.84%	15.67%	-0.47%
2007-2010	-1.49%	-1.31%	-2.33%	-1.17%	0.00%	1.11%	-1.35%
2010-2020	1.12%	1.45%	2.09%	-0.04%	0.00%	1.05%	1.23%

Form 1.1 - SDG&E Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms): High Rate Case

Year	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	338	160	172	8	6	33	717
1991	335	136	82	6	5	23	588
1992	314	143	94	6	4	26	586
1993	327	174	104	5	8	30	648
1994	344	108	60	4	6	16	538
1995	316	118	62	4	6	16	521
1996	317	114	63	6	8	20	527
1997	316	173	29	1	3	7	528
1998	356	127	68	2	7	18	578
1999	382	136	68	2	8	20	616
2000	340	87	125	2	3	9	565
2001	345	149	38	2	6	19	559
2002	341	153	40	3	7	16	559
2003	322	152	34	6	6	14	533
2004	342	155	29	5	6	13	551
2005	321	159	27	5	5	13	530
2006	330	154	29	4	5	25	547
2007	332	155	27	4	4	24	547
2008	312	141	26	4	4	24	511
2009	314	147	25	4	4	24	519
2010	317	149	25	4	4	25	525
2011	321	151	26	4	4	25	532
2012	324	153	27	4	4	25	539
2013	328	156	28	4	4	25	545
2014	331	158	28	4	4	26	551
2015	335	160	29	4	4	26	558
2016	339	162	29	4	4	26	564
2017	342	164	29	4	4	26	571
2018	346	165	30	4	4	27	577
2019	350	167	30	4	4	27	583
2020	355	169	31	4	4	27	590

Annual Growth Rates (%)

1990-2000	0.07%	-5.85%	-3.18%	-13.57%	-	-12.66%	-2.35%
2000-2007	-0.35%	8.57%	-19.52%	12.91%	6.84%	15.67%	-0.47%
2007-2010	-1.49%	-1.31%	-2.33%	-1.17%	0.00%	1.11%	-1.35%
2010-2020	1.12%	1.29%	2.07%	-0.05%	0.00%	1.05%	1.18%

Form 1.1 - Other Natural Gas Planning Area
Natural Gas Consumption by Sector (10^6 Therms)

Year	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	72	19	1	1	1	1	95
1991	61	24	1	1	1	1	88
1992	67	16	8	1	0	2	94
1993	72	17	10	1	0	3	102
1994	75	19	9	3	0	3	109
1995	71	14	11	4	0	2	103
1996	70	20	16	4	0	3	113
1997	76	21	17	4	0	3	121
1998	91	23	14	3	0	3	134
1999	86	22	17	4	0	3	132
2000	75	17	20	4	0	3	119
2001	78	20	15	2	0	2	117
2002	80	20	17	3	0	3	124
2003	84	23	16	4	0	3	130
2004	99	26	8	3	1	3	140
2005	93	25	2	1	0	3	124
2006	94	33	7	2	0	15	150
2007	95	33	2	0	15	7	152
2008	96	34	2	0	15	7	153
2009	97	34	2	0	15	7	154
2010	98	34	2	0	15	7	156
2011	99	35	2	0	15	7	157
2012	100	35	2	0	15	7	159
2013	102	35	2	0	15	7	160
2014	103	36	2	0	15	7	162
2015	104	36	2	0	15	7	163
2016	105	36	2	0	15	7	165
2017	106	37	2	0	15	7	166
2018	108	37	2	0	15	7	168
2019	108	37	2	0	15	7	168
2020	108	37	2	0	15	7	168

Annual Growth Rates (%)

1990-2000	0.38%	-1.42%	40.45%	19.58%	-	8.89%	2.30%
2000-2007	3.41%	10.47%	-30.20%	-42.58%	89.20%	13.24%	3.55%
2007-2010	1.13%	1.00%	0.00%	0.00%	0.00%	0.00%	0.93%
2010-2020	0.90%	1.00%	0.00%	0.00%	0.00%	0.00%	0.94%

Form 1.1 - Statewide End-User Natural Gas Consumption
Consumption by Sector (10^6 Therms): Low Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	5,215	1,667	3,137	2,542	117	215	12,893
1991	5,270	1,461	2,770	2,619	100	255	12,475
1992	5,038	1,209	2,341	2,620	80	166	11,454
1993	5,145	1,446	2,745	2,254	82	186	11,859
1994	5,296	1,499	2,899	2,088	102	178	12,063
1995	4,812	1,418	2,941	2,579	93	161	12,003
1996	4,852	1,450	3,416	2,700	111	235	12,764
1997	4,811	1,626	3,192	3,479	131	164	13,403
1998	5,541	1,767	3,717	3,224	146	175	14,571
1999	5,760	1,894	3,680	2,877	166	179	14,556
2000	5,271	1,768	3,779	2,769	172	154	13,913
2001	5,159	1,772	3,459	2,856	142	162	13,549
2002	5,180	2,128	3,648	2,472	180	153	13,762
2003	5,016	2,001	3,049	2,886	193	142	13,288
2004	5,150	1,960	3,145	2,948	173	150	13,527
2005	4,885	1,929	3,166	2,763	131	166	13,039
2006	4,989	2,048	3,011	2,828	139	232	13,247
2007	5,034	2,009	3,072	2,762	152	187	13,216
2008	4,986	1,933	2,964	2,717	152	189	12,941
2009	5,024	1,986	2,918	2,684	152	192	12,956
2010	5,071	2,007	2,919	2,649	152	194	12,992
2011	5,124	2,021	2,953	2,619	152	196	13,065
2012	5,177	2,029	2,990	2,587	152	199	13,134
2013	5,231	2,038	2,998	2,556	152	201	13,176
2014	5,287	2,048	2,992	2,526	152	203	13,208
2015	5,346	2,058	2,988	2,496	152	206	13,245
2016	5,407	2,069	2,983	2,467	152	208	13,286
2017	5,472	2,080	2,977	2,439	152	211	13,331
2018	5,538	2,090	2,971	2,410	152	214	13,374
2019	5,604	2,099	2,961	2,385	152	216	13,417
2020	5,685	2,108	2,951	2,359	152	219	13,473

Annual Growth Rates (%)

1990-2000	0.11%	0.60%	1.88%	0.86%	-	-3.30%	0.76%
2000-2007	-0.66%	1.84%	-2.91%	-0.04%	-1.74%	2.82%	-0.73%
2007-2010	0.25%	-0.04%	-1.69%	-1.38%	0.00%	1.18%	-0.57%
2010-2020	1.15%	0.51%	0.22%	-1.17%	0.00%	1.21%	0.36%

Form 1.1 - Statewide End-User Natural Gas Consumption
Consumption by Sector (10^6 Therms)--Mid Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	5,215	1,667	3,137	2,542	117	215	12,893
1991	5,270	1,461	2,770	2,619	100	255	12,475
1992	5,038	1,209	2,341	2,620	80	166	11,454
1993	5,145	1,446	2,745	2,254	82	186	11,859
1994	5,296	1,499	2,899	2,088	102	178	12,063
1995	4,812	1,418	2,941	2,579	93	161	12,003
1996	4,852	1,450	3,416	2,700	111	235	12,764
1997	4,811	1,626	3,192	3,479	131	164	13,403
1998	5,541	1,767	3,717	3,224	146	175	14,571
1999	5,760	1,894	3,680	2,877	166	179	14,556
2000	5,271	1,768	3,779	2,769	172	154	13,913
2001	5,159	1,772	3,459	2,856	142	162	13,549
2002	5,180	2,128	3,648	2,472	180	153	13,762
2003	5,016	2,001	3,049	2,886	193	142	13,288
2004	5,150	1,960	3,145	2,948	173	150	13,527
2005	4,885	1,929	3,166	2,763	131	166	13,039
2006	4,989	2,048	3,011	2,828	139	232	13,247
2007	5,034	2,009	3,072	2,762	152	187	13,216
2008	4,986	1,933	2,964	2,717	152	189	12,941
2009	5,024	1,986	2,919	2,684	152	192	12,956
2010	5,071	2,006	2,920	2,649	152	194	12,992
2011	5,124	2,019	2,953	2,619	152	196	13,063
2012	5,177	2,026	2,987	2,587	152	199	13,127
2013	5,231	2,032	2,993	2,555	152	201	13,164
2014	5,287	2,040	2,984	2,524	152	203	13,190
2015	5,346	2,049	2,974	2,493	152	206	13,218
2016	5,407	2,057	2,965	2,463	152	208	13,251
2017	5,472	2,066	2,953	2,434	152	211	13,287
2018	5,537	2,073	2,940	2,403	152	214	13,319
2019	5,603	2,080	2,924	2,377	152	216	13,353
2020	5,684	2,087	2,905	2,349	152	219	13,396

Annual Growth Rates (%)

1990-2000	0.11%	0.60%	1.88%	0.86%	-	-3.30%	0.76%
2000-2007	-0.66%	1.84%	-2.91%	-0.04%	-1.74%	2.82%	-0.73%
2007-2010	0.25%	-0.05%	-1.68%	-1.38%	0.00%	1.18%	-0.57%
2010-2020	1.15%	0.41%	0.09%	-1.21%	0.00%	1.21%	0.31%

Form 1.1 - Statewide End-User Natural Gas Consumption
Consumption by Sector (10^6 Therms): High Rate Case

	Residential	Commercial	Industrial	Mining	Agricultural	Other	Total Consumption
1990	5,215	1,667	3,137	2,542	117	215	12,893
1991	5,270	1,461	2,770	2,619	100	255	12,475
1992	5,038	1,209	2,341	2,620	80	166	11,454
1993	5,145	1,446	2,745	2,254	82	186	11,859
1994	5,296	1,499	2,899	2,088	102	178	12,063
1995	4,812	1,418	2,941	2,579	93	161	12,003
1996	4,852	1,450	3,416	2,700	111	235	12,764
1997	4,811	1,626	3,192	3,479	131	164	13,403
1998	5,541	1,767	3,717	3,224	146	175	14,571
1999	5,760	1,894	3,680	2,877	166	179	14,556
2000	5,271	1,768	3,779	2,769	172	154	13,913
2001	5,159	1,772	3,459	2,856	142	162	13,549
2002	5,180	2,128	3,648	2,472	180	153	13,762
2003	5,016	2,001	3,049	2,886	193	142	13,288
2004	5,150	1,960	3,145	2,948	173	150	13,527
2005	4,885	1,929	3,166	2,763	131	166	13,039
2006	4,989	2,048	3,011	2,828	139	232	13,247
2007	5,034	2,009	3,072	2,762	152	187	13,216
2008	4,986	1,933	2,964	2,718	152	189	12,943
2009	5,024	1,986	2,918	2,684	152	192	12,956
2010	5,071	2,006	2,919	2,649	152	194	12,992
2011	5,124	2,016	2,951	2,619	152	196	13,058
2012	5,177	2,020	2,982	2,586	152	199	13,116
2013	5,231	2,023	2,983	2,555	152	201	13,145
2014	5,287	2,028	2,967	2,523	152	203	13,160
2015	5,345	2,033	2,949	2,492	152	206	13,177
2016	5,406	2,038	2,931	2,462	152	208	13,197
2017	5,472	2,042	2,910	2,433	152	211	13,219
2018	5,537	2,046	2,885	2,402	152	214	13,236
2019	5,603	2,048	2,857	2,376	152	216	13,251
2020	5,684	2,051	2,825	2,347	152	219	13,277

Annual Growth Rates (%)

1990-2000	0.11%	0.60%	1.88%	0.86%	-	-3.30%	0.76%
2000-2007	-0.66%	1.84%	-2.91%	-0.04%	-1.74%	2.82%	-0.73%
2007-2010	0.25%	-0.05%	-1.69%	-1.38%	0.00%	1.18%	-0.57%
2010-2020	1.15%	0.25%	-0.15%	-1.21%	0.00%	1.21%	0.23%

Form 2.3 - CED 2009 INDUSTRIAL GAS RATES (2005$ per mmtherms)

Here's the 3 scenarios:

1) no increase 2011-2020.
2) Increase per CEC Scenario Analysis "Base Case" (10% over 2010 levels by 2020)
3) Increase per 2007 IEPR Price Forecast (30% over 2010 levels by 2020)

	pge			**scg**			**sdge**		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
1990	0.84	0.84	0.84	0.86	0.86	0.86	0.83	0.83	0.83
1991	0.83	0.83	0.83	0.94	0.94	0.94	0.48	0.48	0.48
1992	0.84	0.84	0.84	0.86	0.86	0.86	0.48	0.48	0.48
1993	0.77	0.77	0.77	0.91	0.91	0.91	0.46	0.46	0.46
1994	0.77	0.77	0.77	0.88	0.88	0.88	0.43	0.43	0.43
1995	0.80	0.80	0.80	0.87	0.87	0.87	0.33	0.33	0.33
1996	0.70	0.70	0.70	0.77	0.77	0.77	0.39	0.39	0.39
1997	0.73	0.73	0.73	0.80	0.80	0.80	0.44	0.44	0.44
1998	0.75	0.75	0.75	0.72	0.72	0.72	0.48	0.48	0.48
1999	0.75	0.75	0.75	0.65	0.65	0.65	0.53	0.53	0.53
2000	0.91	0.91	0.91	0.82	0.82	0.82	0.64	0.64	0.64
2001	0.73	0.73	0.73	0.92	0.92	0.92	1.18	1.18	1.18
2002	0.69	0.69	0.69	0.72	0.72	0.72	0.39	0.39	0.39
2003	0.95	0.95	0.95	0.85	0.85	0.85	0.63	0.63	0.63
2004	0.96	0.96	0.96	0.91	0.91	0.91	0.68	0.68	0.68
2005	1.18	1.18	1.18	1.22	1.22	1.22	0.76	0.76	0.76
2006	1.17	1.17	1.17	1.03	1.03	1.03	0.76	0.76	0.76
2007	1.18	1.18	1.18	1.04	1.04	1.04	0.77	0.77	0.77
2008	1.53	1.53	1.53	1.35	1.35	1.35	0.99	0.99	0.99
2009	1.11	1.11	1.11	0.98	0.98	0.98	0.72	0.72	0.72
2010	1.11	1.11	1.11	0.98	0.98	0.98	0.72	0.72	0.72
2011	1.11	1.12	1.14	0.98	0.99	1.00	0.72	0.73	0.74
2012	1.11	1.13	1.17	0.98	1.00	1.03	0.72	0.73	0.76
2013	1.11	1.14	1.20	0.98	1.01	1.06	0.72	0.74	0.78
2014	1.11	1.15	1.23	0.98	1.02	1.09	0.72	0.75	0.80
2015	1.11	1.16	1.26	0.98	1.02	1.11	0.72	0.75	0.82
2016	1.11	1.17	1.30	0.98	1.03	1.14	0.72	0.76	0.84
2017	1.11	1.18	1.33	0.98	1.04	1.18	0.72	0.77	0.87
2018	1.11	1.20	1.37	0.98	1.05	1.21	0.72	0.78	0.89
2019	1.11	1.21	1.40	0.98	1.07	1.24	0.72	0.78	0.91
2020	1.11	1.22	1.44	0.98	1.08	1.27	0.72	0.79	0.94

Form 2.3 - CED 2009 Commercial Gas Prices $/mBTU (2005$)

Here's the 3 scenarios:

1) no increase 2011-2020.
2) Increase per CEC Scenario Analysis "Base Case" (10% over 2010 levels by 2020)
3) Increase per 2007 IEPR Price Forecast (30% over 2010 levels by 2020)

YEAR	PGE-S1	PGE-S2	PGE-S3	SCG-S1	SCG-S2	SCG-S3	SDGE-S1	SDGE-S2	SDGE-S3
1980	7.35	7.35	7.35	7.16	7.16	7.16	6.53	6.53	6.53
1981	7.61	7.61	7.61	6.86	6.86	6.86	7.35	7.35	7.35
1982	8.06	8.06	8.06	8.38	8.38	8.38	9.09	9.09	9.09
1983	8.26	8.26	8.26	10.85	10.85	10.85	10.16	10.16	10.16
1984	8.39	8.39	8.39	11.10	11.10	11.10	9.94	9.94	9.94
1985	7.65	7.65	7.65	9.87	9.87	9.87	8.34	8.34	8.34
1986	6.36	6.36	6.36	7.53	7.53	7.53	6.98	6.98	6.98
1987	5.95	5.95	5.95	7.67	7.67	7.67	7.00	7.00	7.00
1988	5.38	5.38	5.38	6.57	6.57	6.57	6.55	6.55	6.55
1989	5.34	5.34	5.34	6.19	6.19	6.19	6.46	6.46	6.46
1990	8.37	8.37	8.37	8.59	8.59	8.59	8.32	8.32	8.32
1991	8.31	8.31	8.31	9.37	9.37	9.37	4.76	4.76	4.76
1992	8.39	8.39	8.39	8.56	8.56	8.56	4.84	4.84	4.84
1993	7.69	7.69	7.69	9.10	9.10	9.10	4.57	4.57	4.57
1994	7.72	7.72	7.72	8.81	8.81	8.81	4.33	4.33	4.33
1995	8.02	8.02	8.02	8.72	8.72	8.72	3.33	3.33	3.33
1996	7.02	7.02	7.02	7.67	7.67	7.67	3.89	3.89	3.89
1997	7.30	7.30	7.30	7.98	7.98	7.98	4.37	4.37	4.37
1998	7.53	7.53	7.53	7.17	7.17	7.17	4.84	4.84	4.84
1999	7.48	7.48	7.48	6.46	6.46	6.46	5.32	5.32	5.32
2000	9.09	9.09	9.09	8.21	8.21	8.21	6.45	6.45	6.45
2001	7.27	7.27	7.27	9.22	9.22	9.22	11.81	11.81	11.81
2002	6.87	6.87	6.87	7.25	7.25	7.25	3.93	3.93	3.93
2003	9.46	9.46	9.46	8.47	8.47	8.47	6.29	6.29	6.29
2004	9.56	9.56	9.56	9.08	9.08	9.08	6.85	6.85	6.85
2005	11.77	11.77	11.77	12.22	12.22	12.22	7.60	7.60	7.60
2006	11.70	11.70	11.70	10.32	10.32	10.32	5.71	5.71	5.71
2007	11.78	11.78	11.78	10.39	10.39	10.39	5.75	5.75	5.75
2008	15.29	15.29	15.29	13.49	13.49	13.49	7.46	7.46	7.46
2009	11.07	11.07	11.07	9.77	9.77	9.77	5.40	5.40	5.40
2010	11.07	11.07	11.07	9.77	9.77	9.77	5.40	5.40	5.40
2011	11.04	11.18	11.37	9.77	9.86	10.03	5.40	5.46	5.55
2012	11.04	11.29	11.68	9.77	9.96	10.30	5.40	5.51	5.70
2013	11.04	11.40	11.99	9.77	10.05	10.57	5.40	5.56	5.85
2014	11.04	11.51	12.31	9.77	10.15	10.86	5.40	5.62	6.01
2015	11.04	11.62	12.64	9.77	10.25	11.15	5.40	5.67	6.17
2016	11.04	11.73	12.98	9.77	10.35	11.45	5.40	5.73	6.33
2017	11.04	11.85	13.33	9.77	10.45	11.76	5.40	5.78	6.50
2018	11.04	11.96	13.69	9.77	10.55	12.07	5.40	5.84	6.68
2019	11.04	12.08	14.05	9.77	10.65	12.40	5.40	5.89	6.86
2020	11.04	12.19	14.43	9.77	10.75	12.73	5.40	5.95	7.04

Form 2.3 - CED 2009 Residential Gas Prices for (1977$)

Here's the 3 scenarios:

1) no increase 2011-2020.

2) Increase per CEC Scenario Analysis "Base Case" (10% over 2010 levels by 2020)

3) Increase per 2007 IEPR Price Forecast (30% over 2010 levels by 2020)

	PG&E			SCG			SDG&E		
YEAR	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
1980	27.167	27.167	27.167	24.935	24.935	24.935	23.858	23.858	23.858
1981	26.224	26.224	26.224	23.840	23.840	23.840	26.293	26.293	26.293
1982	27.760	27.760	27.760	28.354	28.354	28.354	30.595	30.595	30.595
1983	29.883	29.883	29.883	35.022	35.022	35.022	38.194	38.194	38.194
1984	31.974	31.974	31.974	35.214	35.214	35.214	39.860	39.860	39.860
1985	30.824	30.824	30.824	33.615	33.615	33.615	33.318	33.318	33.318
1986	26.764	26.764	26.764	29.655	29.655	29.655	28.152	28.152	28.152
1987	25.033	25.033	25.033	30.801	30.801	30.801	29.401	29.401	29.401
1988	25.317	25.317	25.317	30.110	30.110	30.110	29.505	29.505	29.505
1989	26.004	26.004	26.004	27.189	27.189	27.189	27.707	27.707	27.707
1990	28.707	28.707	28.707	28.538	28.538	28.538	28.684	28.684	28.684
1991	28.989	28.989	28.989	31.736	31.736	31.736	27.896	27.896	27.896
1992	27.946	27.946	27.946	28.773	28.773	28.773	27.883	27.883	27.883
1993	26.577	26.577	26.577	30.528	30.528	30.528	29.246	29.246	29.246
1994	27.616	27.616	27.616	30.350	30.350	30.350	29.503	29.503	29.503
1995	28.947	28.947	28.947	31.711	31.711	31.711	28.752	28.752	28.752
1996	26.028	26.028	26.028	30.319	30.319	30.319	29.549	29.549	29.549
1997	26.919	26.919	26.919	31.720	31.720	31.720	31.221	31.221	31.221
1998	27.891	27.891	27.891	30.703	30.703	30.703	32.441	32.441	32.441
1999	28.283	28.283	28.283	27.334	27.334	27.334	33.389	33.389	33.389
2000	33.493	33.493	33.493	32.667	32.667	32.667	34.421	34.421	34.421
2001	23.858	23.858	23.858	30.011	30.011	30.011	52.934	52.934	52.934
2002	27.550	27.550	27.550	26.915	26.915	26.915	27.912	27.912	27.912
2003	36.663	36.663	36.663	34.675	34.675	34.675	34.397	34.397	34.397
2004	37.488	37.488	37.488	37.560	37.560	37.560	36.158	36.158	36.158
2005	40.468	40.468	40.468	37.905	37.905	37.905	38.649	38.649	38.649
2006	40.468	40.468	40.468	37.905	37.905	37.905	38.649	38.649	38.649
2007	40.761	40.761	40.761	38.179	38.179	38.179	38.929	38.929	38.929
2008	52.884	52.884	52.884	49.534	49.534	49.534	50.507	50.507	50.507
2009	38.301	38.301	38.301	35.875	35.875	35.875	36.580	36.580	36.580
2010	38.301	38.301	38.301	35.875	35.875	35.875	36.580	36.580	36.580
2011	38.301	38.672	39.329	35.875	36.223	36.838	36.580	36.934	37.561
2012	38.301	39.046	40.384	35.875	36.573	37.826	36.580	37.291	38.569
2013	38.301	39.424	41.467	35.875	36.927	38.841	36.580	37.652	39.603
2014	38.301	39.805	42.580	35.875	37.284	39.883	36.580	38.016	40.666
2015	38.301	40.191	43.722	35.875	37.645	40.953	36.580	38.384	41.757
2016	38.301	40.580	44.895	35.875	38.010	42.052	36.580	38.756	42.877
2017	38.301	40.972	46.099	35.875	38.377	43.180	36.580	39.131	44.027
2018	38.301	41.369	47.336	35.875	38.749	44.338	36.580	39.509	45.209
2019	38.301	41.769	48.606	35.875	39.124	45.528	36.580	39.892	46.421
2020	38.301	42.173	49.910	35.875	39.502	46.749	36.580	40.278	47.667

Form 1.1 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	6,835	10,042	4,237	224	156	1,479	290	23,263
1991	6,620	9,791	4,075	232	133	1,452	292	22,595
1992	7,000	10,183	3,934	205	155	1,487	290	23,253
1993	6,726	10,080	3,663	199	130	1,548	289	22,635
1994	6,723	9,405	3,473	220	160	1,535	289	21,805
1995	6,788	9,862	3,517	321	140	1,607	290	22,526
1996	6,917	9,744	3,686	332	175	1,569	292	22,715
1997	7,106	10,035	3,409	313	179	1,643	296	22,980
1998	7,183	9,857	3,399	302	173	1,509	296	22,719
1999	7,140	9,922	3,371	263	223	1,549	284	22,751
2000	7,519	10,105	3,466	252	181	1,631	284	23,437
2001	7,339	9,334	3,456	278	181	1,603	298	22,489
2002	7,370	10,115	3,686	242	163	1,763	287	23,626
2003	7,818	10,379	3,690	234	162	1,697	305	24,285
2004	7,951	11,081	3,547	296	223	1,466	311	24,875
2005	7,961	10,942	3,599	189	159	1,473	314	24,638
2006	8,467	11,170	3,717	185	161	1,566	293	25,558
2007	8,426	10,977	3,618	180	215	1,545	298	25,258
2008	8,487	10,957	3,507	171	183	1,532	299	25,138
2009	8,453	10,708	3,438	168	184	1,511	300	24,764
2010	8,497	10,648	3,422	165	185	1,511	301	24,729
2011	8,590	10,677	3,445	161	186	1,527	301	24,887
2012	8,674	10,683	3,526	158	186	1,551	302	25,082
2013	8,747	10,695	3,549	154	187	1,567	303	25,203
2014	8,813	10,721	3,551	151	188	1,570	303	25,298
2015	8,869	10,747	3,550	148	189	1,573	304	25,379
2016	8,924	10,771	3,549	146	189	1,576	305	25,461
2017	8,984	10,792	3,544	143	190	1,582	305	25,540
2018	9,047	10,809	3,538	140	191	1,587	306	25,619
2019	9,111	10,827	3,531	138	192	1,592	307	25,697
2020	9,176	10,844	3,522	136	193	1,598	307	25,775

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	0.06%	-1.99%	1.16%	1.54%	0.98%	-0.21%	0.07%
2000-2007	1.64%	1.19%	0.62%	-4.69%	2.47%	-0.77%	0.67%	1.07%
2007-2010	0.28%	-1.01%	-1.84%	-2.78%	-4.89%	-0.75%	0.36%	-0.70%
2010-2020	0.77%	0.18%	0.29%	-1.96%	0.41%	0.56%	0.21%	0.42%

Form 1.1 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	6,835	10,042	4,237	224	156	1,479	290	23,263
1991	6,620	9,791	4,075	232	133	1,452	292	22,595
1992	7,000	10,183	3,934	205	155	1,487	290	23,253
1993	6,726	10,080	3,663	199	130	1,548	289	22,635
1994	6,723	9,405	3,473	220	160	1,535	289	21,805
1995	6,788	9,862	3,517	321	140	1,607	290	22,526
1996	6,917	9,744	3,686	332	175	1,569	292	22,715
1997	7,106	10,035	3,409	313	179	1,643	296	22,980
1998	7,183	9,857	3,399	302	173	1,509	296	22,719
1999	7,140	9,922	3,371	263	223	1,549	284	22,751
2000	7,519	10,105	3,466	252	181	1,631	284	23,437
2001	7,339	9,334	3,456	278	181	1,603	298	22,489
2002	7,370	10,115	3,686	242	163	1,763	287	23,626
2003	7,818	10,379	3,690	234	162	1,697	305	24,285
2004	7,951	11,081	3,547	296	223	1,466	311	24,875
2005	7,961	10,942	3,599	189	159	1,473	314	24,638
2006	8,467	11,170	3,717	185	161	1,566	293	25,558
2007	8,426	10,977	3,618	180	215	1,545	298	25,258
2008	8,487	10,957	3,507	171	183	1,532	299	25,138
2009	8,453	10,709	3,438	168	184	1,511	300	24,764
2010	8,497	10,649	3,422	165	185	1,511	301	24,729
2011	8,589	10,659	3,445	161	186	1,527	301	24,868
2012	8,673	10,647	3,525	158	186	1,551	302	25,043
2013	8,745	10,641	3,547	154	187	1,567	303	25,144
2014	8,810	10,649	3,547	151	188	1,570	303	25,219
2015	8,865	10,656	3,544	148	189	1,573	304	25,279
2016	8,919	10,646	3,541	146	189	1,576	305	25,323
2017	8,977	10,631	3,534	143	190	1,582	305	25,362
2018	9,039	10,614	3,524	140	191	1,587	306	25,401
2019	9,101	10,597	3,511	138	192	1,592	307	25,437
2020	9,164	10,579	3,496	135	193	1,598	307	25,473

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	0.06%	-1.99%	1.16%	1.54%	0.98%	-0.21%	0.07%
2000-2007	1.64%	1.19%	0.62%	-4.69%	2.47%	-0.77%	0.67%	1.07%
2007-2010	0.28%	-1.01%	-1.85%	-2.78%	-4.89%	-0.75%	0.36%	-0.70%
2010-2020	0.76%	-0.07%	0.22%	-1.97%	0.41%	0.56%	0.21%	0.30%

Form 1.1 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Consumption
1990	6,835	10,042	4,237	224	156	1,479	290	23,263
1991	6,620	9,791	4,075	232	133	1,452	292	22,595
1992	7,000	10,183	3,934	205	155	1,487	290	23,253
1993	6,726	10,080	3,663	199	130	1,548	289	22,635
1994	6,723	9,405	3,473	220	160	1,535	289	21,805
1995	6,788	9,862	3,517	321	140	1,607	290	22,526
1996	6,917	9,744	3,686	332	175	1,569	292	22,715
1997	7,106	10,035	3,409	313	179	1,643	296	22,980
1998	7,183	9,857	3,399	302	173	1,509	296	22,719
1999	7,140	9,922	3,371	263	223	1,549	284	22,751
2000	7,519	10,105	3,466	252	181	1,631	284	23,437
2001	7,339	9,334	3,456	278	181	1,603	298	22,489
2002	7,370	10,115	3,686	242	163	1,763	287	23,626
2003	7,818	10,379	3,690	234	162	1,697	305	24,285
2004	7,951	11,081	3,547	296	223	1,466	311	24,875
2005	7,961	10,942	3,599	189	159	1,473	314	24,638
2006	8,467	11,170	3,717	185	161	1,566	293	25,558
2007	8,426	10,977	3,618	180	215	1,545	298	25,258
2008	8,487	10,957	3,507	171	183	1,532	299	25,138
2009	8,453	10,709	3,438	168	184	1,511	300	24,764
2010	8,497	10,649	3,422	165	185	1,511	301	24,729
2011	8,588	10,642	3,445	161	186	1,527	301	24,851
2012	8,672	10,612	3,525	158	186	1,551	302	25,007
2013	8,743	10,588	3,548	154	187	1,567	303	25,091
2014	8,807	10,579	3,549	151	188	1,570	303	25,148
2015	8,861	10,568	3,546	148	189	1,573	304	25,189
2016	8,914	10,529	3,541	146	189	1,576	305	25,200
2017	8,971	10,486	3,531	143	190	1,582	305	25,208
2018	9,031	10,439	3,518	140	191	1,587	306	25,213
2019	9,092	10,393	3,502	138	192	1,592	307	25,216
2020	9,154	10,346	3,485	135	193	1,598	307	25,218

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	0.06%	-1.99%	1.16%	1.54%	0.98%	-0.21%	0.07%
2000-2007	1.64%	1.19%	0.62%	-4.69%	2.47%	-0.77%	0.67%	1.07%
2007-2010	0.28%	-1.01%	-1.84%	-2.78%	-4.89%	-0.75%	0.36%	-0.70%
2010-2020	0.75%	-0.29%	0.18%	-1.97%	0.41%	0.56%	0.21%	0.20%

Form 1.1b - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	6,835	10,004	3,366	224	156	1,291	290	22,166
1991	6,620	9,736	3,090	232	133	1,264	292	21,368
1992	7,000	10,118	3,001	205	155	1,313	290	22,081
1993	6,726	10,013	2,707	199	130	1,368	289	21,432
1994	6,723	9,121	2,402	220	160	1,342	289	20,258
1995	6,788	9,527	2,395	321	140	1,379	290	20,839
1996	6,917	9,471	2,504	332	175	1,476	292	21,168
1997	7,106	9,735	2,369	313	179	1,544	296	21,541
1998	7,183	9,555	2,359	302	173	1,478	296	21,346
1999	7,140	9,617	2,290	263	223	1,539	284	21,355
2000	7,519	9,809	2,515	252	181	1,625	284	22,184
2001	7,338	9,190	2,448	272	181	1,603	298	21,330
2002	7,367	9,904	2,384	231	163	1,763	287	22,098
2003	7,815	10,166	2,348	221	162	1,696	305	22,713
2004	7,948	10,894	2,408	283	223	1,464	311	23,531
2005	7,957	10,765	2,433	177	159	1,470	314	23,275
2006	8,462	10,989	2,548	173	160	1,562	293	24,188
2007	8,419	10,885	2,587	168	214	1,542	298	24,111
2008	8,475	10,852	2,472	159	182	1,528	299	23,968
2009	8,435	10,589	2,403	156	183	1,507	300	23,572
2010	8,475	10,521	2,386	153	184	1,506	301	23,526
2011	8,564	10,543	2,408	149	184	1,522	301	23,672
2012	8,645	10,542	2,489	146	185	1,546	302	23,855
2013	8,714	10,551	2,512	142	186	1,562	303	23,970
2014	8,777	10,575	2,513	139	187	1,565	303	24,058
2015	8,828	10,597	2,512	136	187	1,568	304	24,132
2016	8,881	10,619	2,510	134	188	1,571	305	24,207
2017	8,938	10,638	2,506	131	189	1,576	305	24,283
2018	8,999	10,655	2,500	128	190	1,582	306	24,360
2019	9,063	10,671	2,492	126	190	1,587	307	24,436
2020	9,126	10,687	2,483	123	191	1,593	307	24,511

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	-0.20%	-2.87%	1.16%	1.54%	2.32%	-0.21%	0.01%
2000-2007	1.63%	1.50%	0.40%	-5.58%	2.39%	-0.75%	0.67%	1.20%
2007-2010	0.22%	-1.13%	-2.66%	-3.11%	-4.94%	-0.77%	0.36%	-0.82%
2010-2020	0.74%	0.16%	0.40%	-2.13%	0.41%	0.56%	0.21%	0.41%

Form 1.1b - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	6,835	10,004	3,366	224	156	1,291	290	22,166
1991	6,620	9,736	3,090	232	133	1,264	292	21,368
1992	7,000	10,118	3,001	205	155	1,313	290	22,081
1993	6,726	10,013	2,707	199	130	1,368	289	21,432
1994	6,723	9,121	2,402	220	160	1,342	289	20,258
1995	6,788	9,527	2,395	321	140	1,379	290	20,839
1996	6,917	9,471	2,504	332	175	1,476	292	21,168
1997	7,106	9,735	2,369	313	179	1,544	296	21,541
1998	7,183	9,555	2,359	302	173	1,478	296	21,346
1999	7,140	9,617	2,290	263	223	1,539	284	21,355
2000	7,519	9,809	2,515	252	181	1,625	284	22,184
2001	7,338	9,190	2,448	272	181	1,603	298	21,330
2002	7,367	9,904	2,384	231	163	1,763	287	22,098
2003	7,815	10,166	2,348	221	162	1,696	305	22,713
2004	7,948	10,894	2,408	283	223	1,464	311	23,531
2005	7,957	10,765	2,433	177	159	1,470	314	23,275
2006	8,462	10,989	2,548	173	160	1,562	293	24,188
2007	8,419	10,885	2,587	168	214	1,542	298	24,111
2008	8,475	10,853	2,472	159	182	1,528	299	23,969
2009	8,435	10,589	2,403	156	183	1,507	300	23,573
2010	8,475	10,522	2,385	153	184	1,506	301	23,526
2011	8,564	10,525	2,408	149	184	1,522	301	23,653
2012	8,644	10,506	2,488	146	185	1,546	302	23,816
2013	8,712	10,497	2,509	142	186	1,562	303	23,911
2014	8,774	10,502	2,509	139	187	1,565	303	23,979
2015	8,825	10,506	2,506	136	187	1,568	304	24,032
2016	8,875	10,494	2,503	134	188	1,571	305	24,069
2017	8,931	10,478	2,495	131	189	1,576	305	24,105
2018	8,991	10,460	2,485	128	190	1,582	306	24,141
2019	9,053	10,441	2,472	126	190	1,587	307	24,176
2020	9,114	10,422	2,458	123	191	1,593	307	24,209

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	-0.20%	-2.87%	1.16%	1.54%	2.32%	-0.21%	0.01%
2000-2007	1.63%	1.50%	0.40%	-5.58%	2.39%	-0.75%	0.67%	1.20%
2007-2010	0.22%	-1.12%	-2.66%	-3.11%	-4.94%	-0.77%	0.36%	-0.82%
2010-2020	0.73%	-0.09%	0.30%	-2.14%	0.41%	0.56%	0.21%	0.29%

Form 1.1b - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street lighting	Total Sales
1990	6,835	10,004	3,366	224	156	1,291	290	22,166
1991	6,620	9,736	3,090	232	133	1,264	292	21,368
1992	7,000	10,118	3,001	205	155	1,313	290	22,081
1993	6,726	10,013	2,707	199	130	1,368	289	21,432
1994	6,723	9,121	2,402	220	160	1,342	289	20,258
1995	6,788	9,527	2,395	321	140	1,379	290	20,839
1996	6,917	9,471	2,504	332	175	1,476	292	21,168
1997	7,106	9,735	2,369	313	179	1,544	296	21,541
1998	7,183	9,555	2,359	302	173	1,478	296	21,346
1999	7,140	9,617	2,290	263	223	1,539	284	21,355
2000	7,519	9,809	2,515	252	181	1,625	284	22,184
2001	7,338	9,190	2,448	272	181	1,603	298	21,330
2002	7,367	9,904	2,384	231	163	1,763	287	22,098
2003	7,815	10,166	2,348	221	162	1,696	305	22,713
2004	7,948	10,894	2,408	283	223	1,464	311	23,531
2005	7,957	10,765	2,433	177	159	1,470	314	23,275
2006	8,462	10,989	2,548	173	160	1,562	293	24,188
2007	8,419	10,885	2,587	168	214	1,542	298	24,111
2008	8,475	10,853	2,472	159	182	1,528	299	23,969
2009	8,435	10,589	2,403	156	183	1,507	300	23,573
2010	8,475	10,522	2,386	153	184	1,506	301	23,526
2011	8,563	10,508	2,408	149	184	1,522	301	23,636
2012	8,643	10,471	2,488	146	185	1,546	302	23,780
2013	8,710	10,444	2,510	142	186	1,562	303	23,857
2014	8,771	10,432	2,511	139	187	1,565	303	23,908
2015	8,821	10,418	2,508	136	187	1,568	304	23,942
2016	8,871	10,376	2,502	134	188	1,571	305	23,947
2017	8,925	10,333	2,492	131	189	1,576	305	23,951
2018	8,984	10,285	2,479	128	190	1,582	306	23,953
2019	9,044	10,238	2,464	126	190	1,587	307	23,955
2020	9,104	10,189	2,446	123	191	1,593	307	23,954

Last historic year is 2007. Sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	0.96%	-0.20%	-2.87%	1.16%	1.54%	2.32%	-0.21%	0.01%
2000-2007	1.63%	1.50%	0.40%	-5.58%	2.39%	-0.75%	0.67%	1.20%
2007-2010	0.22%	-1.12%	-2.66%	-3.11%	-4.94%	-0.77%	0.36%	-0.82%
2010-2020	0.72%	-0.32%	0.25%	-2.14%	0.41%	0.56%	0.21%	0.18%

Form 1.2 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	23,263	2,992	26,255	1,097	0	1,097	25,159
1991	22,595	2,885	25,480	1,227	0	1,227	24,253
1992	23,253	2,981	26,234	1,172	0	1,172	25,062
1993	22,635	2,893	25,529	1,204	0	1,204	24,325
1994	21,805	2,735	24,540	1,548	0	1,548	22,993
1995	22,526	2,813	25,339	1,686	0	1,686	23,653
1996	22,715	2,858	25,573	1,548	0	1,548	24,025
1997	22,980	2,908	25,888	1,439	0	1,439	24,449
1998	22,719	2,882	25,601	1,373	0	1,373	24,228
1999	22,751	2,883	25,634	1,396	0	1,396	24,238
2000	23,437	2,995	26,432	1,253	0	1,253	25,179
2001	22,489	2,880	25,368	1,158	1	1,159	24,210
2002	23,626	2,983	26,609	1,525	3	1,528	25,081
2003	24,285	3,066	27,351	1,566	5	1,572	25,780
2004	24,875	3,177	28,052	1,337	7	1,345	26,707
2005	24,638	3,142	27,781	1,353	10	1,364	26,417
2006	25,558	3,265	28,824	1,357	13	1,370	27,454
2007	25,258	3,255	28,513	1,129	18	1,147	27,366
2008	25,138	3,236	28,373	1,138	31	1,169	27,204
2009	24,764	3,182	27,946	1,143	49	1,191	26,755
2010	24,729	3,176	27,905	1,148	56	1,203	26,702
2011	24,887	3,196	28,083	1,153	62	1,215	26,868
2012	25,082	3,220	28,302	1,158	69	1,227	27,076
2013	25,203	3,236	28,439	1,158	76	1,233	27,206
2014	25,298	3,248	28,546	1,158	82	1,240	27,306
2015	25,379	3,258	28,637	1,158	89	1,247	27,390
2016	25,461	3,268	28,729	1,158	96	1,253	27,475
2017	25,540	3,278	28,818	1,158	99	1,257	27,561
2018	25,619	3,289	28,908	1,158	102	1,259	27,648
2019	25,697	3,299	28,996	1,158	104	1,262	27,734
2020	25,775	3,309	29,084	1,158	106	1,264	27,820

Annual Growth Rates (%)

1990-2000	0.07%	0.01%	0.07%	1.34%	0.00%	1.34%	0.01%
2000-2007	1.07%	1.20%	1.09%	-1.47%	93.13%	-1.25%	1.20%
2007-2010	-0.70%	-0.82%	-0.72%	0.54%	46.50%	1.61%	-0.82%
2010-2020	0.42%	0.41%	0.41%	0.09%	6.69%	0.49%	0.41%

Form 1.2 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	23,263	2,992	26,255	1,097	0	1,097	25,159
1991	22,595	2,885	25,480	1,227	0	1,227	24,253
1992	23,253	2,981	26,234	1,172	0	1,172	25,062
1993	22,635	2,893	25,529	1,204	0	1,204	24,325
1994	21,805	2,735	24,540	1,548	0	1,548	22,993
1995	22,526	2,813	25,339	1,686	0	1,686	23,653
1996	22,715	2,858	25,573	1,548	0	1,548	24,025
1997	22,980	2,908	25,888	1,439	0	1,439	24,449
1998	22,719	2,882	25,601	1,373	0	1,373	24,228
1999	22,751	2,883	25,634	1,396	0	1,396	24,238
2000	23,437	2,995	26,432	1,253	0	1,253	25,179
2001	22,489	2,880	25,368	1,158	1	1,159	24,210
2002	23,626	2,983	26,609	1,525	3	1,528	25,081
2003	24,285	3,066	27,351	1,566	5	1,572	25,780
2004	24,875	3,177	28,052	1,337	7	1,345	26,707
2005	24,638	3,142	27,781	1,353	10	1,364	26,417
2006	25,558	3,265	28,824	1,357	13	1,370	27,454
2007	25,258	3,255	28,513	1,129	18	1,147	27,366
2008	25,138	3,236	28,374	1,138	31	1,169	27,204
2009	24,764	3,182	27,946	1,143	49	1,191	26,755
2010	24,729	3,176	27,905	1,148	56	1,203	26,702
2011	24,868	3,193	28,061	1,153	62	1,215	26,846
2012	25,043	3,215	28,258	1,158	69	1,227	27,032
2013	25,144	3,228	28,372	1,158	76	1,233	27,139
2014	25,219	3,237	28,456	1,158	82	1,240	27,216
2015	25,279	3,244	28,523	1,158	89	1,247	27,277
2016	25,323	3,249	28,572	1,158	96	1,253	27,319
2017	25,362	3,254	28,616	1,158	99	1,257	27,359
2018	25,401	3,259	28,660	1,158	102	1,259	27,400
2019	25,437	3,264	28,701	1,158	104	1,262	27,440
2020	25,473	3,268	28,741	1,158	106	1,264	27,477

Annual Growth Rates (%)

1990-2000	0.07%	0.01%	0.07%	1.34%	0.00%	1.34%	0.01%
2000-2007	1.07%	1.20%	1.09%	-1.47%	93.13%	-1.25%	1.20%
2007-2010	-0.70%	-0.82%	-0.72%	0.54%	46.50%	1.61%	-0.82%
2010-2020	0.30%	0.29%	0.30%	0.09%	6.69%	0.49%	0.29%

Form 1.2 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	23,263	2,992	26,255	1,097	0	1,097	25,159
1991	22,595	2,885	25,480	1,227	0	1,227	24,253
1992	23,253	2,981	26,234	1,172	0	1,172	25,062
1993	22,635	2,893	25,529	1,204	0	1,204	24,325
1994	21,805	2,735	24,540	1,548	0	1,548	22,993
1995	22,526	2,813	25,339	1,686	0	1,686	23,653
1996	22,715	2,858	25,573	1,548	0	1,548	24,025
1997	22,980	2,908	25,888	1,439	0	1,439	24,449
1998	22,719	2,882	25,601	1,373	0	1,373	24,228
1999	22,751	2,883	25,634	1,396	0	1,396	24,238
2000	23,437	2,995	26,432	1,253	0	1,253	25,179
2001	22,489	2,880	25,368	1,158	1	1,159	24,210
2002	23,626	2,983	26,609	1,525	3	1,528	25,081
2003	24,285	3,066	27,351	1,566	5	1,572	25,780
2004	24,875	3,177	28,052	1,337	7	1,345	26,707
2005	24,638	3,142	27,781	1,353	10	1,364	26,417
2006	25,558	3,265	28,824	1,357	13	1,370	27,454
2007	25,258	3,255	28,513	1,129	18	1,147	27,366
2008	25,138	3,236	28,374	1,138	31	1,169	27,204
2009	24,764	3,182	27,946	1,143	49	1,191	26,755
2010	24,729	3,176	27,906	1,148	56	1,203	26,702
2011	24,851	3,191	28,041	1,153	62	1,215	26,826
2012	25,007	3,210	28,217	1,158	69	1,227	26,991
2013	25,091	3,221	28,311	1,158	76	1,233	27,078
2014	25,148	3,228	28,375	1,158	82	1,240	27,135
2015	25,189	3,232	28,421	1,158	89	1,247	27,174
2016	25,200	3,233	28,433	1,158	96	1,253	27,179
2017	25,208	3,233	28,441	1,158	99	1,257	27,184
2018	25,213	3,234	28,446	1,158	102	1,259	27,187
2019	25,216	3,234	28,450	1,158	104	1,262	27,189
2020	25,218	3,234	28,452	1,158	106	1,264	27,188

Annual Growth Rates (%)

1990-2000	0.07%	0.01%	0.07%	1.34%	0.00%	1.34%	0.01%
2000-2007	1.07%	1.20%	1.09%	-1.47%	93.13%	-1.25%	1.20%
2007-2010	-0.70%	-0.82%	-0.72%	0.54%	46.50%	1.61%	-0.82%
2010-2020	0.20%	0.18%	0.19%	0.09%	6.69%	0.49%	0.18%

Form 1.3 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,587	2,490	663	8	226	4,974
1991	1,666	2,343	599	9	215	4,831
1992	1,639	2,391	707	11	244	4,992
1993	1,428	2,167	580	9	239	4,423
1994	1,675	2,190	643	11	257	4,776
1995	1,528	2,244	676	10	268	4,725
1996	1,561	2,295	716	13	270	4,855
1997	1,885	2,437	661	12	275	5,270
1998	1,872	2,511	616	14	257	5,270
1999	1,781	2,410	606	18	264	5,079
2000	1,714	2,399	601	14	270	4,999
2001	1,539	2,102	596	14	261	4,512
2002	1,655	2,336	643	13	296	4,943
2003	1,773	2,379	683	12	284	5,131
2004	1,711	2,556	611	20	242	5,139
2005	1,776	2,672	634	13	261	5,356
2006	1,939	2,855	697	12	248	5,751
2007	2,119	2,640	675	16	274	5,723
2008	2,062	2,825	628	16	278	5,809
2009	1,970	2,642	586	15	263	5,477
2010	1,983	2,626	583	15	263	5,471
2011	2,003	2,632	588	15	265	5,504
2012	2,023	2,632	602	15	270	5,542
2013	2,041	2,632	605	15	272	5,566
2014	2,059	2,636	605	15	273	5,588
2015	2,076	2,639	604	15	273	5,608
2016	2,093	2,643	603	15	274	5,629
2017	2,111	2,646	602	16	275	5,649
2018	2,129	2,648	601	16	276	5,670
2019	2,149	2,650	599	16	277	5,691
2020	2,171	2,652	597	16	278	5,714

Annual Growth Rates (%)

1990-2000	0.77%	-0.37%	-0.97%	5.28%	1.81%	0.05%
2000-2007	3.08%	1.37%	1.65%	1.98%	0.18%	1.95%
2007-2010	-2.18%	-0.17%	-4.72%	-1.90%	-1.35%	-1.49%
2010-2020	0.91%	0.10%	0.23%	0.41%	0.58%	0.43%

Form 1.3 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,587	2,490	663	8	226	4,974
1991	1,666	2,343	599	9	215	4,831
1992	1,639	2,391	707	11	244	4,992
1993	1,428	2,167	580	9	239	4,423
1994	1,675	2,190	643	11	257	4,776
1995	1,528	2,244	676	10	268	4,725
1996	1,561	2,295	716	13	270	4,855
1997	1,885	2,437	661	12	275	5,270
1998	1,872	2,511	616	14	257	5,270
1999	1,781	2,410	606	18	264	5,079
2000	1,714	2,399	601	14	270	4,999
2001	1,539	2,102	596	14	261	4,512
2002	1,655	2,336	643	13	296	4,943
2003	1,773	2,379	683	12	284	5,131
2004	1,711	2,556	611	20	242	5,139
2005	1,776	2,672	634	13	261	5,356
2006	1,939	2,855	697	12	248	5,751
2007	2,119	2,640	675	16	274	5,723
2008	2,062	2,825	628	16	278	5,809
2009	1,970	2,642	587	15	263	5,477
2010	1,983	2,627	584	15	263	5,471
2011	2,003	2,630	588	15	265	5,502
2012	2,023	2,627	602	15	270	5,536
2013	2,041	2,623	606	15	272	5,558
2014	2,059	2,625	605	15	273	5,577
2015	2,075	2,625	604	15	273	5,593
2016	2,092	2,624	604	15	274	5,609
2017	2,110	2,622	602	16	275	5,624
2018	2,128	2,618	601	16	276	5,639
2018	2,148	2,615	599	16	277	5,655
2020	2,169	2,612	597	16	278	5,672

Annual Growth Rates (%)

1990-2000	0.77%	-0.37%	-0.97%	5.28%	1.81%	0.05%
2000-2007	3.08%	1.37%	1.65%	1.98%	0.18%	1.95%
2007-2010	-2.18%	-0.16%	-4.72%	-1.90%	-1.35%	-1.49%
2010-2020	0.90%	-0.06%	0.23%	0.41%	0.58%	0.36%

Form 1.3 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	1,587	2,490	663	8	226	4,974
1991	1,666	2,343	599	9	215	4,831
1992	1,639	2,391	707	11	244	4,992
1993	1,428	2,167	580	9	239	4,423
1994	1,675	2,190	643	11	257	4,776
1995	1,528	2,244	676	10	268	4,725
1996	1,561	2,295	716	13	270	4,855
1997	1,885	2,437	661	12	275	5,270
1998	1,872	2,511	616	14	257	5,270
1999	1,781	2,410	606	18	264	5,079
2000	1,714	2,399	601	14	270	4,999
2001	1,539	2,102	596	14	261	4,512
2002	1,655	2,336	643	13	296	4,943
2003	1,773	2,379	683	12	284	5,131
2004	1,711	2,556	611	20	242	5,139
2005	1,776	2,672	634	13	261	5,356
2006	1,939	2,855	697	12	248	5,751
2007	2,119	2,640	675	16	274	5,723
2008	2,062	2,825	628	16	278	5,809
2009	1,970	2,642	586	15	263	5,476
2010	1,983	2,627	583	15	263	5,471
2011	2,003	2,624	588	15	265	5,496
2012	2,022	2,615	602	15	270	5,524
2013	2,041	2,607	605	15	272	5,540
2014	2,058	2,602	604	15	273	5,553
2015	2,075	2,597	603	15	273	5,564
2016	2,091	2,587	602	15	274	5,569
2017	2,109	2,575	600	16	275	5,574
2018	2,127	2,563	597	16	276	5,578
2018	2,146	2,551	594	16	277	5,583
2020	2,167	2,538	590	16	278	5,590

Annual Growth Rates (%)

1990-2000	0.77%	-0.37%	-0.97%	5.28%	1.81%	0.05%
2000-2007	3.08%	1.37%	1.65%	1.98%	0.18%	1.95%
2007-2010	-2.18%	-0.17%	-4.73%	-1.90%	-1.35%	-1.49%
2010-2020	0.89%	-0.34%	0.12%	0.41%	0.58%	0.22%

Form 1.4 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	4,974	536	5,510	184	0	184	5,326	54
1991	4,831	518	5,349	206	0	206	5,143	54
1992	4,992	537	5,529	197	0	197	5,332	54
1993	4,423	473	4,896	202	0	202	4,694	59
1994	4,776	506	5,282	260	0	260	5,022	52
1995	4,725	498	5,223	283	0	283	4,940	55
1996	4,855	515	5,369	260	0	260	5,110	54
1997	5,270	563	5,833	242	0	242	5,591	50
1998	5,270	564	5,834	231	0	231	5,603	49
1999	5,079	543	5,622	234	0	234	5,387	51
2000	4,999	536	5,535	210	0	210	5,325	54
2001	4,512	482	4,994	207	0	207	4,787	58
2002	4,943	521	5,464	288	1	289	5,176	55
2003	5,131	541	5,673	298	2	299	5,373	55
2004	5,139	547	5,687	250	2	253	5,434	56
2005	5,356	572	5,928	244	3	248	5,681	53
2006	5,751	616	6,368	245	4	249	6,119	51
2007	5,723	618	6,341	202	6	207	6,134	51
2008	5,809	627	6,435	203	10	213	6,223	50
2009	5,477	589	6,065	203	15	218	5,847	52
2010	5,471	588	6,059	203	18	221	5,838	52
2011	5,504	591	6,096	204	20	223	5,873	52
2012	5,542	595	6,137	204	22	226	5,911	52
2013	5,566	598	6,164	204	24	228	5,936	52
2014	5,588	600	6,188	204	26	230	5,958	52
2015	5,608	602	6,210	204	28	232	5,978	52
2016	5,629	604	6,233	204	30	234	5,999	52
2017	5,649	606	6,256	204	31	235	6,020	52
2018	5,670	609	6,279	204	32	236	6,042	52
2019	5,691	611	6,302	204	33	237	6,065	52
2020	5,714	613	6,327	204	34	238	6,089	52

Annual Growth Rates (%)

1990-2000	0.05%	0.00%	0.05%	1.33%	0.00%	1.34%	0.00%	0.01%
2000-2007	1.95%	2.04%	1.96%	-0.59%	0.00%	-0.21%	2.04%	-0.83%
2007-2010	-1.49%	-1.63%	-1.50%	0.28%	46.50%	2.16%	-1.63%	0.73%
2010-2020	0.43%	0.42%	0.43%	0.03%	6.69%	0.73%	0.42%	0.05%

Form 1.4 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	4,974	536	5,510	184	0	184	5,326	54
1991	4,831	518	5,349	206	0	206	5,143	54
1992	4,992	537	5,529	197	0	197	5,332	54
1993	4,423	473	4,896	202	0	202	4,694	59
1994	4,776	506	5,282	260	0	260	5,022	52
1995	4,725	498	5,223	283	0	283	4,940	55
1996	4,855	515	5,369	260	0	260	5,110	54
1997	5,270	563	5,833	242	0	242	5,591	50
1998	5,270	564	5,834	231	0	231	5,603	49
1999	5,079	543	5,622	234	0	234	5,387	51
2000	4,999	536	5,535	210	0	210	5,325	54
2001	4,512	482	4,994	207	0	207	4,787	58
2002	4,943	521	5,464	288	1	289	5,176	55
2003	5,131	541	5,673	298	2	299	5,373	55
2004	5,139	547	5,687	250	2	253	5,434	56
2005	5,356	572	5,928	244	3	248	5,681	53
2006	5,751	616	6,368	245	4	249	6,119	51
2007	5,723	618	6,341	202	6	207	6,134	51
2008	5,809	627	6,435	203	10	213	6,223	50
2009	5,477	589	6,066	203	15	218	5,847	52
2010	5,471	588	6,059	203	18	221	5,839	52
2011	5,502	591	6,093	204	20	223	5,870	52
2012	5,536	595	6,131	204	22	226	5,905	52
2013	5,558	597	6,154	204	24	228	5,927	52
2014	5,577	599	6,175	204	26	230	5,945	52
2015	5,593	600	6,194	204	28	232	5,962	52
2016	5,609	602	6,211	204	30	234	5,977	52
2017	5,624	604	6,228	204	31	235	5,992	52
2018	5,639	605	6,244	204	32	236	6,008	52
2019	5,655	607	6,261	204	33	237	6,025	52
2020	5,672	609	6,281	204	34	238	6,043	52

Annual Growth Rates (%)

1990-2000	0.05%	0.00%	0.05%	1.33%	0.00%	1.34%	0.00%	0.01%
2000-2007	1.95%	2.04%	1.96%	-0.59%	0.00%	-0.21%	2.04%	-0.83%
2007-2010	-1.49%	-1.63%	-1.50%	0.28%	46.50%	2.16%	-1.63%	0.73%
2010-2020	0.36%	0.34%	0.36%	0.03%	6.69%	0.73%	0.34%	0.00%

Form 1.4 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	4,974	536	5,510	184	0	184	5,326	54
1991	4,831	518	5,349	206	0	206	5,143	54
1992	4,992	537	5,529	197	0	197	5,332	54
1993	4,423	473	4,896	202	0	202	4,694	59
1994	4,776	506	5,282	260	0	260	5,022	52
1995	4,725	498	5,223	283	0	283	4,940	55
1996	4,855	515	5,369	260	0	260	5,110	54
1997	5,270	563	5,833	242	0	242	5,591	50
1998	5,270	564	5,834	231	0	231	5,603	49
1999	5,079	543	5,622	234	0	234	5,387	51
2000	4,999	536	5,535	210	0	210	5,325	54
2001	4,512	482	4,994	207	0	207	4,787	58
2002	4,943	521	5,464	288	1	289	5,176	55
2003	5,131	541	5,673	298	2	299	5,373	55
2004	5,139	547	5,687	250	2	253	5,434	56
2005	5,356	572	5,928	244	3	248	5,681	53
2006	5,751	616	6,368	245	4	249	6,119	51
2007	5,723	618	6,341	202	6	207	6,134	51
2008	5,809	627	6,435	203	10	213	6,223	50
2009	5,476	589	6,065	203	15	218	5,847	52
2010	5,471	588	6,059	203	18	221	5,838	52
2011	5,496	591	6,086	204	20	223	5,863	52
2012	5,524	593	6,117	204	22	226	5,891	52
2013	5,540	595	6,135	204	24	228	5,907	52
2014	5,553	596	6,149	204	26	230	5,919	52
2015	5,564	597	6,161	204	28	232	5,929	52
2016	5,569	597	6,166	204	30	234	5,932	52
2017	5,574	598	6,172	204	31	235	5,937	52
2018	5,578	598	6,177	204	32	236	5,941	52
2019	5,583	599	6,182	204	33	237	5,945	52
2020	5,590	599	6,189	204	34	238	5,952	52

Annual Growth Rates (%)

1990-2000	0.05%	0.00%	0.05%	1.33%	0.00%	1.34%	0.00%	0.01%
2000-2007	1.95%	2.04%	1.96%	-0.59%	0.00%	-0.21%	2.04%	-0.83%
2007-2010	-1.49%	-1.63%	-1.50%	0.28%	46.50%	2.16%	-1.63%	0.73%
2010-2020	0.22%	0.19%	0.21%	0.03%	6.69%	0.73%	0.19%	0.05%

Form 1.5 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Low Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	6,223	6,635	6,752	6,854	1.0663	1.0851	1.1014
2009	5,847	6,235	6,345	6,440	1.0663	1.0851	1.1014
2010	5,838	6,225	6,335	6,430	1.0663	1.0851	1.1014
2011	5,873	6,262	6,372	6,468	1.0663	1.0851	1.1014
2012	5,911	6,303	6,414	6,511	1.0663	1.0851	1.1014
2013	5,936	6,329	6,441	6,538	1.0663	1.0851	1.1014
2014	5,958	6,353	6,465	6,562	1.0663	1.0851	1.1014
2015	5,978	6,374	6,486	6,584	1.0663	1.0851	1.1014
2016	5,999	6,397	6,510	6,607	1.0663	1.0851	1.1014
2017	6,020	6,420	6,533	6,631	1.0663	1.0851	1.1014

Form 1.5 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: Mid Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	6,223	6,635	6,752	6,854	1.0663	1.0851	1.1014
2009	5,847	6,235	6,345	6,440	1.0663	1.0851	1.1014
2010	5,839	6,226	6,335	6,431	1.0663	1.0851	1.1014
2011	5,870	6,259	6,369	6,465	1.0663	1.0851	1.1014
2012	5,905	6,297	6,408	6,504	1.0663	1.0851	1.1014
2013	5,927	6,320	6,431	6,528	1.0663	1.0851	1.1014
2014	5,945	6,340	6,451	6,548	1.0663	1.0851	1.1014
2015	5,962	6,357	6,469	6,566	1.0663	1.0851	1.1014
2016	5,977	6,373	6,486	6,583	1.0663	1.0851	1.1014
2017	5,992	6,390	6,502	6,600	1.0663	1.0851	1.1014

Form 1.5 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast: High Rate Case
Extreme Temperature Peak Demand (MW)

Year	1-in-2 Temperatures	1-in-5 Temperatures	1-in-10 Temperatures	1-in-20 Temperatures	1-in-5 Multiplier	1-in-10 Multiplier	1-in-20 Multiplier
2008	6,223	6,635	6,752	6,854	1.0663	1.0851	1.1014
2009	5,847	6,234	6,344	6,439	1.0663	1.0851	1.1014
2010	5,838	6,225	6,335	6,430	1.0663	1.0851	1.1014
2011	5,863	6,252	6,362	6,457	1.0663	1.0851	1.1014
2012	5,891	6,282	6,393	6,489	1.0663	1.0851	1.1014
2013	5,907	6,298	6,409	6,506	1.0663	1.0851	1.1014
2014	5,919	6,312	6,423	6,519	1.0663	1.0851	1.1014
2015	5,929	6,322	6,433	6,530	1.0663	1.0851	1.1014
2016	5,932	6,325	6,437	6,534	1.0663	1.0851	1.1014
2017	5,937	6,330	6,442	6,538	1.0663	1.0851	1.1014

Form 2.2 - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Planning Area Economic and Demographic Assumptions

Year	Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	3,426,297	1,223,732	2.80	111,684	17,389	648
1991	3,463,913	1,236,469	2.80	108,296	16,222	664
1992	3,511,438	1,249,708	2.81	109,628	15,098	678
1993	3,521,944	1,255,214	2.81	106,568	14,176	686
1994	3,515,762	1,263,373	2.78	106,229	13,913	691
1995	3,484,022	1,261,433	2.76	106,831	14,063	693
1996	3,483,861	1,262,971	2.76	109,215	14,068	695
1997	3,513,379	1,270,234	2.77	112,009	16,175	698
1998	3,542,204	1,273,218	2.78	121,037	17,600	702
1999	3,592,105	1,279,797	2.81	123,979	18,819	707
2000	3,647,840	1,283,012	2.84	127,661	20,453	715
2001	3,715,891	1,296,642	2.87	131,885	18,748	724
2002	3,772,659	1,301,999	2.90	132,816	17,823	733
2003	3,819,206	1,305,255	2.93	133,906	17,895	742
2004	3,857,836	1,309,762	2.95	137,425	18,576	749
2005	3,883,720	1,314,569	2.95	141,070	20,047	754
2006	3,905,707	1,319,807	2.96	147,682	21,000	761
2007	3,932,808	1,328,081	2.96	150,806	19,940	766
2008	3,958,334	1,334,348	2.97	149,772	19,678	771
2009	3,984,024	1,340,639	2.97	149,441	18,994	778
2010	4,009,881	1,346,964	2.98	152,059	19,054	784
2011	4,035,903	1,353,318	2.98	157,276	19,689	791
2012	4,062,094	1,359,697	2.99	162,250	20,569	798
2013	4,088,453	1,366,110	2.99	166,674	20,990	807
2014	4,114,984	1,372,553	3.00	170,676	21,185	815
2015	4,141,688	1,379,027	3.00	174,192	21,401	823
2016	4,168,559	1,385,529	3.01	177,807	21,625	831
2017	4,195,606	1,392,062	3.01	181,649	21,826	838
2018	4,222,827	1,398,625	3.02	185,610	22,009	846
2019	4,250,221	1,405,223	3.02	189,638	22,165	853
2020	4,277,797	1,411,848	3.03	193,764	22,296	860
Annual Growth Rates (%)						
1990-2000	0.63%	0.47%	0.15%	1.35%	0.00%	1.00%
2000-2007	1.08%	0.49%	0.58%	2.41%	0.00%	0.98%
2007-2010	0.65%	0.47%	0.18%	0.28%	-1.50%	0.78%
2010-2020	0.65%	0.47%	0.18%	2.45%	1.58%	0.92%

Form 1.7a - LADWP Planning Area
California Energy Demand 2010-2020 Staff Draft Forecast
Private Supply by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	0	37	872	0	0	188	0	1,097
1991	0	55	985	0	0	188	0	1,227
1992	0	65	933	0	0	174	0	1,172
1993	0	67	957	0	0	180	0	1,204
1994	0	284	1,070	0	0	193	0	1,548
1995	0	335	1,122	0	0	229	0	1,686
1996	0	273	1,182	0	0	93	0	1,548
1997	0	301	1,040	0	0	99	0	1,439
1998	0	302	1,040	0	0	31	0	1,373
1999	0	305	1,081	0	0	10	0	1,396
2000	0	296	951	0	0	6	0	1,253
2001	1	144	1,008	6	0	0	0	1,159
2002	3	211	1,302	12	0	0	0	1,528
2003	3	213	1,342	13	0	1	0	1,572
2004	4	186	1,139	13	0	2	0	1,345
2005	4	177	1,166	12	1	3	0	1,364
2006	5	181	1,169	12	1	3	0	1,370
2007	7	92	1,032	11	1	4	0	1,147
2008	12	105	1,035	12	1	4	0	1,169
2009	18	120	1,035	12	1	5	0	1,191
2010	22	127	1,036	12	1	5	0	1,203
2011	26	134	1,037	12	1	5	0	1,215
2012	29	141	1,038	12	1	5	0	1,227
2013	33	144	1,038	12	1	5	0	1,233
2014	36	147	1,038	12	1	5	0	1,240
2015	40	150	1,038	12	1	5	0	1,247
2016	44	152	1,038	12	1	5	0	1,253
2017	46	153	1,038	12	1	5	0	1,257
2018	48	154	1,039	12	1	5	0	1,259
2019	49	155	1,039	12	1	5	0	1,262
2020	50	156	1,039	12	1	5	0	1,264

Annual Growth Rates (%)

1990-2000	0.00%	22.97%	0.87%	0.00%	0.00%	-29.49%	0.00%	1.34%
2000-2007	93.31%	-15.36%	1.17%	0.00%	0.00%	-5.86%	0.00%	-1.25%
2007-2010	47.01%	11.30%	0.15%	1.87%	3.18%	7.94%	0.00%	1.61%
2010-2020	8.61%	2.10%	0.02%	0.03%	0.15%	1.34%	0.00%	0.49%

Form 2.3 Electricity Prices - LADWP									
	residential			commercial			industrial		
YEAR	low rate	mid rate	high rate	low rate	mid rate	high rate	low rate	mid rate	high rate
1980	12.26	12.26	12.26	12.29	12.29	12.29	10.74	10.74	10.74
1981	11.73	11.73	11.73	12.60	12.60	12.60	11.20	11.20	11.20
1982	10.76	10.76	10.76	11.78	11.78	11.78	10.74	10.74	10.74
1983	9.95	9.95	9.95	10.79	10.79	10.79	9.96	9.96	9.96
1984	10.03	10.03	10.03	10.74	10.74	10.74	9.95	9.95	9.95
1985	10.39	10.39	10.39	11.19	11.19	11.19	10.46	10.46	10.46
1986	10.45	10.45	10.45	11.32	11.32	11.32	10.57	10.57	10.57
1987	10.73	10.73	10.73	11.59	11.59	11.59	10.73	10.73	10.73
1988	11.17	11.17	11.17	11.99	11.99	11.99	10.83	10.83	10.83
1989	11.55	11.55	11.55	12.27	12.27	12.27	10.88	10.88	10.88
1990	11.57	11.57	11.57	12.00	12.64	12.64	10.94	10.94	10.94
1991	11.29	11.29	11.29	11.66	12.79	12.79	10.63	10.63	10.63
1992	11.29	11.29	11.29	11.76	12.94	12.94	10.87	10.87	10.87
1993	11.84	11.84	11.84	12.03	13.15	13.15	11.61	11.61	11.61
1994	11.73	11.73	11.73	12.24	12.83	12.83	11.55	11.55	11.55
1995	11.34	11.34	11.34	11.96	12.45	12.45	11.08	11.08	11.08
1996	11.12	11.12	11.12	11.64	12.84	12.84	10.62	10.62	10.62
1997	11.61	11.61	11.61	12.10	12.82	12.82	10.65	10.65	10.65
1998	11.48	11.48	11.48	12.15	12.45	12.45	10.82	10.82	10.82
1999	11.32	11.32	11.32	11.92	12.01	12.01	10.66	10.66	10.66
2000	11.08	11.08	11.08	11.77	11.78	11.78	10.54	10.54	10.54
2001	10.82	10.82	10.82	11.51	11.59	11.59	10.18	10.18	10.18
2002	10.64	10.64	10.64	11.20	11.25	11.25	9.75	9.75	9.75
2003	10.45	10.45	10.45	10.99	10.88	10.88	10.02	10.02	10.02
2004	10.25	10.25	10.25	10.52	10.39	10.39	9.47	9.47	9.47
2005	10.10	10.10	10.10	10.06	10.06	10.06	9.24	9.24	9.24
2006	9.77	9.77	9.77	9.66	9.66	9.66	9.10	9.10	9.10
2007	9.75	9.75	9.75	9.69	9.69	9.69	9.01	9.01	9.01
2008	9.91	9.91	9.91	9.89	9.89	9.89	9.34	9.34	9.34
2009	10.73	10.73	10.73	11.02	11.02	11.02	9.99	9.99	9.99
2010	11.21	11.21	11.21	11.56	11.56	11.56	10.51	10.51	10.51
2011	11.21	11.32	11.43	11.56	11.67	11.78	10.51	10.61	10.71
2012	11.21	11.43	11.65	11.56	11.78	12.00	10.51	10.71	10.92
2013	11.21	11.55	11.87	11.56	11.90	12.24	10.51	10.82	11.13
2014	11.21	11.66	12.10	11.56	12.02	12.47	10.51	10.93	11.34
2015	11.21	11.77	12.33	11.56	12.13	12.71	10.51	11.03	11.56
2016	11.21	11.99	12.75	11.56	12.36	13.14	10.51	11.24	11.95
2017	11.21	12.21	13.19	11.56	12.58	13.59	10.51	11.44	12.36
2018	11.21	12.43	13.63	11.56	12.81	14.05	10.51	11.65	12.78
2019	11.21	12.66	14.10	11.56	13.05	14.53	10.51	11.87	13.21
2020	11.21	12.90	14.58	11.56	13.29	15.02	10.51	12.08	13.66

Form 1.1 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	67,020	72,365	47,282	7,269	20,580	12,381	1,576	228,473
1991	66,465	72,145	45,909	7,260	16,118	12,591	1,610	222,098
1992	68,546	75,612	45,846	6,940	15,308	12,921	1,647	226,819
1993	67,711	76,180	45,441	6,646	15,769	13,011	1,645	226,403
1994	69,041	76,232	45,299	6,239	16,829	12,797	1,646	228,083
1995	69,031	77,955	46,747	6,454	14,162	13,187	1,620	229,158
1996	71,330	80,285	47,117	6,592	16,723	13,237	1,658	236,943
1997	72,775	83,994	48,759	6,537	17,374	13,854	1,701	244,994
1998	74,620	85,839	47,213	6,212	13,373	13,546	1,757	242,561
1999	75,674	88,970	48,621	5,842	16,951	13,860	1,658	251,576
2000	79,840	94,632	49,865	6,301	17,389	14,477	1,729	264,233
2001	75,134	89,650	44,652	5,762	18,746	13,070	1,724	248,737
2002	76,921	92,070	45,278	5,703	20,822	13,204	1,710	255,708
2003	81,385	96,538	43,256	5,909	20,092	13,171	1,748	262,099
2004	83,961	98,772	43,931	6,611	21,821	13,340	1,772	270,208
2005	85,229	99,405	44,349	6,726	19,102	14,072	1,781	270,664
2006	89,497	102,623	43,966	6,707	20,322	14,518	1,780	279,413
2007	89,751	102,553	43,616	6,500	23,203	14,635	1,841	282,098
2008	89,222	103,691	42,494	6,363	21,941	14,613	1,860	280,183
2009	88,672	102,439	41,674	6,318	21,500	14,562	1,868	277,034
2010	89,024	102,785	41,929	6,275	21,460	14,694	1,876	278,043
2011	89,869	103,267	42,402	6,290	21,415	14,940	1,884	280,067
2012	90,944	104,197	43,413	6,305	21,453	15,247	1,893	283,452
2013	91,969	105,139	43,810	6,294	21,492	15,466	1,901	286,071
2014	92,990	106,138	43,896	6,272	21,531	15,590	1,909	288,327
2015	93,983	107,095	43,987	6,258	21,572	15,692	1,918	290,504
2016	95,032	108,017	44,101	6,244	21,607	15,788	1,926	292,714
2017	96,150	108,905	44,139	6,232	21,642	15,888	1,934	294,890
2018	97,330	109,796	44,153	6,219	21,678	15,986	1,943	297,104
2019	98,565	110,703	44,113	6,205	21,714	16,072	1,951	299,324
2020	99,936	111,650	44,027	6,185	21,752	16,168	1,959	301,678

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.77%	2.72%	0.53%	-1.42%	-1.67%	1.58%	0.93%	1.46%
2000-2007	1.69%	1.16%	-1.89%	0.44%	4.21%	0.16%	0.90%	0.94%
2007-2010	-0.27%	0.08%	-1.31%	-1.17%	-2.57%	0.14%	0.64%	-0.48%
2010-2020	1.16%	0.83%	0.49%	-0.14%	0.14%	0.96%	0.43%	0.82%

Form 1.1 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	67,020	72,365	47,282	7,269	20,580	12,381	1,576	228,473
1991	66,465	72,145	45,909	7,260	16,118	12,591	1,610	222,098
1992	68,546	75,612	45,846	6,940	15,308	12,921	1,647	226,819
1993	67,711	76,180	45,441	6,646	15,769	13,011	1,645	226,403
1994	69,041	76,232	45,299	6,239	16,829	12,797	1,646	228,083
1995	69,031	77,955	46,747	6,454	14,162	13,187	1,620	229,158
1996	71,330	80,285	47,117	6,592	16,723	13,237	1,658	236,943
1997	72,775	83,994	48,759	6,537	17,374	13,854	1,701	244,994
1998	74,620	85,839	47,213	6,212	13,373	13,546	1,757	242,561
1999	75,674	88,970	48,621	5,842	16,951	13,860	1,658	251,576
2000	79,840	94,632	49,865	6,301	17,389	14,477	1,729	264,233
2001	75,134	89,650	44,652	5,762	18,746	13,070	1,724	248,737
2002	76,921	92,070	45,278	5,703	20,822	13,204	1,710	255,708
2003	81,385	96,538	43,256	5,909	20,092	13,171	1,748	262,099
2004	83,961	98,772	43,931	6,611	21,821	13,340	1,772	270,208
2005	85,229	99,405	44,349	6,726	19,102	14,072	1,781	270,664
2006	89,497	102,623	43,966	6,707	20,322	14,518	1,780	279,413
2007	89,751	102,553	43,616	6,500	23,203	14,635	1,841	282,098
2008	89,222	103,691	42,494	6,363	21,941	14,613	1,860	280,184
2009	88,672	102,440	41,674	6,318	21,500	14,562	1,868	277,034
2010	89,024	102,786	41,929	6,275	21,460	14,694	1,876	278,043
2011	89,856	102,909	42,404	6,290	21,415	14,940	1,884	279,698
2012	90,916	103,478	43,415	6,305	21,453	15,247	1,893	282,707
2013	91,925	104,056	43,811	6,293	21,492	15,466	1,901	284,944
2014	92,930	104,699	43,886	6,272	21,531	15,590	1,909	286,817
2015	93,904	105,294	43,959	6,257	21,572	15,692	1,918	288,596
2016	94,923	105,606	44,030	6,243	21,607	15,788	1,926	290,122
2017	96,009	105,878	44,014	6,230	21,642	15,888	1,934	291,595
2018	97,155	106,155	43,950	6,217	21,678	15,986	1,943	293,083
2019	98,355	106,449	43,824	6,202	21,714	16,072	1,951	294,567
2020	99,688	106,782	43,646	6,182	21,752	16,168	1,959	296,178

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.77%	2.72%	0.53%	-1.42%	-1.67%	1.58%	0.93%	1.46%
2000-2007	1.69%	1.16%	-1.89%	0.44%	4.21%	0.16%	0.90%	0.94%
2007-2010	-0.27%	0.08%	-1.31%	-1.17%	-2.57%	0.14%	0.64%	-0.48%
2010-2020	1.14%	0.38%	0.40%	-0.15%	0.14%	0.96%	0.43%	0.63%

Form 1.1 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Electricity Consumption by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Streetlighting	Total Consumption
1990	67,020	72,365	47,282	7,269	20,580	12,381	1,576	228,473
1991	66,465	72,145	45,909	7,260	16,118	12,591	1,610	222,098
1992	68,546	75,612	45,846	6,940	15,308	12,921	1,647	226,819
1993	67,711	76,180	45,441	6,646	15,769	13,011	1,645	226,403
1994	69,041	76,232	45,299	6,239	16,829	12,797	1,646	228,083
1995	69,031	77,955	46,747	6,454	14,162	13,187	1,620	229,158
1996	71,330	80,285	47,117	6,592	16,723	13,237	1,658	236,943
1997	72,775	83,994	48,759	6,537	17,374	13,854	1,701	244,994
1998	74,620	85,839	47,213	6,212	13,373	13,546	1,757	242,561
1999	75,674	88,970	48,621	5,842	16,951	13,860	1,658	251,576
2000	79,840	94,632	49,865	6,301	17,389	14,477	1,729	264,233
2001	75,134	89,650	44,652	5,762	18,746	13,070	1,724	248,737
2002	76,921	92,070	45,278	5,703	20,822	13,204	1,710	255,708
2003	81,385	96,538	43,256	5,909	20,092	13,171	1,748	262,099
2004	83,961	98,772	43,931	6,611	21,821	13,340	1,772	270,208
2005	85,229	99,405	44,349	6,726	19,102	14,072	1,781	270,664
2006	89,497	102,623	43,966	6,707	20,322	14,518	1,780	279,413
2007	89,751	102,553	43,616	6,500	23,203	14,635	1,841	282,098
2008	89,222	103,691	42,494	6,363	21,941	14,613	1,860	280,184
2009	88,672	102,440	41,674	6,318	21,500	14,562	1,868	277,034
2010	89,024	102,786	41,929	6,275	21,460	14,694	1,876	278,043
2011	89,862	103,085	42,404	6,290	21,415	14,940	1,884	279,880
2012	90,930	103,832	43,413	6,305	21,453	15,247	1,893	283,072
2013	91,946	104,583	43,803	6,294	21,492	15,466	1,901	285,485
2014	92,959	105,389	43,881	6,272	21,531	15,590	1,909	287,532
2015	93,943	106,150	43,961	6,257	21,572	15,692	1,918	289,493
2016	94,975	106,726	44,055	6,244	21,607	15,788	1,926	291,320
2017	96,076	107,264	44,062	6,231	21,642	15,888	1,934	293,098
2018	97,238	107,804	44,029	6,218	21,678	15,986	1,943	294,895
2019	98,454	108,362	43,942	6,203	21,714	16,072	1,951	296,698
2020	99,804	108,947	43,801	6,184	21,752	16,168	1,959	298,616

Last historic year is 2007. Consumption includes self-generation.

Annual Growth Rates (%)

1990-2000	1.8%	2.7%	0.5%	-1.4%	-1.7%	1.6%	0.9%	1.5%
2000-2007	1.7%	1.2%	-1.9%	0.4%	4.2%	0.2%	0.9%	0.9%
2007-2010	-0.3%	0.1%	-1.3%	-1.2%	-2.6%	0.1%	0.6%	-0.5%
2010-2020	1.1%	0.6%	0.4%	-0.1%	0.1%	1.0%	0.4%	0.7%

Form 1.1b - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street Lighting	Total Sales
1990	67,013	71,307	41,270	5,837	20,561	11,776	1,576	219,341
1991	66,458	71,044	39,982	5,739	16,099	11,979	1,610	212,911
1992	68,540	74,483	39,970	5,432	15,288	12,330	1,647	217,690
1993	67,704	74,991	38,599	5,210	15,753	12,346	1,645	216,247
1994	69,041	74,812	38,211	4,806	16,814	12,125	1,646	217,454
1995	69,031	76,479	39,591	5,024	14,147	12,485	1,620	218,377
1996	71,330	78,867	39,371	5,129	16,708	12,674	1,658	225,737
1997	72,775	82,531	40,934	5,004	17,358	13,283	1,701	233,588
1998	74,620	84,342	39,628	4,650	13,359	13,035	1,757	231,391
1999	75,674	87,442	40,916	4,367	16,951	13,367	1,658	240,374
2000	79,839	93,112	42,526	4,834	17,389	13,979	1,729	253,408
2001	75,128	88,414	38,130	3,738	18,746	13,070	1,724	238,950
2002	76,906	90,435	37,528	3,442	20,821	13,203	1,710	244,045
2003	81,359	94,902	35,078	3,519	20,090	13,157	1,748	249,854
2004	83,919	97,196	36,858	4,189	21,818	13,319	1,772	259,071
2005	85,175	97,686	37,310	4,384	19,089	14,040	1,781	259,465
2006	89,426	100,758	37,020	4,594	20,305	14,458	1,780	268,341
2007	89,645	101,327	36,580	4,809	23,181	14,562	1,841	271,946
2008	89,047	102,197	35,405	4,667	21,913	14,508	1,860	269,598
2009	88,369	100,533	34,571	4,622	21,469	14,428	1,868	265,860
2010	88,666	100,758	34,810	4,578	21,426	14,535	1,876	266,647
2011	89,458	101,121	35,268	4,592	21,379	14,755	1,884	268,457
2012	90,480	101,933	36,264	4,607	21,415	15,035	1,893	271,626
2013	91,451	102,803	36,657	4,596	21,452	15,252	1,901	274,112
2014	92,420	103,729	36,739	4,574	21,490	15,373	1,909	276,235
2015	93,360	104,613	36,827	4,560	21,528	15,473	1,918	278,277
2016	94,356	105,462	36,937	4,546	21,561	15,566	1,926	280,354
2017	95,455	106,321	36,975	4,534	21,596	15,665	1,934	282,481
2018	96,619	107,182	36,988	4,521	21,632	15,763	1,943	284,649
2019	97,839	108,059	36,949	4,507	21,668	15,849	1,951	286,822
2020	99,193	108,976	36,862	4,487	21,706	15,945	1,959	289,127

Last historical Year = 2007; sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.77%	2.70%	0.30%	-1.87%	-1.66%	1.73%	0.93%	1.45%
2000-2007	1.67%	1.22%	-2.13%	-0.07%	4.19%	0.59%	0.90%	1.01%
2007-2010	-0.37%	-0.19%	-1.64%	-1.63%	-2.59%	-0.06%	0.64%	-0.65%
2010-2020	1.13%	0.79%	0.57%	-0.20%	0.13%	0.93%	0.43%	0.81%

Form 1.1b - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street Lighting	Total Sales
1990	67,013	71,307	41,270	5,837	20,561	11,776	1,576	219,341
1991	66,458	71,044	39,982	5,739	16,099	11,979	1,610	212,911
1992	68,540	74,483	39,970	5,432	15,288	12,330	1,647	217,690
1993	67,704	74,991	38,599	5,210	15,753	12,346	1,645	216,247
1994	69,041	74,812	38,211	4,806	16,814	12,125	1,646	217,454
1995	69,031	76,479	39,591	5,024	14,147	12,485	1,620	218,377
1996	71,330	78,867	39,371	5,129	16,708	12,674	1,658	225,737
1997	72,775	82,531	40,934	5,004	17,358	13,283	1,701	233,588
1998	74,620	84,342	39,628	4,650	13,359	13,035	1,757	231,391
1999	75,674	87,442	40,916	4,367	16,951	13,367	1,658	240,374
2000	79,839	93,112	42,526	4,834	17,389	13,979	1,729	253,408
2001	75,128	88,414	38,130	3,738	18,746	13,070	1,724	238,950
2002	76,906	90,435	37,528	3,442	20,821	13,203	1,710	244,045
2003	81,359	94,902	35,078	3,519	20,090	13,157	1,748	249,854
2004	83,919	97,196	36,858	4,189	21,818	13,319	1,772	259,071
2005	85,175	97,686	37,310	4,384	19,089	14,040	1,781	259,465
2006	89,426	100,758	37,020	4,594	20,305	14,458	1,780	268,341
2007	89,645	101,327	36,580	4,809	23,181	14,562	1,841	271,946
2008	89,047	102,197	35,405	4,667	21,913	14,508	1,860	269,598
2009	88,369	100,534	34,571	4,622	21,469	14,428	1,868	265,860
2010	88,666	100,758	34,810	4,578	21,426	14,535	1,876	266,648
2011	89,451	100,940	35,270	4,592	21,379	14,755	1,884	268,270
2012	90,465	101,568	36,263	4,607	21,415	15,035	1,893	271,247
2013	91,429	102,247	36,650	4,595	21,452	15,252	1,901	273,526
2014	92,389	102,979	36,724	4,574	21,490	15,373	1,909	275,439
2015	93,320	103,669	36,800	4,559	21,528	15,473	1,918	277,266
2016	94,300	104,171	36,891	4,545	21,561	15,566	1,926	278,960
2017	95,382	104,680	36,898	4,533	21,596	15,665	1,934	280,688
2018	96,527	105,190	36,864	4,520	21,632	15,763	1,943	282,440
2019	97,727	105,718	36,777	4,505	21,668	15,849	1,951	284,196
2020	99,061	106,273	36,636	4,485	21,706	15,945	1,959	286,065

Last historical Year = 2007; sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.8%	2.7%	0.3%	-1.9%	-1.7%	1.7%	0.9%	1.5%
2000-2007	1.7%	1.2%	-2.1%	-0.1%	4.2%	0.6%	0.9%	1.0%
2007-2010	-0.4%	-0.2%	-1.6%	-1.6%	-2.6%	-0.1%	0.6%	-0.7%
2010-2020	1.1%	0.5%	0.5%	-0.2%	0.1%	0.9%	0.4%	0.7%

Form 1.1b - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Electricity Sales by Sector (GWh)

Year	Residential	Commercial	Industrial	Mining	Agricultural	TCU	Street Lighting	Total Sales
1990	67,013	71,307	41,270	5,837	20,561	11,776	1,576	219,341
1991	66,458	71,044	39,982	5,739	16,099	11,979	1,610	212,911
1992	68,540	74,483	39,970	5,432	15,288	12,330	1,647	217,690
1993	67,704	74,991	38,599	5,210	15,753	12,346	1,645	216,247
1994	69,041	74,812	38,211	4,806	16,814	12,125	1,646	217,454
1995	69,031	76,479	39,591	5,024	14,147	12,485	1,620	218,377
1996	71,330	78,867	39,371	5,129	16,708	12,674	1,658	225,737
1997	72,775	82,531	40,934	5,004	17,358	13,283	1,701	233,588
1998	74,620	84,342	39,628	4,650	13,359	13,035	1,757	231,391
1999	75,674	87,442	40,916	4,367	16,951	13,367	1,658	240,374
2000	79,839	93,112	42,526	4,834	17,389	13,979	1,729	253,408
2001	75,128	88,414	38,130	3,738	18,746	13,070	1,724	238,950
2002	76,906	90,435	37,528	3,442	20,821	13,203	1,710	244,045
2003	81,359	94,902	35,078	3,519	20,090	13,157	1,748	249,854
2004	83,919	97,196	36,858	4,189	21,818	13,319	1,772	259,071
2005	85,175	97,686	37,310	4,384	19,089	14,040	1,781	259,465
2006	89,426	100,758	37,020	4,594	20,305	14,458	1,780	268,341
2007	89,645	101,327	36,580	4,809	23,181	14,562	1,841	271,946
2008	89,047	102,197	35,405	4,667	21,913	14,508	1,860	269,598
2009	88,369	100,534	34,571	4,622	21,469	14,428	1,868	265,860
2010	88,666	100,758	34,810	4,578	21,426	14,535	1,876	266,648
2011	89,444	100,764	35,270	4,592	21,379	14,755	1,884	268,088
2012	90,452	101,214	36,266	4,607	21,415	15,035	1,893	270,882
2013	91,408	101,720	36,658	4,595	21,452	15,252	1,901	272,985
2014	92,360	102,290	36,730	4,574	21,490	15,373	1,909	274,724
2015	93,281	102,813	36,799	4,559	21,528	15,473	1,918	276,370
2016	94,247	103,051	36,866	4,545	21,561	15,566	1,926	277,762
2017	95,314	103,294	36,849	4,532	21,596	15,665	1,934	279,186
2018	96,444	103,541	36,785	4,519	21,632	15,763	1,943	280,628
2019	97,628	103,805	36,660	4,504	21,668	15,849	1,951	282,065
2020	98,944	104,108	36,481	4,484	21,706	15,945	1,959	283,627

Last historical Year = 2007; sales excludes self-generation.

Annual Growth Rates (%)

1990-2000	1.8%	2.7%	0.3%	-1.9%	-1.7%	1.7%	0.9%	1.5%
2000-2007	1.7%	1.2%	-2.1%	-0.1%	4.2%	0.6%	0.9%	1.0%
2007-2010	-0.4%	-0.2%	-1.6%	-1.6%	-2.6%	-0.1%	0.6%	-0.7%
2010-2020	1.1%	0.3%	0.5%	-0.2%	0.1%	0.9%	0.4%	0.6%

Form 1.2 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	228,473	18,582	247,055	9,132	0	9,132	237,923
1991	222,098	18,205	240,302	9,186	0	9,186	231,116
1992	226,819	18,633	245,452	9,128	0	9,128	236,323
1993	226,403	18,481	244,884	10,156	0	10,156	234,728
1994	228,083	18,473	246,556	10,629	0	10,629	235,927
1995	229,158	18,651	247,809	10,781	0	10,781	237,028
1996	236,943	19,180	256,123	11,206	0	11,206	244,917
1997	244,994	19,830	264,824	11,406	0	11,406	253,418
1998	242,561	19,714	262,275	11,170	0	11,170	251,105
1999	251,576	20,373	271,949	11,204	1	11,206	260,743
2000	264,233	21,419	285,651	10,827	2	10,829	274,822
2001	248,737	20,210	268,947	9,771	16	9,787	259,159
2002	255,708	20,571	276,279	11,628	34	11,663	264,616
2003	262,099	21,041	283,140	12,173	71	12,245	270,896
2004	270,208	21,794	292,002	11,015	123	11,137	280,865
2005	270,664	21,849	292,513	11,014	184	11,199	281,314
2006	279,413	22,578	301,991	10,810	262	11,072	290,919
2007	282,098	22,888	304,986	9,784	369	10,153	294,833
2008	280,183	22,688	302,872	9,942	644	10,586	292,286
2009	277,034	22,370	299,404	10,026	1,148	11,174	288,230
2010	278,043	22,436	300,479	10,108	1,287	11,395	289,084
2011	280,067	22,593	302,659	10,190	1,420	11,610	291,049
2012	283,452	22,863	306,315	10,272	1,553	11,825	294,489
2013	286,071	23,072	309,143	10,273	1,686	11,959	297,184
2014	288,327	23,249	311,577	10,274	1,819	12,093	299,484
2015	290,504	23,419	313,923	10,274	1,952	12,226	301,697
2016	292,714	23,592	316,306	10,275	2,085	12,360	303,946
2017	294,890	23,769	318,659	10,276	2,134	12,409	306,249
2018	297,104	23,949	321,053	10,277	2,179	12,455	308,598
2019	299,324	24,129	323,453	10,277	2,225	12,503	310,950
2020	301,678	24,320	325,998	10,278	2,273	12,551	313,447

Annual Growth Rates (%)

1990-2000	1.46%	1.43%	1.46%	1.72%	-	1.72%	1.45%
2000-2007	0.94%	0.95%	0.94%	-1.44%	107.99%	-0.92%	1.01%
2007-2010	-0.48%	-0.66%	-0.50%	1.09%	51.70%	3.92%	-0.65%
2010-2020	0.82%	0.81%	0.82%	0.17%	5.85%	0.97%	0.81%

Form 1.2 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	228,473	18,582	247,055	9,132	0	9,132	237,923
1991	222,098	18,205	240,302	9,186	0	9,186	231,116
1992	226,819	18,633	245,452	9,128	0	9,128	236,323
1993	226,403	18,481	244,884	10,156	0	10,156	234,728
1994	228,083	18,473	246,556	10,629	0	10,629	235,927
1995	229,158	18,651	247,809	10,781	0	10,781	237,028
1996	236,943	19,180	256,123	11,206	0	11,206	244,917
1997	244,994	19,830	264,824	11,406	0	11,406	253,418
1998	242,561	19,714	262,275	11,170	0	11,170	251,105
1999	251,576	20,373	271,949	11,204	1	11,206	260,743
2000	264,233	21,419	285,651	10,827	2	10,829	274,822
2001	248,737	20,210	268,947	9,771	16	9,787	259,159
2002	255,708	20,571	276,279	11,628	34	11,663	264,616
2003	262,099	21,041	283,140	12,173	71	12,245	270,896
2004	270,208	21,794	292,002	11,015	123	11,137	280,865
2005	270,664	21,849	292,513	11,014	184	11,199	281,314
2006	279,413	22,578	301,991	10,810	262	11,072	290,919
2007	282,098	22,888	304,986	9,784	369	10,153	294,833
2008	280,184	22,688	302,872	9,942	644	10,586	292,286
2009	277,034	22,370	299,404	10,026	1,148	11,174	288,230
2010	278,043	22,436	300,480	10,108	1,287	11,395	289,084
2011	279,880	22,577	302,456	10,190	1,420	11,610	290,846
2012	283,072	22,830	305,902	10,272	1,553	11,825	294,077
2013	285,485	23,022	308,507	10,273	1,686	11,959	296,548
2014	287,532	23,181	310,713	10,274	1,819	12,093	298,620
2015	289,493	23,333	312,825	10,274	1,952	12,226	300,599
2016	291,320	23,473	314,793	10,275	2,085	12,360	302,433
2017	293,098	23,616	316,714	10,276	2,134	12,409	304,304
2018	294,895	23,761	318,656	10,277	2,179	12,455	306,201
2019	296,698	23,905	320,604	10,277	2,225	12,503	308,101
2020	298,616	24,060	322,676	10,278	2,273	12,551	310,125

Annual Growth Rates (%)

1990-2000	1.46%	1.43%	1.46%	1.72%	-	1.72%	1.45%
2000-2007	0.94%	0.95%	0.94%	-1.44%	107.99%	-0.92%	1.01%
2007-2010	-0.48%	-0.66%	-0.49%	1.09%	51.70%	3.92%	-0.65%
2010-2020	0.72%	0.70%	0.72%	0.17%	5.85%	0.97%	0.71%

Form 1.2 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Net Energy for Load (GWh)

Year	Total Consumption	Net Losses	Gross Generation	Non-PV Self Generation	PV	Total Private Supply	Net Energy for Load
1990	228,473	18,582	247,055	9,132	0	9,132	237,923
1991	222,098	18,205	240,302	9,186	0	9,186	231,116
1992	226,819	18,633	245,452	9,128	0	9,128	236,323
1993	226,403	18,481	244,884	10,156	0	10,156	234,728
1994	228,083	18,473	246,556	10,629	0	10,629	235,927
1995	229,158	18,651	247,809	10,781	0	10,781	237,028
1996	236,943	19,180	256,123	11,206	0	11,206	244,917
1997	244,994	19,830	264,824	11,406	0	11,406	253,418
1998	242,561	19,714	262,275	11,170	0	11,170	251,105
1999	251,576	20,373	271,949	11,204	1	11,206	260,743
2000	264,233	21,419	285,651	10,827	2	10,829	274,822
2001	248,737	20,210	268,947	9,771	16	9,787	259,159
2002	255,708	20,571	276,279	11,628	34	11,663	264,616
2003	262,099	21,041	283,140	12,173	71	12,245	270,896
2004	270,208	21,794	292,002	11,015	123	11,137	280,865
2005	270,664	21,849	292,513	11,014	184	11,199	281,314
2006	279,413	22,578	301,991	10,810	262	11,072	290,919
2007	282,098	22,888	304,986	9,784	369	10,153	294,833
2008	280,184	22,688	302,872	9,942	644	10,586	292,286
2009	277,034	22,370	299,404	10,026	1,148	11,174	288,230
2010	278,043	22,436	300,479	10,108	1,287	11,395	289,084
2011	279,698	22,561	302,259	10,190	1,420	11,610	290,649
2012	282,707	22,799	305,506	10,272	1,553	11,825	293,681
2013	284,944	22,975	307,920	10,273	1,686	11,959	295,961
2014	286,817	23,120	309,937	10,274	1,819	12,093	297,845
2015	288,596	23,257	311,853	10,274	1,952	12,226	299,626
2016	290,122	23,372	313,494	10,275	2,085	12,360	301,134
2017	291,595	23,489	315,084	10,276	2,134	12,409	302,675
2018	293,083	23,608	316,691	10,277	2,179	12,455	304,236
2019	294,567	23,726	318,294	10,277	2,225	12,503	305,791
2020	296,178	23,855	320,033	10,278	2,273	12,551	307,482

Annual Growth Rates (%)

1990-2000	1.46%	1.43%	1.46%	1.72%	-	1.72%	1.45%
2000-2007	0.94%	0.95%	0.94%	-1.44%	107.99%	-0.92%	1.01%
2007-2010	-0.48%	-0.66%	-0.50%	1.09%	51.70%	3.92%	-0.65%
2010-2020	0.63%	0.62%	0.63%	0.17%	5.85%	0.97%	0.62%

Form 1.3 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	16,713	15,767	7,828	2,209	2,443	44,960
1991	16,018	14,898	7,553	2,194	2,273	42,936
1992	16,932	15,835	7,791	2,115	2,275	44,948
1993	15,884	15,154	7,680	2,030	2,319	43,067
1994	17,404	15,753	7,632	2,208	2,356	45,354
1995	17,774	16,233	7,503	1,901	2,200	45,611
1996	18,462	16,723	8,027	2,087	2,444	47,743
1997	19,851	17,410	8,016	2,095	2,499	49,871
1998	20,478	19,003	8,265	1,785	2,405	51,936
1999	19,867	18,515	7,832	2,046	2,582	50,841
2000	20,319	19,117	7,423	1,789	2,532	51,179
2001	18,776	17,328	6,764	2,132	2,422	47,422
2002	19,657	18,608	7,409	2,266	2,745	50,686
2003	20,584	20,309	7,162	1,745	2,816	52,616
2004	19,855	20,694	7,960	1,998	2,963	53,471
2005	22,714	20,769	7,334	1,950	2,836	55,603
2006	26,456	21,984	7,235	2,088	2,936	60,699
2007	24,823	21,506	7,623	2,487	3,147	59,586
2008	24,880	21,807	7,766	2,261	3,198	59,911
2009	24,926	21,430	7,591	2,144	3,176	59,267
2010	25,284	21,504	7,623	2,135	3,196	59,742
2011	25,716	21,605	7,706	2,124	3,234	60,386
2012	26,184	21,761	7,876	2,128	3,281	61,230
2013	26,655	21,920	7,939	2,132	3,315	61,961
2014	27,131	22,096	7,947	2,137	3,334	62,646
2015	27,607	22,267	7,959	2,141	3,350	63,324
2016	28,091	22,435	7,975	2,143	3,366	64,010
2017	28,584	22,596	7,980	2,146	3,382	64,688
2018	29,090	22,757	7,979	2,148	3,398	65,373
2019	29,608	22,922	7,970	2,151	3,412	66,063
2020	30,195	23,095	7,952	2,154	3,428	66,823

Annual Growth Rates (%)

1990-2000	1.97%	1.95%	-0.53%	-2.09%	0.36%	1.30%
2000-2007	2.90%	1.70%	0.38%	4.82%	3.16%	2.20%
2007-2010	0.62%	0.00%	0.00%	-4.96%	0.51%	0.09%
2010-2020	1.79%	0.72%	0.42%	0.09%	0.70%	1.13%

Form 1.3 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	16,713	15,767	7,828	2,209	2,443	44,960
1991	16,018	14,898	7,553	2,194	2,273	42,936
1992	16,932	15,835	7,791	2,115	2,275	44,948
1993	15,884	15,154	7,680	2,030	2,319	43,067
1994	17,404	15,753	7,632	2,208	2,356	45,354
1995	17,774	16,233	7,503	1,901	2,200	45,611
1996	18,462	16,723	8,027	2,087	2,444	47,743
1997	19,851	17,410	8,016	2,095	2,499	49,871
1998	20,478	19,003	8,265	1,785	2,405	51,936
1999	19,867	18,515	7,832	2,046	2,582	50,841
2000	20,319	19,117	7,423	1,789	2,532	51,179
2001	18,776	17,328	6,764	2,132	2,422	47,422
2002	19,657	18,608	7,409	2,266	2,745	50,686
2003	20,584	20,309	7,162	1,745	2,816	52,616
2004	19,855	20,694	7,960	1,998	2,963	53,471
2005	22,714	20,769	7,334	1,950	2,836	55,603
2006	26,456	21,984	7,235	2,088	2,936	60,699
2007	24,823	21,506	7,623	2,487	3,147	59,586
2008	24,880	21,807	7,766	2,261	3,198	59,911
2009	24,926	21,431	7,591	2,144	3,176	59,268
2010	25,284	21,504	7,624	2,135	3,196	59,743
2011	25,715	21,571	7,707	2,124	3,234	60,351
2012	26,182	21,692	7,877	2,128	3,281	61,159
2013	26,652	21,815	7,938	2,132	3,315	61,852
2014	27,126	21,954	7,946	2,137	3,334	62,497
2015	27,600	22,088	7,956	2,141	3,350	63,135
2016	28,081	22,188	7,970	2,143	3,366	63,748
2017	28,573	22,282	7,970	2,146	3,382	64,353
2018	29,076	22,376	7,963	2,148	3,398	64,961
2019	29,591	22,474	7,947	2,151	3,412	65,575
2020	30,172	22,577	7,922	2,154	3,428	66,252

Annual Growth Rates (%)

1990-2000	1.97%	1.95%	-0.53%	-2.09%	0.36%	1.30%
2000-2007	2.90%	1.70%	0.38%	4.82%	3.16%	2.20%
2007-2010	0.62%	0.00%	0.00%	-4.96%	0.51%	0.09%
2010-2020	1.78%	0.49%	0.38%	0.09%	0.70%	1.04%

Form 1.3 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Coincident Peak Demand by Sector (MW)

Year	Residential	Commercial	Industrial	Agricultural	Other	Total Demand
1990	16,713	15,767	7,828	2,209	2,443	44,960
1991	16,018	14,898	7,553	2,194	2,273	42,936
1992	16,932	15,835	7,791	2,115	2,275	44,948
1993	15,884	15,154	7,680	2,030	2,319	43,067
1994	17,404	15,753	7,632	2,208	2,356	45,354
1995	17,774	16,233	7,503	1,901	2,200	45,611
1996	18,462	16,723	8,027	2,087	2,444	47,743
1997	19,851	17,410	8,016	2,095	2,499	49,871
1998	20,478	19,003	8,265	1,785	2,405	51,936
1999	19,867	18,515	7,832	2,046	2,582	50,841
2000	20,319	19,117	7,423	1,789	2,532	51,179
2001	18,776	17,328	6,764	2,132	2,422	47,422
2002	19,657	18,608	7,409	2,266	2,745	50,686
2003	20,584	20,309	7,162	1,745	2,816	52,616
2004	19,855	20,694	7,960	1,998	2,963	53,471
2005	22,714	20,769	7,334	1,950	2,836	55,603
2006	26,456	21,984	7,235	2,088	2,936	60,699
2007	24,823	21,506	7,623	2,487	3,147	59,586
2008	24,880	21,807	7,766	2,261	3,198	59,911
2009	24,926	21,430	7,591	2,144	3,176	59,267
2010	25,284	21,504	7,623	2,135	3,196	59,742
2011	25,714	21,534	7,707	2,124	3,234	60,313
2012	26,180	21,617	7,876	2,128	3,281	61,083
2013	26,649	21,705	7,939	2,132	3,315	61,739
2014	27,122	21,809	7,946	2,137	3,334	62,348
2015	27,595	21,907	7,955	2,141	3,350	62,949
2016	28,072	21,950	7,965	2,143	3,366	63,497
2017	28,562	21,988	7,961	2,146	3,382	64,038
2018	29,061	22,025	7,949	2,148	3,398	64,581
2019	29,574	22,067	7,926	2,151	3,412	65,130
2020	30,160	22,109	7,894	2,154	3,428	65,745

Annual Growth Rates (%)

1990-2000	1.97%	1.95%	-0.53%	-2.09%	0.36%	1.30%
2000-2007	2.90%	1.70%	0.38%	4.82%	3.16%	2.20%
2007-2010	0.62%	0.00%	0.00%	-4.96%	0.51%	0.09%
2010-2020	1.78%	0.28%	0.35%	0.09%	0.70%	0.96%

Form 1.4 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Low-Rate Case
Noncoincident Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	New PV Installations	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	44,960	3,814	48,774	1,533	0	1,533	47,241	57
1991	42,936	3,648	46,584	1,542	0	1,542	45,042	59
1992	44,948	3,812	48,759	1,532	0	1,532	47,227	57
1993	43,067	3,645	46,712	1,705	0	1,705	45,007	60
1994	45,354	3,827	49,181	1,784	0	1,784	47,397	57
1995	45,611	3,860	49,471	1,810	0	1,810	47,661	57
1996	47,743	4,039	51,782	1,881	0	1,881	49,901	56
1997	49,871	4,227	54,098	1,915	0	1,915	52,183	56
1998	51,936	4,415	56,351	1,875	0	1,875	54,476	53
1999	50,841	4,313	55,154	1,881	0	1,881	53,273	56
2000	51,179	4,346	55,526	1,817	1	1,818	53,708	59
2001	47,422	4,024	51,446	1,686	5	1,691	49,755	60
2002	50,686	4,276	54,962	2,082	11	2,093	52,869	57
2003	52,616	4,422	57,038	2,174	23	2,196	54,842	57
2004	53,471	4,512	57,983	1,949	39	1,987	55,996	57
2005	55,603	4,682	60,285	2,054	58	2,112	58,173	55
2006	60,699	5,160	65,859	1,958	83	2,041	63,817	52
2007	59,586	5,052	64,639	1,824	117	1,940	62,698	54
2008	59,911	5,083	64,994	1,843	204	2,047	62,948	53
2009	59,267	5,001	64,268	1,848	363	2,211	62,057	53
2010	59,742	5,038	64,780	1,853	407	2,260	62,520	53
2011	60,386	5,090	65,475	1,858	449	2,307	63,168	53
2012	61,230	5,159	66,390	1,863	491	2,354	64,036	53
2013	61,961	5,219	67,180	1,863	533	2,396	64,784	53
2014	62,646	5,275	67,920	1,863	575	2,438	65,482	52
2015	63,324	5,329	68,654	1,863	617	2,480	66,174	52
2016	64,010	5,385	69,395	1,863	660	2,522	66,873	52
2017	64,688	5,442	70,130	1,863	675	2,538	67,592	52
2018	65,373	5,500	70,873	1,863	689	2,552	68,321	52
2019	66,063	5,558	71,622	1,863	704	2,567	69,055	52
2020	66,823	5,623	72,446	1,863	719	2,582	69,864	51

Last historical year is 2007

Annual Growth Rates (%)

1990-2000	1.3%	1.3%	1.3%	1.7%	-	1.7%	1.3%
2000-2007	2.2%	2.2%	2.2%	0.1%	108.0%	0.9%	2.2%
2007-2010	0.1%	-0.1%	0.1%	0.5%	51.7%	5.2%	-0.1%
2010-2020	1.1%	1.1%	1.1%	0.1%	5.9%	1.3%	1.1%

Form 1.4 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: Mid-Rate Case
Noncoincident Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	New PV Installations	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	44,960	3,814	48,774	1,533	0	1,533	47,241	57
1991	42,936	3,648	46,584	1,542	0	1,542	45,042	59
1992	44,948	3,812	48,759	1,532	0	1,532	47,227	57
1993	43,067	3,645	46,712	1,705	0	1,705	45,007	60
1994	45,354	3,827	49,181	1,784	0	1,784	47,397	57
1995	45,611	3,860	49,471	1,810	0	1,810	47,661	57
1996	47,743	4,039	51,782	1,881	0	1,881	49,901	56
1997	49,871	4,227	54,098	1,915	0	1,915	52,183	55
1998	51,936	4,415	56,351	1,875	0	1,875	54,476	53
1999	50,841	4,313	55,154	1,881	0	1,881	53,273	56
2000	51,179	4,346	55,526	1,817	1	1,818	53,708	58
2001	47,422	4,024	51,446	1,686	5	1,691	49,755	59
2002	50,686	4,276	54,962	2,082	11	2,093	52,869	57
2003	52,616	4,422	57,038	2,174	23	2,196	54,842	56
2004	53,471	4,512	57,983	1,949	39	1,987	55,996	57
2005	55,603	4,682	60,285	2,054	58	2,112	58,173	55
2006	60,699	5,160	65,859	1,958	83	2,041	63,817	52
2007	59,586	5,052	64,639	1,824	117	1,940	62,698	54
2008	59,911	5,083	64,994	1,843	204	2,047	62,948	53
2009	59,268	5,001	64,269	1,848	363	2,211	62,058	53
2010	59,743	5,038	64,780	1,853	407	2,260	62,520	53
2011	60,351	5,087	65,438	1,858	449	2,307	63,130	53
2012	61,159	5,153	66,313	1,863	491	2,354	63,959	52
2013	61,852	5,210	67,062	1,863	533	2,396	64,666	52
2014	62,497	5,262	67,759	1,863	575	2,438	65,321	52
2015	63,135	5,313	68,448	1,863	617	2,480	65,968	52
2016	63,748	5,362	69,110	1,863	660	2,522	66,588	52
2017	64,353	5,413	69,766	1,863	675	2,538	67,228	52
2018	64,961	5,464	70,425	1,863	689	2,552	67,873	51
2019	65,575	5,516	71,091	1,863	704	2,567	68,524	51
2020	66,252	5,573	71,826	1,863	719	2,582	69,244	51

Last historical year is 2007

Annual Growth Rates (%)

1990-2000	1.30%	1.31%	1.30%	1.72%	-	1.72%	1.29%
2000-2007	2.20%	2.17%	2.19%	0.05%	107.99%	0.94%	2.24%
2007-2010	0.09%	-0.10%	0.07%	0.53%	51.70%	5.21%	-0.09%
2010-2020	1.04%	1.02%	1.04%	0.05%	5.85%	1.34%	1.03%

Form 1.4 - Statewide
California Energy Demand 2010-2020 Staff Draft Forecast: High-Rate Case
Noncoincident Peak Demand (MW)

Year	Total End Use Load	Net Losses	Gross Generation	Non-PV Self Generation	New PV Installations	Total Private Supply	Net Peak Demand	Load Factor (%)
1990	44,960	3,814	48,774	1,533	0	1,533	47,241	57
1991	42,936	3,648	46,584	1,542	0	1,542	45,042	59
1992	44,948	3,812	48,759	1,532	0	1,532	47,227	57
1993	43,067	3,645	46,712	1,705	0	1,705	45,007	60
1994	45,354	3,827	49,181	1,784	0	1,784	47,397	57
1995	45,611	3,860	49,471	1,810	0	1,810	47,661	57
1996	47,743	4,039	51,782	1,881	0	1,881	49,901	56
1997	49,871	4,227	54,098	1,915	0	1,915	52,183	55
1998	51,936	4,415	56,351	1,875	0	1,875	54,476	53
1999	50,841	4,313	55,154	1,881	0	1,881	53,273	56
2000	51,179	4,346	55,526	1,817	1	1,818	53,708	58
2001	47,422	4,024	51,446	1,686	5	1,691	49,755	59
2002	50,686	4,276	54,962	2,082	11	2,093	52,869	57
2003	52,616	4,422	57,038	2,174	23	2,196	54,842	56
2004	53,471	4,512	57,983	1,949	39	1,987	55,996	57
2005	55,603	4,682	60,285	2,054	58	2,112	58,173	55
2006	60,699	5,160	65,859	1,958	83	2,041	63,817	52
2007	59,586	5,052	64,639	1,824	117	1,940	62,698	54
2008	59,911	5,083	64,994	1,843	204	2,047	62,948	53
2009	59,267	5,001	64,268	1,848	363	2,211	62,057	53
2010	59,742	5,038	64,780	1,853	407	2,260	62,520	53
2011	60,313	5,083	65,396	1,858	449	2,307	63,089	53
2012	61,083	5,146	66,229	1,863	491	2,354	63,875	52
2013	61,739	5,200	66,939	1,863	533	2,396	64,543	52
2014	62,348	5,248	67,596	1,863	575	2,438	65,158	52
2015	62,949	5,297	68,245	1,863	617	2,480	65,765	52
2016	63,497	5,340	68,837	1,863	660	2,522	66,314	52
2017	64,038	5,385	69,423	1,863	675	2,538	66,886	52
2018	64,581	5,431	70,012	1,863	689	2,552	67,460	51
2019	65,130	5,477	70,607	1,863	704	2,567	68,040	51
2020	65,745	5,529	71,274	1,863	719	2,582	68,692	51

Last historical year is 2007

Annual Growth Rates (%)

1990-2000	1.30%	1.31%	1.30%	1.72%	-	1.72%	1.29%
2000-2007	2.20%	2.17%	2.19%	0.05%	107.99%	0.94%	2.24%
2007-2010	0.09%	-0.10%	0.07%	0.53%	51.70%	5.21%	-0.09%
2010-2020	0.96%	0.93%	0.96%	0.05%	5.85%	1.34%	0.95%

California Energy Demand 2010-2020 Staff Draft Forecast
Net Energy for Load by Agency and Balancing Authority (GWH): Mid-Rate Case

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PG&E Service Area	84,941	83,714	84,088	84,619	85,716	86,509	87,154	87,757	88,327	88,914	89,499	90,078	90,712
NCPA	2,600	2,568	2,581	2,596	2,629	2,653	2,673	2,692	2,709	2,726	2,744	2,761	2,779
Silicon Valley Power	3,015	2,976	2,998	3,025	3,081	3,112	3,129	3,144	3,158	3,170	3,180	3,188	3,196
CCSF	1,386	1,366	1,375	1,384	1,400	1,413	1,421	1,429	1,434	1,440	1,446	1,451	1,456
Other NP15 LSEs	3,269	3,266	3,267	3,269	3,273	3,276	3,279	3,281	3,283	3,285	3,287	3,289	3,291
CDWR-N	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378	1,378
Total North of Path 15	96,590	95,268	95,688	96,271	97,478	98,341	99,034	99,681	100,289	100,913	101,533	102,144	102,813
PG&E Service Area	6,784	6,686	6,716	6,758	6,846	6,909	6,961	7,009	7,054	7,101	7,148	7,194	7,245
CDWR-ZP26	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814	2,814
Total Zone Path 26	9,598	9,500	9,530	9,572	9,660	9,723	9,775	9,823	9,868	9,915	9,962	10,008	10,059
Total NP15	106,188	104,768	105,218	105,843	107,137	108,064	108,809	109,504	110,157	110,828	111,495	112,153	112,871
Merced	448	442	445	450	459	463	466	468	470	472	473	474	475
Turlock Irrigation District	2,103	2,066	2,076	2,091	2,121	2,142	2,158	2,172	2,187	2,201	2,216	2,230	2,245
Turlock Irrigation District Control Area	2,552	2,508	2,521	2,540	2,580	2,605	2,623	2,640	2,657	2,673	2,689	2,704	2,720
SMUD	11,609	11,651	11,791	11,934	12,087	12,223	12,354	12,476	12,584	12,685	12,785	12,882	12,985
WAPA (SMUD)	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438	1,438
Redding	870	858	862	867	876	884	892	899	906	914	921	929	938
Roseville	1,352	1,335	1,342	1,351	1,370	1,383	1,393	1,403	1,412	1,421	1,430	1,439	1,449
Shasta PUD	200	196	198	201	206	208	209	210	212	213	214	214	215
Modesto Irrigation District	2,654	2,615	2,628	2,649	2,690	2,718	2,739	2,760	2,780	2,801	2,821	2,842	2,863
Total SMUD/WAPA Control Area	18,122	18,094	18,260	18,440	18,667	18,855	19,026	19,187	19,333	19,472	19,610	19,744	19,887
SCE Service Area	94,180	92,319	92,419	92,946	94,033	94,895	95,624	96,343	97,014	97,704	98,413	99,133	99,889
Anaheim	2,849	2,789	2,793	2,808	2,841	2,867	2,890	2,912	2,932	2,951	2,972	2,992	3,013
Riverside	2,130	2,086	2,088	2,098	2,119	2,139	2,157	2,176	2,193	2,211	2,230	2,249	2,270
Vernon	938	916	919	926	946	954	956	958	960	961	960	958	955
MWD	1,395	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359
Other SP15 LSEs	1,278	1,252	1,253	1,259	1,272	1,282	1,291	1,300	1,308	1,317	1,325	1,334	1,343
Pasadena	1,219	1,202	1,199	1,198	1,195	1,191	1,187	1,183	1,177	1,172	1,167	1,161	1,156
CDWR-S	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142
Total SCE TAC Area	110,131	108,066	108,173	108,737	109,907	110,829	111,608	112,374	113,087	113,817	114,567	115,328	116,127
SDG&E Service Area	21,514	21,464	21,570	21,722	21,959	22,188	22,398	22,605	22,799	23,003	23,215	23,434	23,663
Total South of Path 15	131,645	129,530	129,744	130,459	131,866	133,017	134,006	134,979	135,886	136,820	137,782	138,762	139,791
LADWP	27,204	26,755	26,702	26,846	27,032	27,139	27,216	27,277	27,319	27,359	27,400	27,440	27,477
Burbank	1,279	1,265	1,263	1,262	1,258	1,254	1,249	1,244	1,237	1,231	1,224	1,217	1,211
Glendale	1,332	1,315	1,312	1,314	1,315	1,312	1,309	1,305	1,300	1,295	1,290	1,285	1,280
Total LADWP Control Area	29,815	29,335	29,277	29,422	29,605	29,705	29,774	29,826	29,856	29,885	29,915	29,942	29,967
Imperial Irrigation District Control Area	3,965	3,995	4,065	4,141	4,222	4,302	4,382	4,464	4,544	4,625	4,710	4,797	4,888
Total CAISO	237,832	234,298	234,961	236,303	239,004	241,082	242,815	244,482	246,043	247,648	249,277	250,915	252,662
Total Statewide	292,286	288,230	289,084	290,846	294,077	296,548	298,620	300,599	302,433	304,304	306,201	308,101	310,125

Source: California Energy Commission, 2009

Average Annual Growth 2010-2020
0.8%
0.8%
0.7%
0.6%
0.1%
0.0%
0.8%
0.8%
0.0%
0.6%
0.8%
0.7%
0.9%
0.8%
1.1%
0.0%
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1.0%
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0.9%
0.8%
0.9%
0.4%
0.0%
0.8%
-0.4%
0.0%
0.8%
1.0%
0.8%
0.3%
-0.5%
-0.3%
0.3%
2.1%
0.8%
0.8%

Form 1.5b
California Energy Demand 2010-2020 Staff Draft Forecast
1-in-2 Electric Peak Demand by Agency and Balancing Authority (MW): Mid-Rate Case*

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average Annual Growth 2010-2020
PG&E Service Area	18,441	18,133	18,300	18,492	18,775	19,004	19,211	19,410	19,600	19,800	19,999	20,197	20,426	1.2%
NCPA	412	401	405	408	414	419	424	428	433	437	441	446	451	1.2%
Silicon Valley Power	480	477	482	486	492	497	500	504	510	517	523	530	537	1.2%
CCSF	236	236	238	241	244	247	250	253	256	259	262	265	269	1.3%
Other NP15 LSEs	383	382	382	382	383	384	384	384	385	385	385	386	386	0.1%
CDWR-N	280	280	280	280	280	280	280	280	280	280	280	280	280	0.0%
Total North of Path 15	20,231	19,910	20,087	20,289	20,588	20,831	21,048	21,260	21,464	21,678	21,891	22,104	22,350	1.2%
PG&E Service Area	1,473	1,448	1,462	1,477	1,499	1,518	1,534	1,550	1,565	1,581	1,597	1,613	1,631	1.2%
CDWR-ZP26	70	70	70	70	70	70	70	70	70	70	70	70	70	0.0%
Total Zone Path 26	1,543	1,518	1,532	1,547	1,569	1,588	1,604	1,620	1,635	1,651	1,667	1,683	1,701	1.2%
Total NP15	21,774	21,428	21,618	21,836	22,158	22,419	22,653	22,880	23,099	23,329	23,558	23,787	24,051	1.2%
Merced	85	85	85	86	87	88	88	89	90	91	93	94	95	1.2%
Turlock Irrigation District	525	525	530	537	545	552	557	562	568	574	579	585	592	1.2%
Turlock Irrigation District Control Area	610	610	615	624	633	640	645	651	658	665	672	679	687	1.2%
SMUD	3,077	3,038	3,077	3,114	3,154	3,192	3,230	3,267	3,299	3,331	3,363	3,395	3,429	1.2%
WAPA (SMUD)	150	150	150	150	150	150	150	150	150	150	150	150	150	0.0%
Redding	243	235	237	239	243	246	249	252	254	256	258	260	263	1.2%
Roseville	339	331	334	337	342	346	349	353	356	360	363	367	371	1.2%
Shasta PUD	31	32	32	33	33	33	33	33	34	34	35	35	35	1.1%
Modesto Irrigation District	608	599	604	611	620	626	631	637	643	649	655	661	668	1.1%
Total SMUD/WAPA Control Area	4,448	4,384	4,434	4,483	4,541	4,592	4,642	4,691	4,736	4,780	4,824	4,868	4,917	1.2%
SCE Service Area	21,072	20,963	21,118	21,337	21,641	21,910	22,166	22,422	22,667	22,919	23,175	23,432	23,711	1.3%
Anaheim	559	550	554	560	568	576	582	589	595	602	609	616	623	1.3%
Riverside	571	551	555	561	569	577	585	591	597	603	609	616	622	1.3%
Vernon	184	197	199	202	204	206	207	209	213	216	220	224	228	1.5%
MWD	216	216	216	216	216	216	216	216	216	216	216	216	216	0.0%
Other SP15 LSEs	257	254	256	259	262	266	269	272	274	277	280	283	286	1.2%
Pasadena	292	283	283	283	282	282	281	280	280	279	278	277	276	-0.3%
CDWR-S	178	178	178	300	300	300	300	300	300	300	300	300	300	6.0%
Total SCE TAC Area	23,329	23,193	23,359	23,718	24,044	24,333	24,605	24,879	25,142	25,412	25,686	25,963	26,263	1.3%
SDG&E Service Area	4,596	4,578	4,621	4,668	4,730	4,790	4,847	4,903	4,957	5,014	5,071	5,130	5,190	1.3%
Total South of Path 15	27,926	27,772	27,980	28,387	28,773	29,122	29,452	29,782	30,099	30,425	30,757	31,093	31,453	1.3%
LADWP	6,223	5,847	5,839	5,870	5,905	5,927	5,945	5,962	5,977	5,992	6,008	6,025	6,043	0.4%
Burbank	277	301	301	301	301	300	299	299	297	297	295	294	294	-0.3%
Glendale	300	326	326	326	326	325	324	323	322	321	320	319	318	-0.3%
Total LADWP Control Area	6,800	6,475	6,466	6,497	6,532	6,551	6,569	6,584	6,597	6,610	6,624	6,638	6,655	0.3%
Imperial Irrigation District	977	975	994	1,012	1,031	1,050	1,069	1,088	1,108	1,127	1,147	1,168	1,190	2.0%
Total CAISO Noncoincident Peak	49,700	49,200	49,598	50,223	50,931	51,541	52,104	52,662	53,198	53,754	54,315	54,880	55,504	1.3%
Total CAISO Coincident Peak	48,512	48,024	48,412	49,023	49,714	50,309	50,859	51,403	51,927	52,470	53,017	53,568	54,177	
Total Statewide Noncoincident Peak	62,534	61,644	62,107	62,839	63,667	64,374	65,029	65,677	66,296	66,937	67,582	68,233	68,953	1.2%

Agency peaks are coincident with area peak. 2008 is weather-normalized coincident peak calibrated to planning area total; 2009-2020 are forecast.
Source: California Energy Commission, 2009

California Energy Demand 2010-2020 Staff Draft Forecast
1-in-5 Electric Peak Demand by Agency and Balancing Authority (MW): Mid-Rate Case

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PG&E Service Area	19,108	19,283	19,485	19,783	20,024	20,242	20,451	20,652	20,862	21,071	21,280	21,520
NCPA	423	426	430	436	442	447	451	456	460	465	470	475
Silicon Valley Power	503	508	512	519	524	526	531	538	544	551	558	566
CCSF	249	251	254	257	260	263	266	269	273	276	279	283
Other NP15 LSEs	384	384	384	385	385	386	386	387	387	387	388	388
CDWR-N	280	280	280	280	280	280	280	280	280	280	280	280
Total North of Path 15	20,946	21,132	21,346	21,660	21,915	22,144	22,366	22,581	22,806	23,030	23,254	23,513
PG&E Service Area	1,526	1,540	1,556	1,580	1,599	1,617	1,633	1,649	1,666	1,683	1,700	1,719
CDWR-ZP26	70	70	70	70	70	70	70	70	70	70	70	70
Total Zone Path 26	1,596	1,610	1,626	1,650	1,669	1,687	1,703	1,719	1,736	1,753	1,770	1,789
Total NP15	22,543	22,742	22,972	23,310	23,585	23,831	24,069	24,300	24,542	24,783	25,024	25,302
Merced	89	90	91	92	93	93	94	95	96	97	99	100
Turlock Irrigation District	553	558	566	574	581	586	592	598	604	610	616	623
Total Turlock Irrigation District Control Area	642	648	657	666	673	679	686	693	700	707	715	723
SMUD	3,266	3,308	3,348	3,390	3,431	3,471	3,511	3,546	3,580	3,614	3,649	3,686
WAPA (SMUD)	150	150	150	150	150	150	150	150	150	150	150	150
Redding	252	255	257	261	264	268	270	273	275	277	280	282
Roseville	356	359	362	367	371	375	379	383	387	390	394	399
Shasta PUD	34	35	35	35	36	36	36	36	37	37	38	38
Modesto Irrigation District	644	649	656	666	673	679	685	691	698	704	711	718
Total SMUD/WAPA Control Area	4,702	4,755	4,808	4,870	4,925	4,979	5,032	5,079	5,126	5,174	5,221	5,274
SCE Service Area	22,340	22,504	22,745	23,069	23,355	23,627	23,900	24,160	24,429	24,701	24,976	25,273
Anaheim	586	590	597	606	614	621	628	634	641	649	656	664
Riverside	587	592	598	607	615	623	630	637	643	650	656	663
Vernon	197	199	202	204	206	207	209	213	216	220	224	228
MWD	216	216	216	216	216	216	216	216	216	216	216	216
Other SP15 LSEs	271	273	276	280	283	286	289	292	295	298	302	305
Pasadena	302	302	302	301	300	300	299	298	297	296	295	294
CDWR-S	178	178	300	300	300	300	300	300	300	300	300	300
Total SCE TAC Area	24,678	24,854	25,236	25,582	25,890	26,180	26,472	26,751	27,038	27,330	27,625	27,944
SDG&E Service Area	4,974	5,020	5,072	5,139	5,204	5,266	5,327	5,386	5,447	5,510	5,573	5,639
Total South of Path 15	29,652	29,874	30,309	30,721	31,094	31,446	31,799	32,137	32,485	32,840	33,198	33,582
LADWP	6,235	6,226	6,259	6,297	6,320	6,340	6,357	6,373	6,390	6,406	6,424	6,444
Burbank	321	321	321	321	320	319	318	317	316	315	314	313
Glendale	348	348	348	347	346	346	345	344	343	341	340	339
Total LADWP Control Area	6,904	6,895	6,928	6,965	6,986	7,004	7,020	7,034	7,048	7,063	7,078	7,096
Imperial Irrigation District Control Area	975	994	1,012	1,031	1,050	1,069	1,088	1,108	1,127	1,147	1,168	1,190
Total CAISO Noncoincident Peak	52,194	52,617	53,280	54,031	54,678	55,276	55,868	56,437	57,028	57,623	58,222	58,884
Total CAISO Coincident Peak	50,947	51,359	52,007	52,740	53,372	53,955	54,533	55,088	55,665	56,246	56,831	57,477
Total Statewide Noncoincident Peak	65,418	65,909	66,685	67,563	68,313	69,007	69,694	70,351	71,030	71,714	72,404	73,167

Source: California Energy Commission

California Energy Demand 2010-2020 Staff Draft Forecast
1-in-10 Electric Peak Demand by Agency and Balancing Authority (MW): Mid-Rate Case

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PG&E Service Area	19,385	19,562	19,767	20,069	20,314	20,535	20,747	20,950	21,164	21,376	21,587	21,831
NCPA	429	433	436	443	448	453	458	462	467	472	477	482
Silicon Valley Power	510	515	520	526	531	534	539	545	552	559	566	574
CCSF	253	255	258	261	264	267	270	273	276	280	283	287
Other NP15 LSEs	384	385	385	386	386	387	387	387	388	388	389	389
CDWR-N	280	280	280	280	280	280	280	280	280	280	280	280
Total North of Path 15	21,241	21,430	21,646	21,965	22,224	22,456	22,681	22,899	23,127	23,355	23,582	23,844
PG&E Service Area	1,548	1,562	1,579	1,603	1,622	1,640	1,657	1,673	1,690	1,707	1,724	1,744
CDWR-ZP26	70	70	70	70	70	70	70	70	70	70	70	70
Total Zone Path 26	1,618	1,632	1,649	1,673	1,692	1,710	1,727	1,743	1,760	1,777	1,794	1,814
Total NP15	22,860	23,062	23,295	23,638	23,916	24,166	24,408	24,642	24,888	25,132	25,376	25,658
Merced	90	91	92	93	94	94	95	96	98	99	100	102
Turlock Irrigation District	561	566	574	582	589	594	600	606	612	619	625	632
Total Turlock Irrigation District Control Area	651	657	666	676	683	689	696	703	710	717	725	733
SMUD	3,331	3,373	3,414	3,457	3,499	3,540	3,581	3,616	3,650	3,686	3,721	3,758
WAPA (SMUD)	150	150	150	150	150	150	150	150	150	150	150	150
Redding	257	260	262	266	269	273	276	278	280	283	285	288
Roseville	363	366	369	374	379	383	386	390	394	398	402	407
Shasta PUD	35	35	36	36	36	36	37	37	37	38	38	39
Modesto Irrigation District	656	662	669	679	686	692	698	705	712	718	725	732
Total SMUD/WAPA Control Area	4,792	4,846	4,900	4,963	5,020	5,074	5,128	5,176	5,224	5,273	5,321	5,374
SCE Service Area	22,727	22,894	23,141	23,470	23,762	24,038	24,316	24,581	24,854	25,131	25,410	25,712
Anaheim	596	601	608	616	624	631	639	645	653	660	668	676
Riverside	597	602	609	618	626	634	641	648	654	661	668	675
Vernon	197	199	202	204	206	207	209	213	216	220	224	228
MWD	216	216	216	216	216	216	216	216	216	216	216	216
Other SP15 LSEs	276	278	281	285	288	291	294	297	301	304	307	310
Pasadena	307	307	307	306	306	305	304	303	302	301	300	299
CDWR-S	178	178	300	300	300	300	300	300	300	300	300	300
Total SCE TAC Area	25,095	25,275	25,663	26,015	26,328	26,623	26,919	27,203	27,495	27,792	28,092	28,416
SDG&E Service Area	5,086	5,134	5,187	5,255	5,321	5,384	5,447	5,508	5,570	5,634	5,699	5,766
Total South of Path 15	30,182	30,408	30,850	31,270	31,649	32,007	32,366	32,711	33,066	33,426	33,791	34,182
LADWP	6,345	6,335	6,369	6,408	6,431	6,451	6,469	6,486	6,502	6,519	6,537	6,557
Burbank	327	327	327	326	325	325	324	323	322	321	319	319
Glendale	354	354	354	353	353	352	351	350	349	347	346	345
Total LADWP Control Area	7,026	7,016	7,050	7,088	7,109	7,128	7,144	7,158	7,173	7,187	7,203	7,221
Imperial Irrigation District Control Area	975	994	1,012	1,031	1,050	1,069	1,088	1,108	1,127	1,147	1,168	1,190
Total CAISO Noncoincident Peak	53,041	53,470	54,145	54,908	55,566	56,173	56,775	57,353	57,953	58,558	59,167	59,840
Total CAISO Coincident Peak	51,774	52,192	52,851	53,595	54,238	54,831	55,418	55,982	56,568	57,159	57,753	58,410
Total Statewide Noncoincident Peak	66,486	66,984	67,773	68,665	69,427	70,133	70,830	71,498	72,187	72,883	73,584	74,359

Source: California Energy Commission

California Energy Demand 2010-2020 Staff Draft Forecast
1-in-20 Electric Peak Demand by Agency and Balancing Authority (MW): Mid-Rate Case

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PG&E Service Area	19,625	19,804	20,011	20,317	20,565	20,788	21,002	21,209	21,424	21,639	21,853	22,100
NCPA	434	438	442	448	454	459	464	468	473	478	483	488
Silicon Valley Power	517	521	526	533	538	541	546	552	559	566	573	581
CCSF	256	258	261	264	267	271	274	277	280	283	287	291
Other NP15 LSEs	386	386	386	387	387	388	388	389	389	389	390	390
CDWR-N	280	280	280	280	280	280	280	280	280	280	280	280
Total North of Path 15	21,497	21,687	21,906	22,229	22,491	22,726	22,954	23,174	23,405	23,635	23,865	24,130
PG&E Service Area	1,567	1,582	1,598	1,623	1,642	1,660	1,677	1,694	1,711	1,728	1,745	1,765
CDWR-ZP26	70	70	70	70	70	70	70	70	70	70	70	70
Total Zone Path 26	1,637	1,652	1,668	1,693	1,712	1,730	1,747	1,764	1,781	1,798	1,815	1,835
Total NP15	23,134	23,339	23,575	23,921	24,203	24,456	24,701	24,938	25,186	25,433	25,681	25,965
Merced	91	92	93	94	95	96	96	98	99	100	101	103
Turlock Irrigation District	568	573	581	589	596	602	608	614	620	626	632	639
Total Turlock Irrigation District Control Area	659	665	674	684	691	697	704	711	719	726	734	742
SMUD	3,387	3,430	3,471	3,515	3,557	3,599	3,641	3,677	3,712	3,747	3,783	3,821
WAPA (SMUD)	150	150	150	150	150	150	150	150	150	150	150	150
Redding	262	264	266	270	274	277	280	283	285	288	290	293
Roseville	369	372	375	381	385	389	393	397	401	405	409	414
Shasta PUD	36	36	36	37	37	37	37	38	38	38	39	39
Modesto Irrigation District	667	673	681	691	698	704	710	717	724	730	737	745
Total SMUD/WAPA Control Area	4,870	4,925	4,980	5,044	5,101	5,157	5,211	5,261	5,309	5,359	5,408	5,462
SCE Service Area	23,071	23,241	23,493	23,827	24,123	24,404	24,685	24,954	25,231	25,513	25,796	26,103
Anaheim	605	610	617	626	634	641	648	655	662	670	678	686
Riverside	606	611	618	627	635	644	651	658	664	671	678	685
Vernon	197	199	202	204	206	207	209	213	216	220	224	228
MWD	216	216	216	216	216	216	216	216	216	216	216	216
Other SP15 LSEs	280	282	285	289	292	296	299	302	305	308	312	315
Pasadena	312	312	311	311	310	310	309	308	307	306	305	304
CDWR-S	178	178	300	300	300	300	300	300	300	300	300	300
Total SCE TAC Area	25,466	25,648	26,043	26,400	26,717	27,016	27,317	27,605	27,902	28,203	28,508	28,836
SDG&E Service Area	5,184	5,232	5,286	5,355	5,423	5,488	5,552	5,613	5,677	5,742	5,808	5,877
Total South of Path 15	30,650	30,880	31,329	31,755	32,141	32,504	32,869	33,219	33,579	33,945	34,316	34,713
LADWP	6,440	6,431	6,465	6,504	6,528	6,548	6,566	6,583	6,600	6,617	6,635	6,656
Burbank	332	332	332	331	330	330	329	328	327	325	324	323
Glendale	359	359	359	359	358	357	356	355	354	353	351	350
Total LADWP Control Area	7,132	7,122	7,156	7,194	7,216	7,235	7,251	7,266	7,280	7,295	7,311	7,329
Imperial Irrigation District Control Area	975	994	1,012	1,031	1,050	1,069	1,088	1,108	1,127	1,147	1,168	1,190
Total CAISO Noncoincident Peak	53,784	54,219	54,903	55,677	56,344	56,960	57,570	58,156	58,765	59,379	59,996	60,678
Total CAISO Coincident Peak	52,499	52,923	53,591	54,346	54,997	55,599	56,194	56,766	57,361	57,959	58,562	59,228
Total Statewide Noncoincident Peak	67,420	67,925	68,725	69,630	70,402	71,118	71,825	72,502	73,201	73,906	74,617	75,403

Source: California Energy Commission

Form 2.2 - Statewide
California Energy Demand 2009-2020 Staff Preliminary Forecast
Economic and Demographic Assumptions

	Population	Households	Persons per Household	Real Personal Income (Millions 2007$)	Industrial Output (Millions 2007$)	Commercial Floorspace (MM Sqft.)
1990	29,828,685	10,370,754	2.88	939,103	111,583	4,915
1991	30,458,225	10,543,349	2.89	927,667	108,300	5,078
1992	30,986,940	10,666,772	2.90	953,273	105,149	5,210
1993	31,313,835	10,769,374	2.91	946,769	101,221	5,301
1994	31,523,270	10,864,237	2.90	956,703	100,371	5,365
1995	31,711,155	10,956,461	2.89	982,765	104,060	5,425
1996	31,961,985	11,045,475	2.89	1,020,724	109,019	5,484
1997	32,451,640	11,139,124	2.91	1,066,064	130,881	5,545
1998	32,861,690	11,244,536	2.92	1,146,834	148,783	5,622
1999	33,416,925	11,365,121	2.94	1,206,855	177,526	5,731
2000	34,152,028	11,455,794	2.98	1,304,742	223,783	5,862
2001	34,747,465	11,589,248	3.00	1,310,449	201,076	5,991
2002	35,358,330	11,725,542	3.02	1,302,061	187,394	6,138
2003	35,926,021	11,869,582	3.03	1,319,915	195,025	6,271
2004	36,437,344	12,028,256	3.03	1,371,631	209,457	6,378
2005	36,894,972	12,204,539	3.02	1,415,391	224,126	6,487
2006	37,337,019	12,373,759	3.02	1,481,919	232,239	6,572
2007	37,804,451	12,514,544	3.02	1,519,270	237,070	6,676
2008	38,291,487	12,646,895	3.03	1,492,916	243,897	6,775
2009	38,778,524	12,781,274	3.03	1,491,899	249,620	6,876
2010	39,265,560	12,917,605	3.04	1,523,377	255,582	6,963
2011	39,752,596	13,056,043	3.04	1,573,741	261,502	7,048
2012	40,239,633	13,196,623	3.05	1,623,966	267,100	7,141
2013	40,726,669	13,339,389	3.05	1,666,662	272,064	7,245
2014	41,213,705	13,484,383	3.06	1,708,020	276,727	7,349
2015	41,700,741	13,631,649	3.06	1,747,839	281,587	7,451
2016	42,187,778	13,781,226	3.06	1,788,490	286,489	7,549
2017	42,674,814	13,933,169	3.06	1,830,274	291,179	7,645
2018	43,161,850	14,087,510	3.06	1,872,721	295,609	7,740
2019	43,648,887	14,244,324	3.06	1,915,320	298,857	7,835
2020	44,135,923	14,403,649	3.06	1,958,760	302,858	7,929
Annual Growth Rates (%)						
1990-2000	1.36%	1.00%	0.36%	3.34%	7.21%	1.78%
2000-2007	1.46%	1.27%	0.19%	2.20%	0.83%	1.88%
2007-2010	1.27%	1.06%	0.21%	0.09%	2.54%	1.41%
2010-2020	1.18%	1.09%	0.08%	2.55%	1.71%	1.31%

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Loss Factors - Losses are included in the net peak and net energy for load tables		
	Peak	Energy
PG&E	1.097	1.096
SMUD	1.077	1.064
SCE	1.076	1.068
LADWP	1.112	1.135
SDG&E	1.096	1.0709
Burbank, Glendale, Pasadena	1.060	1.064
IID	1.000	1.128
DWR	1.000	1.038

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
PG&E/Residential	1990	1,010	1,190	646	0	67	67	67	2,912	2,912	2,912
(Consumption in GWH)	1991	1,128	1,335	687	0	70	70	70	3,220	3,220	3,220
	1992	1,240	1,526	727	0	73	73	73	3,566	3,566	3,566
	1993	1,342	1,709	766	0	76	76	76	3,893	3,893	3,893
	1994	1,443	1,889	808	0	79	79	79	4,219	4,219	4,219
	1995	1,539	2,062	857	0	82	82	82	4,540	4,540	4,540
	1996	1,633	2,234	894	0	84	84	84	4,844	4,844	4,844
	1997	1,729	2,403	926	0	87	87	87	5,145	5,145	5,145
	1998	1,830	2,575	984	0	90	90	90	5,479	5,479	5,479
	1999	1,935	2,746	1,048	0	93	93	93	5,823	5,823	5,823
	2000	2,039	2,911	1,093	0	96	96	96	6,140	6,140	6,140
	2001	2,154	3,079	1,161	0	100	100	100	6,494	6,494	6,494
	2002	2,275	3,315	1,084	0	103	103	103	6,778	6,778	6,778
	2003	2,354	3,469	997	0	106	106	106	6,925	6,925	6,925
	2004	2,287	3,624	1,031	0	108	108	108	7,050	7,050	7,050
	2005	2,388	3,797	1,128	0	112	112	112	7,424	7,424	7,424
	2006	2,493	3,935	1,271	0	114	114	114	7,813	7,813	7,813
	2007	2,590	4,060	1,646	0	117	117	117	8,412	8,412	8,412
	2008	2,689	4,185	2,298	0	119	119	119	9,291	9,291	9,291
	2009	2,790	4,308	2,763	0	122	122	122	9,982	9,982	9,982
	2010	2,891	4,429	3,215	0	124	124	124	10,659	10,659	10,659
	2011	3,002	4,556	3,646	0	127	129	132	11,332	11,334	11,336
	2012	3,115	4,682	3,519	0	176	181	186	11,492	11,497	11,502
	2013	3,229	4,807	3,359	0	246	254	261	11,641	11,648	11,656
	2014	3,345	4,930	3,158	0	350	361	371	11,783	11,794	11,804
	2015	3,463	5,051	2,912	0	500	513	527	11,926	11,939	11,952
	2016	3,582	5,172	2,619	0	704	723	741	12,077	12,096	12,114
	2017	3,702	5,290	2,280	0	964	989	1,012	12,236	12,261	12,284
	2018	3,822	5,407	1,904	0	1,265	1,296	1,324	12,398	12,429	12,457
	2019	3,948	5,527	1,517	0	1,574	1,611	1,645	12,566	12,603	12,637
	2020	4,079	5,649	1,152	0	1,857	1,901	1,941	12,737	12,781	12,821

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
PG&E/Residential	1990	240	283	154	0	16	16	16	693	693	693
(Peak in MW)	1991	269	318	164	0	17	17	17	768	768	768
	1992	262	323	154	0	15	15	15	754	754	754
	1993	310	395	177	0	18	18	18	900	900	900
	1994	321	420	180	0	18	18	18	938	938	938
	1995	366	491	204	0	19	19	19	1,080	1,080	1,080
	1996	418	571	229	0	22	22	22	1,239	1,239	1,239
	1997	420	584	225	0	21	21	21	1,251	1,251	1,251
	1998	491	691	264	0	24	24	24	1,470	1,470	1,470
	1999	514	730	279	0	25	25	25	1,548	1,548	1,548
	2000	531	758	285	0	25	25	25	1,599	1,599	1,599
	2001	568	811	306	0	26	26	26	1,711	1,711	1,711
	2002	630	919	300	0	29	29	29	1,878	1,878	1,878
	2003	602	888	255	0	27	27	27	1,772	1,772	1,772
	2004	526	833	237	0	25	25	25	1,620	1,620	1,620
	2005	623	991	294	0	29	29	29	1,938	1,938	1,938
	2006	781	1,233	398	0	36	36	36	2,447	2,447	2,447
	2007	677	1,061	430	0	30	30	30	2,199	2,199	2,199
	2008	759	1,181	648	0	34	34	34	2,622	2,622	2,622
	2009	766	1,183	759	0	33	33	33	2,742	2,742	2,742
	2010	803	1,230	893	0	34	34	34	2,961	2,961	2,961
	2011	842	1,277	1,022	0	36	36	37	3,176	3,177	3,178
	2012	879	1,321	993	0	50	51	52	3,241	3,243	3,244
	2013	917	1,365	954	0	70	72	74	3,305	3,307	3,309
	2014	956	1,409	902	0	100	103	106	3,367	3,370	3,373
	2015	996	1,452	837	0	144	148	151	3,429	3,433	3,436
	2016	1,036	1,495	757	0	204	209	214	3,492	3,498	3,503
	2017	1,076	1,538	663	0	280	288	294	3,557	3,565	3,571
	2018	1,117	1,580	556	0	370	379	387	3,622	3,632	3,640
	2019	1,159	1,623	445	0	462	473	483	3,689	3,700	3,710
	2020	1,205	1,669	340	0	549	562	573	3,763	3,776	3,788

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
PG&E/Commercial	1990	474	249	35	132	6,190	6,190	6,190	7,081	7,081	7,081
(Consumption in GWH)	1991	517	289	70	136	6,461	6,461	6,461	7,473	7,473	7,473
	1992	548	320	142	130	6,858	6,858	6,858	7,999	7,999	7,999
Note: Commercial	1993	588	356	225	119	6,933	6,933	6,933	8,221	8,221	8,221
Savings Includes	1994	622	392	288	106	7,052	7,052	7,052	8,459	8,459	8,459
Agricultural	1995	669	440	355	91	6,592	6,592	6,592	8,147	8,147	8,147
	1996	708	480	424	76	6,439	6,439	6,439	8,127	8,127	8,127
	1997	749	525	519	63	6,404	6,404	6,404	8,260	8,260	8,260
	1998	806	571	707	52	6,293	6,293	6,293	8,429	8,429	8,429
	1999	904	635	795	42	6,166	6,166	6,166	8,541	8,541	8,541
	2000	1,015	701	943	33	6,002	6,002	6,002	8,694	8,694	8,694
	2001	1,046	707	1,058	26	8,682	8,682	8,682	11,518	11,518	11,518
	2002	1,195	768	1,045	20	9,080	9,080	9,080	12,107	12,107	12,107
	2003	1,290	823	1,006	14	9,091	9,091	9,091	12,224	12,224	12,224
	2004	1,377	876	877	10	8,461	8,461	8,461	11,601	11,601	11,601
	2005	1,462	929	882	6	8,089	8,089	8,089	11,367	11,367	11,367
	2006	1,542	977	940	4	7,539	7,539	7,539	11,001	11,001	11,001
	2007	1,616	1,022	1,171	2	7,398	7,398	7,398	11,209	11,209	11,209
	2008	1,730	1,085	1,834	1	6,694	6,694	6,694	11,344	11,344	11,344
	2009	1,791	1,117	1,959	0	7,299	7,299	7,299	12,167	12,167	12,167
	2010	1,872	1,163	2,046	0	7,358	7,358	7,358	12,438	12,438	12,438
	2011	1,949	1,206	2,113	0	7,404	7,472	7,541	12,672	12,740	12,808
	2012	2,027	1,247	1,857	0	7,438	7,575	7,710	12,569	12,706	12,841
	2013	2,109	1,289	1,633	0	7,472	7,683	7,875	12,503	12,714	12,906
	2014	2,194	1,332	1,452	0	7,516	7,797	8,040	12,495	12,776	13,019
	2015	2,280	1,376	1,313	0	7,565	7,920	8,208	12,534	12,889	13,177
	2016	2,366	1,419	1,206	0	7,617	8,090	8,455	12,609	13,081	13,446
	2017	2,451	1,462	1,114	0	7,670	8,260	8,703	12,698	13,288	13,730
	2018	2,537	1,505	1,023	0	7,723	8,429	8,942	12,788	13,494	14,007
	2019	2,622	1,548	922	0	7,776	8,594	9,174	12,868	13,686	14,266
	2020	2,707	1,591	811	0	7,831	8,763	9,402	12,940	13,872	14,511

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
PG&E/Commercial	1990	83	44	6	23	1,087	1,087	1,087	1,244	1,244	1,244
(Peak in MW)	1991	87	49	12	23	1,086	1,086	1,086	1,256	1,256	1,256
	1992	94	55	24	22	1,176	1,176	1,176	1,372	1,372	1,372
Note: Commercial	1993	106	64	40	21	1,249	1,249	1,249	1,481	1,481	1,481
Savings Includes	1994	111	70	51	19	1,260	1,260	1,260	1,512	1,512	1,512
Agricultural	1995	129	85	69	18	1,273	1,273	1,273	1,573	1,573	1,573
	1996	132	90	79	14	1,204	1,204	1,204	1,519	1,519	1,519
	1997	140	98	97	12	1,195	1,195	1,195	1,541	1,541	1,541
	1998	158	112	139	10	1,236	1,236	1,236	1,655	1,655	1,655
	1999	168	118	148	8	1,150	1,150	1,150	1,593	1,593	1,593
	2000	196	136	182	6	1,162	1,162	1,162	1,683	1,683	1,683
	2001	189	128	191	5	1,569	1,569	1,569	2,082	2,082	2,082
	2002	218	140	191	4	1,656	1,656	1,656	2,209	2,209	2,209
	2003	249	159	194	3	1,757	1,757	1,757	2,363	2,363	2,363
	2004	262	166	167	2	1,608	1,608	1,608	2,205	2,205	2,205
	2005	271	172	163	1	1,500	1,500	1,500	2,107	2,107	2,107
	2006	309	196	188	1	1,511	1,511	1,511	2,205	2,205	2,205
	2007	298	189	216	0	1,365	1,365	1,365	2,069	2,069	2,069
	2008	317	199	337	0	1,228	1,228	1,228	2,082	2,082	2,082
	2009	314	196	343	0	1,278	1,278	1,278	2,131	2,131	2,131
	2010	328	204	358	0	1,289	1,289	1,289	2,179	2,179	2,179
	2011	341	211	370	0	1,297	1,309	1,321	2,220	2,232	2,244
	2012	355	218	325	0	1,301	1,325	1,349	2,199	2,223	2,247
	2013	369	225	285	0	1,306	1,343	1,376	2,185	2,222	2,255
	2014	383	233	253	0	1,312	1,361	1,404	2,182	2,231	2,273
	2015	398	240	229	0	1,320	1,382	1,432	2,187	2,249	2,299
	2016	413	247	210	0	1,329	1,411	1,475	2,199	2,281	2,345
	2017	427	255	194	0	1,337	1,440	1,517	2,214	2,316	2,394
	2018	442	262	178	0	1,346	1,469	1,558	2,228	2,351	2,441
	2019	457	270	161	0	1,355	1,497	1,598	2,241	2,384	2,485
	2020	471	277	141	0	1,363	1,526	1,637	2,253	2,415	2,527

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SCE/Residential	1990	1,147	1,223	176	0	9	9	9	2,556	2,556	2,556
(Consumption in GWH)	1991	1,207	1,343	150	0	10	10	10	2,709	2,709	2,709
	1992	1,246	1,497	146	0	11	11	11	2,900	2,900	2,900
	1993	1,280	1,643	150	0	12	12	12	3,084	3,084	3,084
	1994	1,307	1,780	163	0	12	12	12	3,262	3,262	3,262
	1995	1,338	1,923	160	0	13	13	13	3,434	3,434	3,434
	1996	1,364	2,056	158	0	14	14	14	3,593	3,593	3,593
	1997	1,390	2,186	151	0	15	15	15	3,742	3,742	3,742
	1998	1,420	2,318	207	0	15	15	15	3,961	3,961	3,961
	1999	1,447	2,445	277	0	16	16	16	4,185	4,185	4,185
	2000	1,471	2,567	384	0	17	17	17	4,440	4,440	4,440
	2001	1,505	2,694	466	0	18	18	18	4,684	4,684	4,684
	2002	1,540	2,896	517	0	19	19	19	4,972	4,972	4,972
	2003	1,591	3,033	577	0	20	20	20	5,221	5,221	5,221
	2004	1,521	3,178	833	0	21	21	21	5,553	5,553	5,553
	2005	1,577	3,326	1,137	0	23	23	23	6,063	6,063	6,063
	2006	1,668	3,467	1,431	0	24	24	24	6,589	6,589	6,589
	2007	1,742	3,582	2,121	0	25	25	25	7,470	7,470	7,470
	2008	1,817	3,699	2,558	0	26	26	26	8,100	8,100	8,100
	2009	1,895	3,816	2,883	0	27	27	27	8,620	8,620	8,620
	2010	1,974	3,932	3,191	0	27	27	27	9,124	9,124	9,124
	2011	2,051	4,044	3,480	0	28	31	34	9,603	9,606	9,608
	2012	2,130	4,153	3,366	0	98	103	109	9,747	9,752	9,758
	2013	2,209	4,260	3,218	0	200	208	217	9,887	9,896	9,904
	2014	2,289	4,366	3,020	0	347	359	370	10,022	10,034	10,046
	2015	2,370	4,470	2,767	0	546	561	576	10,152	10,168	10,183
	2016	2,451	4,571	2,459	0	795	816	837	10,275	10,297	10,317
	2017	2,532	4,671	2,108	0	1,079	1,108	1,134	10,390	10,418	10,444
	2018	2,613	4,768	1,738	0	1,376	1,411	1,443	10,494	10,530	10,562
	2019	2,697	4,867	1,377	0	1,656	1,699	1,737	10,598	10,640	10,678
	2020	2,786	4,969	1,047	0	1,900	1,950	1,995	10,702	10,752	10,797

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SCE/Residential	1990	315	336	48	0	3	3	3	702	702	702
(Peak in MW)	1991	295	329	37	0	2	2	2	663	663	663
	1992	365	438	43	0	3	3	3	849	849	849
	1993	323	414	38	0	3	3	3	778	778	778
	1994	385	525	48	0	4	4	4	961	961	961
	1995	397	571	47	0	4	4	4	1,019	1,019	1,019
	1996	381	575	44	0	4	4	4	1,005	1,005	1,005
	1997	436	685	47	0	5	5	5	1,172	1,172	1,172
	1998	411	672	60	0	4	4	4	1,147	1,147	1,147
	1999	391	660	75	0	4	4	4	1,130	1,130	1,130
	2000	392	684	102	0	5	5	5	1,183	1,183	1,183
	2001	390	699	121	0	5	5	5	1,214	1,214	1,214
	2002	376	707	126	0	5	5	5	1,213	1,213	1,213
	2003	415	791	151	0	5	5	5	1,361	1,361	1,361
	2004	382	798	209	0	5	5	5	1,395	1,395	1,395
	2005	466	982	336	0	7	7	7	1,791	1,791	1,791
	2006	494	1,027	424	0	7	7	7	1,953	1,953	1,953
	2007	536	1,102	652	0	8	8	8	2,297	2,297	2,297
	2008	521	1,061	734	0	7	7	7	2,323	2,323	2,323
	2009	560	1,129	853	0	8	8	8	2,550	2,550	2,550
	2010	591	1,178	956	0	8	8	8	2,733	2,733	2,733
	2011	620	1,222	1,052	0	9	9	10	2,903	2,904	2,905
	2012	649	1,266	1,026	0	30	32	33	2,970	2,972	2,973
	2013	679	1,309	989	0	61	64	67	3,038	3,041	3,043
	2014	709	1,353	936	0	107	111	115	3,106	3,109	3,113
	2015	741	1,397	865	0	171	175	180	3,173	3,178	3,182
	2016	772	1,440	774	0	250	257	263	3,236	3,243	3,250
	2017	803	1,481	669	0	342	351	360	3,295	3,304	3,313
	2018	834	1,522	555	0	439	450	461	3,350	3,361	3,371
	2019	866	1,563	442	0	532	545	558	3,402	3,416	3,428
	2020	900	1,605	338	0	614	630	644	3,456	3,472	3,487

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
California Energy Demand 2010-2020 Staff Draft Forecast

Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SCE/Commercial	1990	515	348	40	49	2,647	2,647	2,647	3,600	3,600	3,600
(Consumption in GWH)	1991	619	408	91	54	2,884	2,884	2,884	4,055	4,055	4,055
	1992	718	472	117	55	2,954	2,954	2,954	4,316	4,316	4,316
Note: Commercial	1993	793	527	172	58	2,643	2,643	2,643	4,193	4,193	4,193
Savings Includes	1994	846	571	244	63	2,630	2,630	2,630	4,354	4,354	4,354
Agricultural	1995	894	616	271	59	2,525	2,525	2,525	4,365	4,365	4,365
	1996	957	669	305	55	2,112	2,112	2,112	4,097	4,097	4,097
	1997	1,020	718	326	51	1,892	1,892	1,892	4,006	4,006	4,006
	1998	1,099	776	535	47	1,645	1,645	1,645	4,101	4,101	4,101
	1999	1,192	839	696	42	1,487	1,487	1,487	4,256	4,256	4,256
	2000	1,334	929	802	37	1,339	1,339	1,339	4,441	4,441	4,441
	2001	1,374	950	887	32	3,300	3,300	3,300	6,543	6,543	6,543
	2002	1,470	999	924	26	4,050	4,050	4,050	7,469	7,469	7,469
	2003	1,638	1,096	867	21	3,676	3,676	3,676	7,298	7,298	7,298
	2004	1,800	1,196	786	16	2,854	2,854	2,854	6,653	6,653	6,653
	2005	1,940	1,281	752	12	2,637	2,637	2,637	6,622	6,622	6,622
	2006	1,987	1,308	745	8	3,789	3,789	3,789	7,836	7,836	7,836
	2007	2,145	1,388	815	5	3,334	3,334	3,334	7,686	7,686	7,686
	2008	2,319	1,477	1,074	2	2,879	2,879	2,879	7,752	7,752	7,752
	2009	2,394	1,509	1,303	1	3,968	3,968	3,968	9,175	9,175	9,175
	2010	2,510	1,568	1,522	1	4,190	4,190	4,190	9,791	9,791	9,791
	2011	2,631	1,628	1,736	0	4,228	4,293	4,353	10,223	10,288	10,348
	2012	2,763	1,687	1,644	0	4,269	4,399	4,523	10,363	10,492	10,616
	2013	2,911	1,753	1,564	0	4,322	4,518	4,709	10,549	10,745	10,937
	2014	3,069	1,821	1,496	0	4,385	4,653	4,907	10,771	11,039	11,293
	2015	3,225	1,889	1,439	0	4,451	4,788	5,114	11,004	11,341	11,667
	2016	3,378	1,956	1,386	0	4,519	4,988	5,422	11,239	11,709	12,142
	2017	3,530	2,022	1,331	0	4,587	5,190	5,735	11,470	12,073	12,618
	2018	3,682	2,088	1,267	0	4,656	5,394	6,056	11,694	12,431	13,094
	2019	3,835	2,155	1,191	0	4,727	5,604	6,384	11,908	12,786	13,565
	2020	3,989	2,222	1,105	0	4,799	5,821	6,718	12,116	13,138	14,035

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SCE/Commercial	1990	124	84	10	12	635	635	635	864	864	864
(Peak in MW)	1991	136	90	20	12	635	635	635	893	893	893
	1992	164	108	27	13	675	675	675	986	986	986
Note: Commercial	1993	162	108	35	12	541	541	541	858	858	858
Savings Includes	1994	183	123	53	14	567	567	567	940	940	940
Agricultural	1995	185	128	56	12	523	523	523	905	905	905
	1996	203	142	65	12	449	449	449	871	871	871
	1997	212	150	68	11	394	394	394	835	835	835
	1998	249	176	121	11	372	372	372	929	929	929
	1999	250	176	146	9	312	312	312	892	892	892
	2000	260	181	156	7	261	261	261	865	865	865
	2001	262	181	169	6	630	630	630	1,249	1,249	1,249
	2002	300	204	188	5	826	826	826	1,524	1,524	1,524
	2003	349	233	185	4	783	783	783	1,554	1,554	1,554
	2004	388	258	169	3	615	615	615	1,433	1,433	1,433
	2005	411	272	160	2	559	559	559	1,404	1,404	1,404
	2006	420	277	158	2	802	802	802	1,658	1,658	1,658
	2007	457	296	174	1	710	710	710	1,636	1,636	1,636
	2008	480	306	222	1	596	596	596	1,606	1,606	1,606
	2009	500	315	272	0	828	828	828	1,915	1,915	1,915
	2010	524	327	318	0	875	875	875	2,045	2,045	2,045
	2011	550	340	363	0	884	897	910	2,137	2,150	2,163
	2012	576	352	343	0	891	918	943	2,162	2,189	2,215
	2013	606	365	326	0	900	941	980	2,196	2,237	2,277
	2014	638	378	311	0	911	967	1,020	2,238	2,294	2,347
	2015	669	392	299	0	923	993	1,061	2,283	2,353	2,421
	2016	700	405	287	0	936	1,033	1,123	2,328	2,425	2,515
	2017	730	418	275	0	949	1,074	1,186	2,372	2,497	2,610
	2018	761	431	262	0	962	1,114	1,251	2,415	2,568	2,704
	2019	791	444	246	0	975	1,156	1,316	2,456	2,637	2,797
	2020	821	458	227	0	988	1,199	1,383	2,495	2,705	2,890

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SDG&E/Residential	1990	110	270	27	0	168	168	168	575	575	575
(Consumption in GWH)	1991	119	300	25	0	180	180	180	624	624	624
	1992	127	339	23	0	192	192	192	681	681	681
	1993	135	376	22	0	204	204	204	737	737	737
	1994	143	412	22	0	216	216	216	793	793	793
	1995	151	448	20	0	228	228	228	847	847	847
	1996	158	483	19	0	240	240	240	901	901	901
	1997	166	520	18	0	252	252	252	957	957	957
	1998	173	558	61	0	264	264	264	1,057	1,057	1,057
	1999	180	599	76	0	276	276	276	1,131	1,131	1,131
	2000	188	636	93	0	288	288	288	1,206	1,206	1,206
	2001	196	673	133	0	300	300	300	1,302	1,302	1,302
	2002	203	728	146	0	300	300	300	1,378	1,378	1,378
	2003	211	760	180	0	300	300	300	1,451	1,451	1,451
	2004	182	791	267	0	300	300	300	1,540	1,540	1,540
	2005	188	822	354	0	300	300	300	1,665	1,665	1,665
	2006	201	848	386	0	300	300	300	1,735	1,735	1,735
	2007	213	873	514	0	300	300	300	1,901	1,901	1,901
	2008	226	899	570	0	300	300	300	1,994	1,994	1,994
	2009	238	923	614	0	300	300	300	2,076	2,076	2,076
	2010	252	946	654	0	300	300	300	2,152	2,152	2,152
	2011	265	970	690	0	300	301	301	2,224	2,225	2,225
	2012	277	992	659	0	321	322	323	2,249	2,250	2,252
	2013	290	1,015	620	0	349	351	353	2,274	2,276	2,278
	2014	303	1,037	571	0	388	391	393	2,299	2,301	2,304
	2015	315	1,058	514	0	435	439	442	2,323	2,326	2,329
	2016	328	1,079	450	0	487	492	497	2,345	2,350	2,354
	2017	340	1,100	383	0	542	548	554	2,365	2,371	2,377
	2018	352	1,120	317	0	594	602	609	2,383	2,391	2,398
	2019	365	1,140	255	0	641	650	659	2,401	2,410	2,419
	2020	379	1,161	198	0	680	691	702	2,418	2,430	2,440

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SDG&E/Residential	1990	18	45	4	0	28	28	28	96	96	96
(Peak in MW)	1991	20	49	4	0	29	29	29	102	102	102
	1992	26	68	5	0	39	39	39	137	137	137
	1993	21	59	3	0	32	32	32	115	115	115
	1994	29	83	4	0	43	43	43	160	160	160
	1995	28	84	4	0	43	43	43	159	159	159
	1996	28	87	3	0	43	43	43	162	162	162
	1997	36	113	4	0	55	55	55	207	207	207
	1998	37	119	13	0	56	56	56	225	225	225
	1999	29	96	12	0	44	44	44	181	181	181
	2000	29	100	15	0	45	45	45	189	189	189
	2001	29	101	20	0	45	45	45	195	195	195
	2002	33	119	24	0	49	49	49	226	226	226
	2003	39	140	33	0	55	55	55	268	268	268
	2004	35	153	52	0	58	58	58	298	298	298
	2005	34	149	64	0	54	54	54	301	301	301
	2006	42	177	80	0	63	63	63	361	361	361
	2007	44	182	107	0	63	63	63	396	396	396
	2008	49	196	125	0	66	66	66	436	436	436
	2009	54	210	139	0	68	68	68	471	471	471
	2010	58	217	150	0	69	69	69	494	494	494
	2011	61	225	160	0	69	70	70	515	515	515
	2012	65	232	154	0	75	75	75	526	526	526
	2013	68	239	146	0	82	83	83	537	537	538
	2014	72	247	136	0	92	93	94	548	548	549
	2015	76	254	124	0	105	105	106	558	559	560
	2016	80	262	109	0	118	119	121	569	570	571
	2017	83	269	94	0	132	134	135	578	580	581
	2018	87	276	78	0	146	148	150	587	589	591
	2019	91	283	63	0	159	161	163	596	598	600
	2020	95	290	50	0	170	173	175	604	607	609

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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SDG&E/Commercial	1990	147	93	34	33	612	612	612	919	919	919
(Consumption in GWH)	1991	179	110	51	33	606	606	606	979	979	979
	1992	198	124	59	32	635	635	635	1,048	1,048	1,048
Note: Commercial	1993	211	133	70	29	695	695	695	1,139	1,139	1,139
Savings Includes	1994	222	141	92	26	741	741	741	1,222	1,222	1,222
Agricultural	1995	236	152	126	22	712	712	712	1,248	1,248	1,248
	1996	253	163	182	18	687	687	687	1,303	1,303	1,303
	1997	282	181	236	14	438	438	438	1,151	1,151	1,151
	1998	297	191	257	11	530	530	530	1,286	1,286	1,286
	1999	330	209	301	9	508	508	508	1,356	1,356	1,356
	2000	379	234	329	7	480	480	480	1,428	1,428	1,428
	2001	408	246	346	5	799	799	799	1,803	1,803	1,803
	2002	456	270	339	3	722	722	722	1,791	1,791	1,791
	2003	503	296	305	2	652	652	652	1,757	1,757	1,757
	2004	545	320	291	1	572	572	572	1,729	1,729	1,729
	2005	585	343	312	1	545	545	545	1,786	1,786	1,786
	2006	616	359	286	0	505	505	505	1,767	1,767	1,767
	2007	648	374	302	0	614	614	614	1,938	1,938	1,938
	2008	685	395	326	0	612	612	612	2,017	2,017	2,017
	2009	727	414	360	0	614	614	614	2,115	2,115	2,115
	2010	765	434	396	0	616	616	616	2,210	2,210	2,210
	2011	807	454	432	0	620	637	654	2,313	2,330	2,347
	2012	852	475	415	0	625	659	692	2,367	2,402	2,434
	2013	903	497	399	0	633	684	735	2,431	2,483	2,534
	2014	954	519	385	0	641	712	779	2,499	2,569	2,637
	2015	1,004	541	371	0	650	738	823	2,566	2,654	2,740
	2016	1,052	563	358	0	658	781	896	2,631	2,754	2,869
	2017	1,101	584	342	0	668	826	970	2,694	2,853	2,997
	2018	1,149	605	323	0	677	873	1,045	2,753	2,949	3,122
	2019	1,197	625	297	0	687	918	1,123	2,806	3,038	3,243
	2020	1,245	646	265	0	697	967	1,202	2,853	3,123	3,358

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SDG&E/Commercial	1990	32	20	8	7	134	134	134	201	201	201
(Peak in MW)	1991	40	25	12	8	136	136	136	220	220	220
	1992	43	27	13	7	136	136	136	225	225	225
Note: Commercial	1993	42	26	14	6	137	137	137	224	224	224
Savings Includes	1994	47	30	20	5	158	158	158	261	261	261
Agricultural	1995	50	32	27	5	151	151	151	265	265	265
	1996	53	34	38	4	145	145	145	274	274	274
	1997	59	38	50	3	92	92	92	242	242	242
	1998	67	43	58	3	119	119	119	289	289	289
	1999	68	43	62	2	105	105	105	280	280	280
	2000	70	43	61	1	89	89	89	264	264	264
	2001	73	44	62	1	143	143	143	323	323	323
	2002	92	54	68	1	145	145	145	359	359	359
	2003	105	62	63	0	136	136	136	366	366	366
	2004	109	64	58	0	115	115	115	347	347	347
	2005	120	70	64	0	112	112	112	366	366	366
	2006	129	75	60	0	106	106	106	370	370	370
	2007	146	85	68	0	139	139	139	438	438	438
	2008	137	79	65	0	123	123	123	404	404	404
	2009	148	85	73	0	125	125	125	431	431	431
	2010	156	88	81	0	126	126	126	450	450	450
	2011	164	92	88	0	126	130	133	470	474	477
	2012	173	96	84	0	127	134	140	480	487	494
	2013	182	100	81	0	128	138	148	491	502	512
	2014	192	105	77	0	129	143	157	503	518	531
	2015	202	109	75	0	130	148	165	515	533	550
	2016	211	113	72	0	132	157	179	527	552	575
	2017	220	117	68	0	133	165	194	538	570	599
	2018	229	120	64	0	135	174	208	549	588	622
	2019	238	124	59	0	137	182	223	558	604	644
	2020	247	128	53	0	138	192	238	566	619	666

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SMUD/Residential	1990	504	172	208	0	29	29	29	912	912	912
(Consumption in GWH)	1991	527	196	224	0	30	30	30	978	978	978
	1992	545	224	225	0	31	31	31	1,025	1,025	1,025
	1993	560	251	231	0	32	32	32	1,074	1,074	1,074
	1994	575	278	244	0	33	33	33	1,130	1,130	1,130
	1995	590	305	253	0	34	34	34	1,182	1,182	1,182
	1996	604	332	258	0	35	35	35	1,229	1,229	1,229
	1997	613	356	259	0	36	36	36	1,264	1,264	1,264
	1998	624	381	259	0	36	36	36	1,301	1,301	1,301
	1999	642	409	259	0	37	37	37	1,348	1,348	1,348
	2000	658	438	259	0	38	38	38	1,394	1,394	1,394
	2001	682	469	258	0	40	40	40	1,450	1,450	1,450
	2002	708	506	257	0	41	41	41	1,513	1,513	1,513
	2003	725	538	255	0	42	42	42	1,560	1,560	1,560
	2004	688	568	261	0	43	43	43	1,560	1,560	1,560
	2005	707	599	261	0	44	44	44	1,611	1,611	1,611
	2006	725	624	259	0	44	44	44	1,652	1,652	1,652
	2007	737	642	257	0	44	44	44	1,681	1,681	1,681
	2008	749	661	252	0	61	61	61	1,723	1,723	1,723
	2009	762	678	244	0	78	78	78	1,762	1,762	1,762
	2010	774	695	233	0	95	95	95	1,797	1,797	1,797
	2011	788	713	217	0	112	112	113	1,830	1,830	1,830
	2012	802	730	198	0	130	131	131	1,860	1,861	1,861
	2013	816	747	178	0	148	149	150	1,889	1,890	1,891
	2014	832	763	160	0	167	169	170	1,921	1,923	1,924
	2015	847	778	145	0	186	188	190	1,957	1,959	1,960
	2016	862	793	134	0	206	208	211	1,995	1,998	2,001
	2017	877	808	126	0	226	229	233	2,036	2,040	2,043
	2018	892	822	119	0	246	251	255	2,079	2,084	2,088
	2019	908	836	115	0	267	272	278	2,125	2,131	2,136
	2020	924	850	112	0	288	295	301	2,174	2,181	2,187

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SMUD/Residential	1990	156	53	64	0	9	9	9	282	282	282
(Peak in MW)	1991	169	63	72	0	10	10	10	313	313	313
	1992	155	64	64	0	9	9	9	292	292	292
	1993	172	77	71	0	10	10	10	330	330	330
	1994	154	74	65	0	9	9	9	302	302	302
	1995	185	96	79	0	11	11	11	371	371	371
	1996	203	112	87	0	12	12	12	414	414	414
	1997	204	118	86	0	12	12	12	419	419	419
	1998	216	132	90	0	13	13	13	450	450	450
	1999	244	155	98	0	14	14	14	512	512	512
	2000	223	148	88	0	13	13	13	472	472	472
	2001	228	157	86	0	13	13	13	485	485	485
	2002	253	181	92	0	15	15	15	541	541	541
	2003	244	181	86	0	14	14	14	526	526	526
	2004	206	170	78	0	13	13	13	468	468	468
	2005	238	201	88	0	15	15	15	541	541	541
	2006	317	273	113	0	19	19	19	723	723	723
	2007	258	225	90	0	16	16	16	587	587	587
	2008	266	235	89	0	22	22	22	612	612	612
	2009	269	239	86	0	27	27	27	621	621	621
	2010	274	246	82	0	34	34	34	636	636	636
	2011	279	252	77	0	40	40	40	648	648	648
	2012	284	259	70	0	46	46	47	660	660	660
	2013	290	265	63	0	53	53	53	671	672	672
	2014	296	272	57	0	60	60	61	684	685	685
	2015	303	278	52	0	67	67	68	699	700	701
	2016	309	284	48	0	74	75	76	715	716	717
	2017	315	290	45	0	81	82	84	732	733	734
	2018	322	296	43	0	89	90	92	749	751	753
	2019	328	302	42	0	96	98	100	768	770	772
	2020	335	308	41	0	104	107	109	788	791	793

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SMUD/Commercial	1990	70	38	0	6	632	632	632	747	747	747
(Consumption in GWH)	1991	79	43	0	5	649	649	649	776	776	776
	1992	89	48	2	4	635	635	635	779	779	779
Note: Commercial	1993	99	53	5	4	639	639	639	800	800	800
Savings Includes	1994	107	57	16	3	603	603	603	786	786	786
Agricultural	1995	113	63	30	2	599	599	599	808	808	808
	1996	120	68	38	2	597	597	597	824	824	824
	1997	131	73	49	1	588	588	588	842	842	842
	1998	142	83	54	1	591	591	591	871	871	871
	1999	160	91	55	0	595	595	595	902	902	902
	2000	181	100	56	0	587	587	587	924	924	924
	2001	194	105	55	0	718	718	718	1,071	1,071	1,071
	2002	211	111	55	0	780	780	780	1,158	1,158	1,158
	2003	232	120	55	0	773	773	773	1,180	1,180	1,180
	2004	251	130	56	0	752	752	752	1,189	1,189	1,189
	2005	275	141	56	0	780	780	780	1,252	1,252	1,252
	2006	290	147	56	0	780	780	780	1,272	1,272	1,272
	2007	312	157	56	0	764	764	764	1,289	1,289	1,289
	2008	323	162	56	0	800	800	800	1,341	1,341	1,341
	2009	347	171	56	0	832	832	832	1,405	1,405	1,405
	2010	366	178	56	0	849	849	849	1,449	1,449	1,449
	2011	386	186	56	0	864	872	880	1,492	1,500	1,507
	2012	406	194	56	0	879	895	911	1,535	1,550	1,566
	2013	427	202	56	0	895	920	944	1,580	1,605	1,628
	2014	449	210	56	0	913	946	978	1,627	1,660	1,692
	2015	471	218	56	0	931	973	1,013	1,675	1,718	1,757
	2016	493	226	56	0	950	1,008	1,060	1,724	1,782	1,834
	2017	514	234	56	0	968	1,043	1,106	1,771	1,846	1,909
	2018	535	242	54	0	986	1,078	1,151	1,818	1,910	1,983
	2019	557	250	53	0	1,005	1,113	1,196	1,865	1,973	2,056
	2020	578	258	52	0	1,024	1,149	1,240	1,912	2,037	2,128

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
SMUD/Commercial	1990	15	8	0	1	139	139	139	164	164	164
(Peak in MW)	1991	17	9	0	1	138	138	138	165	165	165
	1992	19	10	0	1	138	138	138	169	169	169
Note: Commercial	1993	21	11	1	1	133	133	133	167	167	167
Savings Includes	1994	23	13	4	1	133	133	133	173	173	173
Agricultural	1995	25	14	7	0	131	131	131	177	177	177
	1996	26	14	8	0	127	127	127	175	175	175
	1997	29	16	11	0	130	130	130	186	186	186
	1998	33	19	13	0	138	138	138	203	203	203
	1999	37	21	13	0	136	136	136	207	207	207
	2000	42	23	13	0	137	137	137	215	215	215
	2001	42	23	12	0	157	157	157	234	234	234
	2002	51	27	13	0	187	187	187	278	278	278
	2003	54	28	13	0	180	180	180	275	275	275
	2004	57	30	13	0	171	171	171	270	270	270
	2005	63	32	13	0	180	180	180	288	288	288
	2006	50	26	10	0	136	136	136	221	221	221
	2007	71	36	13	0	174	174	174	294	294	294
	2008	71	35	12	0	175	175	175	293	293	293
	2009	74	37	12	0	178	178	178	301	301	301
	2010	79	38	12	0	182	182	182	311	311	311
	2011	83	40	12	0	185	187	188	320	321	323
	2012	87	42	12	0	188	192	195	328	332	335
	2013	91	43	12	0	191	197	202	338	343	348
	2014	96	45	12	0	195	202	209	348	355	362
	2015	100	47	12	0	199	208	216	358	367	375
	2016	105	48	12	0	203	215	226	368	380	391
	2017	110	50	12	0	206	222	236	378	394	407
	2018	114	52	12	0	210	230	245	387	407	422
	2019	118	53	11	0	214	237	254	397	420	437
	2020	123	55	11	0	218	244	264	407	433	453

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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
LADWP/Residential	1990	257	209	31	0	4	4	4	500	500	500
(Consumption in GWH)	1991	259	236	35	0	4	4	4	534	534	534
	1992	260	279	51	0	4	4	4	595	595	595
	1993	262	322	71	0	5	5	5	660	660	660
	1994	264	365	93	0	5	5	5	726	726	726
	1995	265	401	99	0	5	5	5	769	769	769
	1996	266	451	94	0	5	5	5	817	817	817
	1997	268	505	87	0	5	5	5	865	865	865
	1998	269	559	77	0	6	6	6	911	911	911
	1999	273	618	64	0	6	6	6	961	961	961
	2000	277	679	53	0	6	6	6	1,015	1,015	1,015
	2001	280	734	42	0	6	6	6	1,062	1,062	1,062
	2002	283	804	35	0	6	6	6	1,128	1,128	1,128
	2003	287	842	30	0	6	6	6	1,166	1,166	1,166
	2004	255	888	41	0	6	6	6	1,191	1,191	1,191
	2005	259	931	34	0	6	6	6	1,231	1,231	1,231
	2006	268	972	29	0	6	6	6	1,275	1,275	1,275
	2007	276	1,006	25	0	6	6	6	1,313	1,313	1,313
	2008	282	1,037	25	0	42	42	42	1,386	1,386	1,386
	2009	289	1,066	26	0	78	78	78	1,459	1,459	1,459
	2010	296	1,094	27	0	114	114	114	1,531	1,531	1,531
	2011	303	1,120	28	0	150	151	152	1,601	1,602	1,602
	2012	310	1,144	29	0	187	188	190	1,670	1,671	1,673
	2013	316	1,166	31	0	224	226	228	1,738	1,740	1,742
	2014	323	1,187	32	0	262	264	267	1,804	1,807	1,809
	2015	329	1,207	34	0	299	303	306	1,869	1,873	1,876
	2016	336	1,225	34	0	337	342	347	1,932	1,937	1,942
	2017	343	1,241	33	0	376	382	389	1,993	2,000	2,006
	2018	349	1,255	33	0	415	423	430	2,053	2,061	2,068
	2019	356	1,270	33	0	454	464	472	2,114	2,124	2,132
	2020	363	1,286	33	0	493	505	515	2,175	2,187	2,197

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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Planning Area/Sector (Type)	Year	Building Standards	Appliance Standards	Utility Programs	Public Agency Programs	Naturally Occurring Savings, Low Rate Case	Naturally Occurring Savings, Mid Rate Case	Naturally Occurring Savings, High Rate Case	Total Savings, Low Rate Case	Total Savings, Mid Rate Case	Total Savings, High Rate Case
LADWP/Residential	1990	60	49	7	0	1	1	1	116	116	116
(Peak in MW)	1991	65	59	9	0	1	1	1	134	134	134
	1992	61	65	12	0	1	1	1	139	139	139
	1993	56	68	15	0	1	1	1	140	140	140
	1994	66	91	23	0	1	1	1	181	181	181
	1995	60	90	22	0	1	1	1	173	173	173
	1996	60	102	21	0	1	1	1	184	184	184
	1997	71	134	23	0	1	1	1	230	230	230
	1998	70	146	20	0	1	1	1	237	237	237
	1999	68	154	16	0	1	1	1	240	240	240
	2000	63	155	12	0	1	1	1	231	231	231
	2001	59	154	9	0	1	1	1	223	223	223
	2002	64	180	8	0	1	1	1	253	253	253
	2003	65	191	7	0	1	1	1	264	264	264
	2004	55	191	9	0	1	1	1	256	256	256
	2005	58	208	8	0	1	1	1	275	275	275
	2006	61	223	7	0	1	1	1	292	292	292
	2007	69	253	6	0	2	2	2	330	330	330
	2008	69	253	6	0	10	10	10	338	338	338
	2009	67	246	6	0	18	18	18	336	336	336
	2010	68	253	6	0	26	26	26	353	353	353
	2011	70	258	6	0	35	35	35	369	369	370
	2012	71	264	7	0	43	43	44	385	385	386
	2013	73	269	7	0	52	52	53	401	401	402
	2014	75	274	7	0	60	61	62	417	417	418
	2015	76	279	8	0	69	70	71	433	433	434
	2016	78	284	8	0	78	79	81	448	449	450
	2017	80	288	8	0	87	89	90	463	465	466
	2018	81	292	8	0	96	98	100	478	480	481
	2019	83	296	8	0	106	108	110	493	495	497
	2020	84	296	8	0	114	116	119	501	504	506

Table A-7: Electricity Efficiency/Conservation Savings by Planning Area and Sector
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LADWP/Commercial	1990	134	91	1	36	888	888	888	1,149	1,149	1,149
(Consumption in GWH)	1991	164	106	1	34	861	861	861	1,165	1,165	1,165
	1992	189	121	1	32	911	911	911	1,255	1,255	1,255
Note: Commercial	1993	203	133	1	30	986	986	986	1,352	1,352	1,352
Savings Includes	1994	215	143	1	27	1,048	1,048	1,048	1,433	1,433	1,433
Agricultural	1995	224	151	1	24	1,001	1,001	1,001	1,400	1,400	1,400
	1996	235	159	0	20	941	941	941	1,356	1,356	1,356
	1997	243	165	0	17	1,038	1,038	1,038	1,464	1,464	1,464
	1998	253	174	0	14	1,036	1,036	1,036	1,477	1,477	1,477
	1999	268	183	0	11	982	982	982	1,445	1,445	1,445
	2000	292	196	0	8	948	948	948	1,445	1,445	1,445
	2001	316	210	0	5	887	887	887	1,418	1,418	1,418
	2002	342	223	0	3	816	816	816	1,384	1,384	1,384
	2003	372	239	0	2	766	766	766	1,379	1,379	1,379
	2004	396	253	0	1	660	660	660	1,310	1,310	1,310
	2005	417	267	0	1	555	555	555	1,240	1,240	1,240
	2006	443	282	0	0	451	451	451	1,177	1,177	1,177
	2007	463	292	0	0	443	443	443	1,198	1,198	1,198
	2008	484	302	0	0	481	481	481	1,267	1,267	1,267
	2009	501	309	0	0	749	749	749	1,559	1,559	1,559
	2010	525	321	0	0	862	862	862	1,708	1,708	1,708
	2011	555	334	0	0	865	883	900	1,755	1,773	1,789
	2012	586	348	0	0	868	904	939	1,801	1,837	1,872
	2013	621	363	0	0	872	927	979	1,856	1,910	1,963
	2014	658	378	0	0	880	952	1,022	1,915	1,988	2,058
	2015	693	393	0	0	888	979	1,067	1,975	2,066	2,154
	2016	728	408	0	0	897	1,022	1,139	2,033	2,158	2,276
	2017	763	422	0	0	906	1,066	1,211	2,091	2,251	2,396
	2018	796	437	0	0	915	1,110	1,285	2,148	2,343	2,518
	2019	830	451	0	0	924	1,154	1,358	2,206	2,435	2,639
	2020	864	465	0	0	934	1,199	1,432	2,264	2,529	2,762

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LADWP/Commercial	1990	33	22	0	9	220	220	220	285	285	285
(Peak in MW)	1991	39	25	0	8	206	206	206	279	279	279
	1992	44	29	0	8	214	214	214	295	295	295
Note: Commercial	1993	44	29	0	6	212	212	212	291	291	291
Savings Includes	1994	50	33	0	6	244	244	244	334	334	334
Agricultural	1995	51	34	0	5	228	228	228	319	319	319
	1996	55	37	0	5	222	222	222	319	319	319
	1997	59	40	0	4	252	252	252	355	355	355
	1998	65	44	0	4	264	264	264	376	376	376
	1999	65	44	0	3	239	239	239	351	351	351
	2000	69	47	0	2	225	225	225	343	343	343
	2001	71	47	0	1	200	200	200	319	319	319
	2002	79	51	0	1	189	189	189	320	320	320
	2003	85	55	0	0	176	176	176	316	316	316
	2004	91	58	0	0	152	152	152	302	302	302
	2005	102	65	0	0	136	136	136	303	303	303
	2006	113	72	0	0	115	115	115	301	301	301
	2007	111	70	0	0	106	106	106	288	288	288
	2008	125	78	0	0	124	124	124	327	327	327
	2009	121	75	0	0	181	181	181	377	377	377
	2010	127	78	0	0	208	208	208	413	413	413
	2011	134	81	0	0	209	213	218	424	428	433
	2012	142	84	0	0	210	218	227	435	444	452
	2013	150	87	0	0	210	224	236	448	461	473
	2014	158	91	0	0	212	230	246	462	479	496
	2015	167	95	0	0	214	236	257	475	497	519
	2016	175	98	0	0	216	246	274	489	519	547
	2017	183	102	0	0	218	256	291	503	541	576
	2018	191	105	0	0	220	267	309	516	563	605
	2019	199	108	0	0	222	277	326	529	584	633
	2020	207	112	0	0	224	288	343	543	606	662