California Energy Commission

DRAFT STAFF REPORT

UPDATED CALIFORNIA ENERGY DEMAND FORECAST 2011-2022

MAY 2011

CEC-200-2011-006-SD

CALIFORNIA ENERGY COMMISSION

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ACKNOWLEDGEMENTS

Kate Sullivan, Nicholas Fugate, and Bryan Alcorn provided the economic/demographic inputs for this forecast. Gary Occhiuzzo and Ravinderpal Vaid provided the commercial floor space inputs. Steven Mac and Irene Salazar provided the historic consumption data. Mark Ciminelli provided a new forecast for the transportation, communications and utility, and street-lighting sectors. Ross Miller and Ruben Tavares assisted with the energy price projections.

ABSTRACT

This staff report presents an update to the *2009 California Energy Demand* electricity forecast adopted for the *2009 Integrated Energy Policy Report* (2009 *IEPR*) in December 2009. A full preliminary *2011 IEPR* forecast was scheduled to be released during spring 2011, with a revised forecast submitted for adoption by the California Energy Commission later this year. However, the Energy Commission's IEPR and Electricity and Natural Gas Committees have decided to extend the forecast cycle time frame so that a final adopted forecast is released in spring 2012. This means that the full preliminary forecast will be released in August 2011. This update, developed with staff's econometric models only, is provided to serve as input for work within the Energy Commission, including natural gas and Renewables Portfolio Standard analyses. The updated forecast consists of three economic scenarios: low, mid, and high. At a statewide level, electricity consumption and peak demand are projected to grow at a faster rate from 2010 to 2020 in the mid case compared to the *2009 IEPR* forecast, but do not reach *2009 IEPR* levels by 2020 due to a significantly lower starting point in 2010.

Keywords: Demand, consumption, planning area, econometric, weather-normalized, peak demand

Please use the following citation for this report:

Kavalec, Chris. 2011. ***Draft Staff Report - Updated California Energy Demand Forecast 2011-2022***. California Energy Commission, Electricity Analysis Division. Publication Number: CEC-200-2011-006-SD.

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Introduction

This staff report presents an update to the *2009 California Energy Demand* (*CED 2009*) electricity forecast adopted for the *2009 Integrated Energy Policy Report* (2009 *IEPR*) in December 2009. A full preliminary *2011 IEPR* forecast was scheduled to be released during spring 2011, with a revised forecast submitted for adoption by the Energy Commission later this year. However, the California Energy Commission's *IEPR* and Electricity and Natural Gas Committees have decided to extend the forecast cycle time frame so that a final adopted forecast is released in spring 2012. The schedule change is designed to provide a more timely product for the California Public Utilities Commission's Long-Term Procurement Process and the Energy Commission's electricity infrastructure assessment. This means that the full preliminary forecast, which involves application of both end-use and econometric models, will not be released until August 2011. This update, developed with staff's econometric models only serves as input for work within the Energy Commission, including natural gas and Renewables Portfolio Standard analyses.

The updated forecast is meant to provide staff's best estimate of the effect of worsened economic conditions on energy demand since the *CED 2009* forecast was developed. The update does not revise the efficiency and self-generation assumptions used in *CED 2009*, although more recent energy price forecasts are incorporated. Three scenarios are provided for this update, a *low demand* case, a *mid demand* case, and a *high demand* case. The low demand case assumes relatively low economic/demographic growth and relatively high energy prices, while the high demand case assumes the opposite for each. The mid case includes growth assumptions in between the other scenarios.

This chapter summarizes the results from this forecast and describes the methods used. **Chapter 2** provides additional discussion of results. **Appendix A** gives forecast electricity consumption by sector and forecast electricity sales and peak demand by planning area for the three scenarios. Planning areas include Burbank/Glendale, Imperial Irrigation District (IID), Los Angeles Department of Water and Power (LADWP), Pacific Gas and Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Sacramento Municipal Utility District (SMUD).[1] **Appendix B** provides the key inputs to the forecast. **Appendix C** presents the estimation results for the econometric models used for the updated forecast.

Summary of Results

Table 1 compares the *CED 2009* adopted forecast with the updated forecast scenarios for selected years. The updated forecast begins roughly 2.5 percent below *CED 2009* in 2010, reflecting a significant drop in actual electricity consumption in 2009 and 2010 as the recent recession worsened relative to the outlook in 2009.

1 For a description of the planning areas, see page 36 the *CED 2009* (*2009 IEPR*) adopted forecast report: http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-CMF.PDF.

Table 1: Comparison of *CED 2009* and Updated Statewide Electricity Forecast Scenarios

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	228,473	227,586	227,586	227,586
2000	264,230	260,408	260,408	260,408
2010	280,843	273,910	273,910	273,910
2015	299,471	282,276	293,122	295,349
2020	316,280	305,670	311,004	318,270
2022	--	313,324	318,892	328,537
	Average Annual Growth Rates			
1990-2000	1.46%	1.36%	1.36%	1.36%
2000-2010	0.61%	0.51%	0.51%	0.51%
2010-2015	1.29%	0.60%	1.37%	1.52%
2010-2020	1.20%	1.10%	1.28%	1.51%
2010-2022	--	1.13%	1.28%	1.53%
Non-Coincident Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	47,521	47,520	47,520	47,520
2000	53,703	53,703	53,703	53,703
2010*	62,459	60,307	60,307	60,307
2015	66,868	60,449	65,473	66,094
2020	71,152	67,367	69,993	72,545
2022	--	69,624	72,177	75,611
	Average Annual Growth Rates			
1990-2000	1.23%	1.23%	1.23%	1.23%
2000-2010	1.52%	1.17%	1.17%	1.17%
2010-2015	1.37%	0.05%	1.66%	1.85%
2010-2020	1.31%	1.11%	1.50%	1.86%
2010-2022	--	1.20%	1.51%	1.90%
Historical values are shaded				
*Updated forecasts use 2010 weather-normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

However, consumption in the mid and high scenarios grows at a faster rate over the forecast period compared to *CED 2009*. By 2020, consumption is only 1.7 percent lower in the mid demand case and 0.6 percent higher in the high case. This pattern is repeated for state (non-coincident) peak demand. The updated 2010 weather-normalized[2] peak demand is 2.0 percent

2 Peak demand is weather-normalized in 2010 to provide the proper benchmark for comparison to future peak demand, which assumes average, or normalized, weather.

lower than predicted in *CED 2009*, but only 1.6 percent lower by 2020 in the mid scenario. Peak demand in the high case is 2.0 percent higher than *CED 2009* by 2020.

Method

For this updated forecast, staff estimated econometric models for peak demand and for the residential, commercial, industrial, and construction and mining sectors. The econometric models for peak and the residential and commercial sectors are updated versions of those used in *CED 2009*, while the industrial and construction and mining models are new. These models provide forecasts at the planning area level. **Table 2** shows the variables used in each model, and **Appendix C** gives the estimation results.

Table 2: Variables Used for Econometric Models by Sector

Sector	Predicted (dependent) Variable	Explanatory Variables
Residential	Annual Electricity Consumption Per Household by Planning Area	Per-Capita Income; Unemployment Rate; Average Persons per Household; Cooling Degree Days; Heating Degree Days; Average Residential Electricity Rate; Time Trend
Commercial	Annual Total Commercial Electricity Consumption by Planning Area	Total Commercial Floor Space; Total Employment; Percent of Floor Space Refrigerated; Commercial Employment/Commercial Floor Space; Gross Output; Cooling Degree Days; Average Commercial Electricity Rate; Average Commercial Natural Gas Rate; Time Trend
Industrial	Annual Total Industrial Electricity Consumption by Planning Area	Manufacturing Output; Manufacturing Output/Manufacturing Employment; Output in Textiles, Fiber, Printing, and Metal and Machine Manufacturing/Manufacturing Output; Average Industrial Electricity Rate; TimeTrend
Mining and Construction	Annual Total Mining and Construction Electricity Consumption by Planning Area	Employment in Mining and Construction; Mining Output; Average Industrial Electricity Rate; TimeTrend
Peak	Annual Net Peak Electricity Demand Per Capita by Planning Area	Per-Capita Income; Unemployment Rate; Number of Households/Population; Annual *Max631* Temperature, Average Residential Electricity Rate; Time Trend

Source: California Energy Commission, 2011

The explanatory variables are logical, although a few require explanation. In the commercial sector, *commercial employment/commercial floor space* is meant to measure the intensity of floor space usage. Also in the commercial sector, the natural gas rate is used to allow for substitution of electricity by natural gas.[3] In the industrial sector, *manufacturing output/manufacturing*

3 This variable was introduced for the other sectors as well, but not found to be significant statistically.

employment is used to measure the impact of increased manufacturing labor productivity. *Output in textiles, fiber, printing, and metal and machine manufacturing/manufacturing output* is designed to capture the energy intensity of manufacturing in each planning area.[4] For the peak model, the variable *max631* is a weighted average of the current and previous two days' maximum temperature (60, 30, and 10 percent weights, respectively) and is held constant at a 30-year average (1981-2010) for the forecast period. Time trends are introduced to allow estimation of the other variables in the presence of exogenous, or outside, trends[5] within each planning area.

Econometric forecast results for each of these four sectors were benchmarked to *CED 2009* to incorporate efficiency and self-generation impacts embedded in the 2009 forecast. This means that the econometric models were run using the economic/demographic and price projections used in *CED 2009* in addition to runs with new projections for each of the updated scenarios. The percentage differences between econometric results corresponding to *CED 2009* inputs and the three scenarios were applied to the actual *CED 2009* forecast to yield the results presented in this report.[6] The exception is in 2009 and 2010, where the updated forecast results match estimates of actual consumption by planning area.[7]

In addition to the econometric consumption forecasts for the four sectors shown in **Table 2**, this update includes a new forecast (one scenario only) for Transportation, Communication, and Utilities (TCU) and street lighting. For the agricultural and water pumping sectors, consumption data was updated through 2009, with *CED 2009* growth rates applied thereafter for this forecast. The same electric vehicle forecast used in *CED 2009* is added into the residential and commercial sector forecast results.

Economic projections were provided by Moody's Economy.com and IHS Global Insight (February 2011). The Moody's base case economic forecast was used for the mid energy scenario. For the low and high scenarios, staff selected the Moody's *protracted slump* case and the Global Insight *optimistic* economic scenario. These two cases, in general, project the lowest and highest rates of economic growth, respectively, of the various scenarios provided by the two companies.[8]

Figure 1 and **Figure 2** compare projections for two key indicators, total state employment and state personal income respectively, used in the three updated scenarios with those used in *CED 2009*. Employment projections for the mid and low scenarios remain below corresponding *CED 2009* projections, with high case projections slightly above *CED 2009* by 2020. The updated

4 These subsectors within manufacturing tend to be among the most energy intensive.

5 Examples include efficiency changes, office electrification (computers, printers) during the 1980s and 1990s, and increases in average house size.

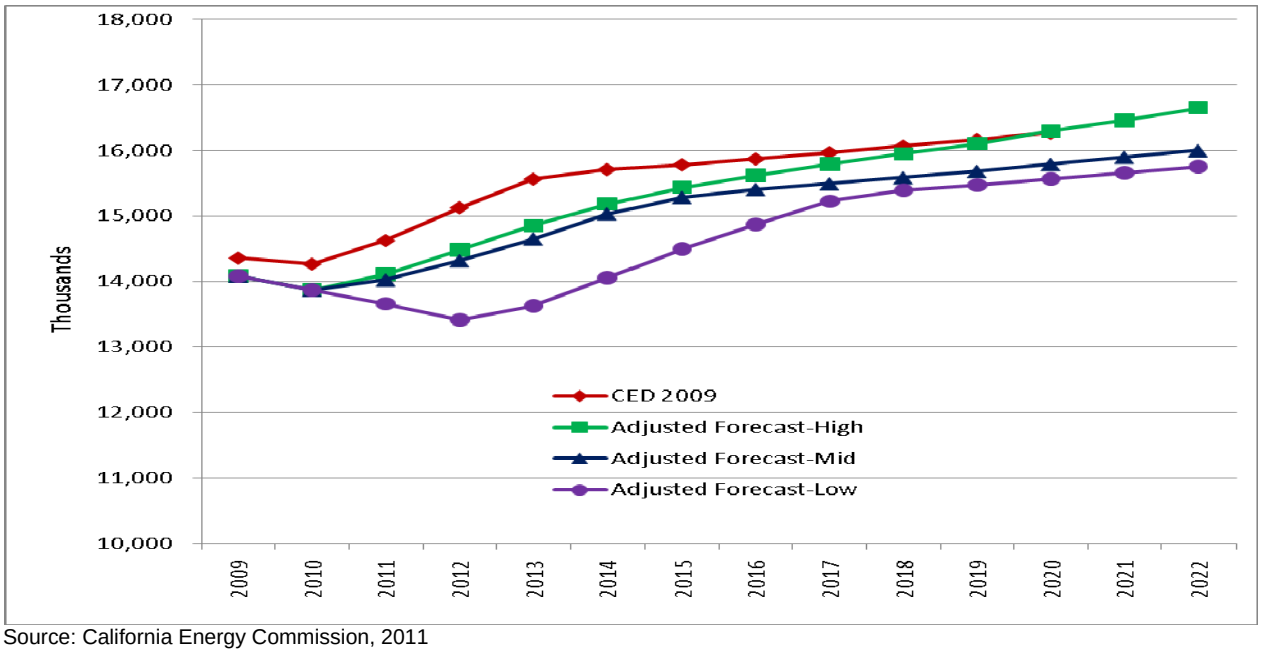
6 For example, if electricity consumption were 3 percent lower for a planning area in a given forecast year in the mid energy demand forecast scenario compared to results using *CED 2009* input assumptions in the econometric models, the final mid results would be 3 percent lower than the actual *CED 2009* forecast.

7 For this forecast, Quarterly Fuel and Energy Report (QFER) consumption data were updated through 2009. For 2010, consumption for the four sectors was estimated using additional data provided by the utilities.

8 Moody's provides five scenarios and Global Insight three.

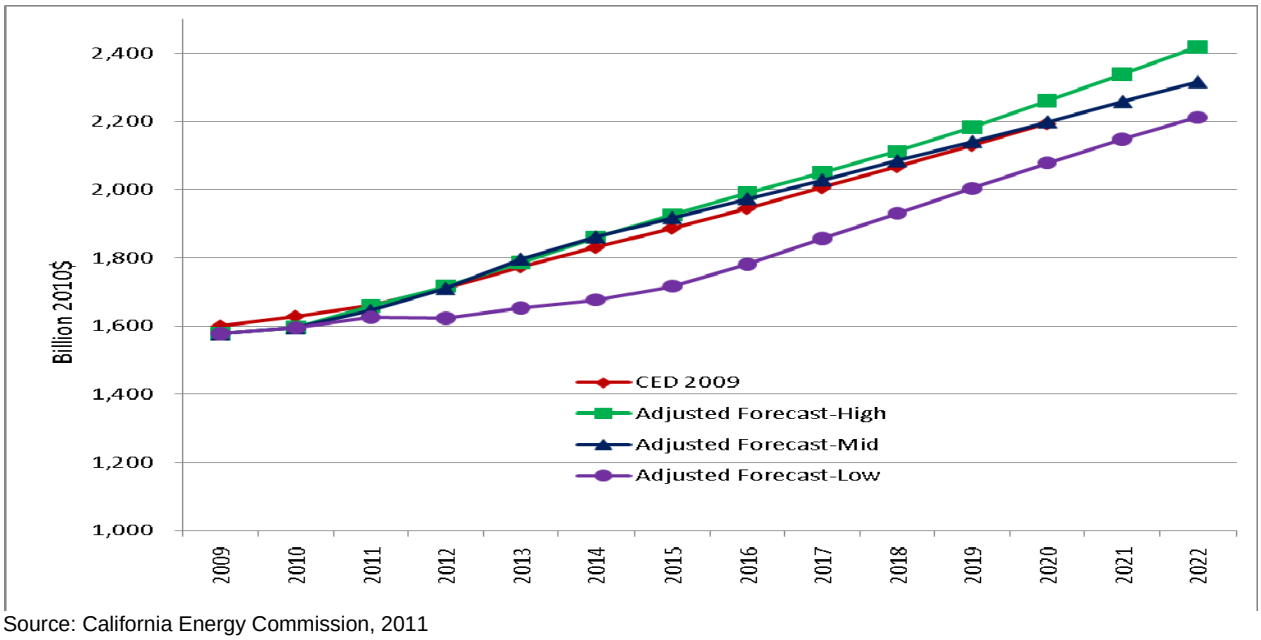
outlook for personal income is more optimistic compared to *CED 2009*, with the mid and high scenarios assuming higher income levels by 2020. Higher growth in income (and total output) after 2010 in the mid and high cases compared to *CED 2009* contributes to higher growth in electricity consumption and peak demand over the forecast period.

Figure 1: Statewide Employment Projections



Source: California Energy Commission, 2011

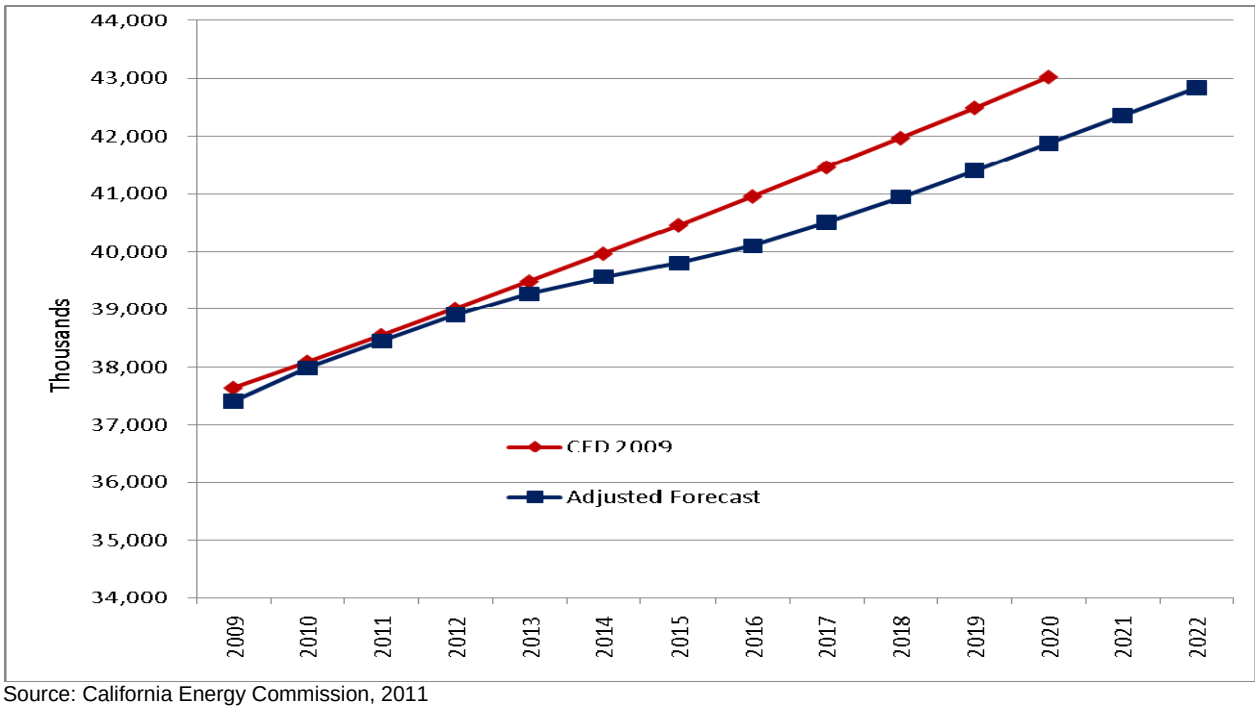
Figure 2: Statewide Personal Income Projections (2010$)



Source: California Energy Commission, 2011

Energy Commission demand forecasts typically use California Department of Finance (DOF) population projections. However, the DOF has not yet updated its population forecast to incorporate the 2010 census.[9] Therefore, staff used the Moody's population forecast, which has been updated. As shown in **Figure 3**, this leads to a lower statewide population forecast (both DOF and Moody's provide only one population scenario).

Figure 3: State Population Forecasts

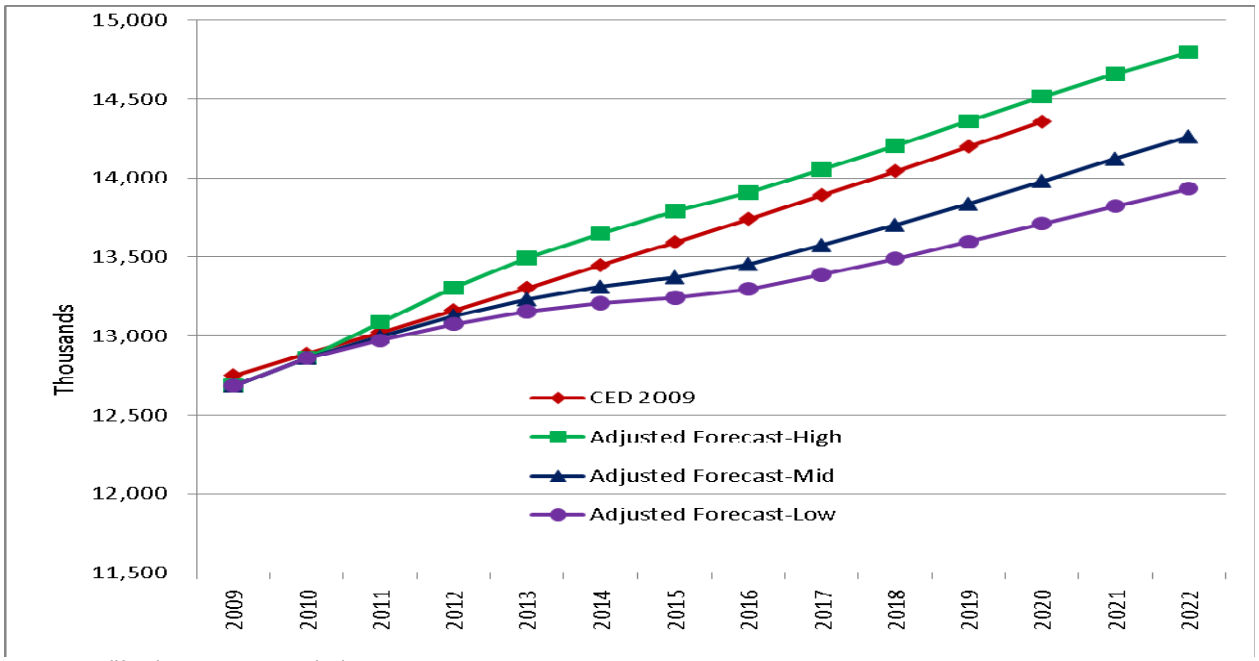


Source: California Energy Commission, 2011

9 DOF recently revised its 2010 and 2011 population numbers to incorporate the census, but has not yet produced a new long-term forecast.

Scenario projections for number of households were developed by varying expected average person per household. For the low demand case, staff fit an exponential growth curve to historical persons per household for 2000-2010. The high case used Moody's projections.[10] The mid case assumed changes in persons per household halfway between the high and low. **Figure 4** compares resulting updated projections for number of households with those from *CED 2009*. The decrease in persons per household for the high demand scenario is enough to result in a higher number of households compared to *CED 2009* throughout the forecast period, even with a lower population.

Figure 4: Forecasts for Number of Households, Statewide



Source: California Energy Commission, 2011

Natural gas rates (used in the commercial sector econometric model only) were projected using recent Henry Hub price forecasts from the Energy Information Administration (EIA) and Bentek, as well as Henry Hub futures prices. For the mid demand case, staff used the 2011 EIA *reference case* forecast, with the first three years (2011-2014) replaced by average current futures prices for these years. The low demand scenario used the EIA 2010[11] *no shale* natural gas price scenario, which assumes no further development of shale reserves beyond what is already approved (and therefore higher prices). For the high demand scenario, staff used a first quarter 2011 forecast from Bentek[12] for 2011-2015, with the 2016-2022 projections held constant at the 2015 level.

10 Moody's projections for persons per household have typically been higher than historical trends.

11 2011 scenarios were not available in time for this forecast.

12 http://www.bentekenergy.com/ForwardCurveQuarterly.aspx

The electricity price forecasts were generated using the Energy and Environmental Economics (E3) calculator.[13] The E3 calculator allows users to create electricity price scenarios by inputting assumptions for efficiency savings, natural gas rates, amount of renewables, amount of combined heat and power, penetration of photovoltaic systems, level of demand response, and price regime (cap and trade). **Table 3** provides the assumptions used to generate rate growth for each of the three demand scenarios.

Table 3: Electricity Price Assumptions by Scenario

Assumption	Low Demand Scenario (Higher Electricity Prices)	Mid Demand Scenario (Mid Electricity Prices)	High Demand Scenario (Lower Electricity Prices)
Efficiency	High CPUC Goals	Mid CPUC Goals	Current Programs Only
Natural Gas Rates	High (EIA *No Shale*)	Mid (EIA *Reference*)	Low (Bentek)
Photovoltaic	3000 MW by 2020	*2009 IEPR* Forecast Levels	Current Levels
Renewables	33 Percent by 2020	20 Percent by 2020	Current Levels
Demand Response	5 Percent Additional	5 Percent Additional	Current Levels
Combined Heat and Power	Additional 4,300 MW	*2009 IEPR* Forecast Levels	*2009 IEPR* Forecast Levels
Price Regime	Cap and Trade ($30/ton CO_2)	Current	Current

Source: California Energy Commission, 2011

[13] Available at http://www.ethree.com/public_projects/cpuc2.html.

Resulting percentage growth by year for each scenario from the natural gas and electricity price forecasts was applied to current planning area rates, and these scenarios are shown in **Table 4**. In the case of electricity, E3 provided projections for 2012-2020, so staff assumed 2010 rates for 2011 and extrapolated rates for 2021 and 2022 using average growth rates for 2015-2020. Staff used the E3-projected state average for percentage growth for each planning area, except in the case of LADWP, where E3 projects rate growth to be significantly higher than in the other planning areas due to expiration of current power contracts and relatively low load growth. Staff used a higher growth rate for LADWP but capped the growth so that resulting LADWP rates remained at least 10 percent lower those of SCE.[14]

Table 4: Growth in Energy Rates, Updated Forecast

Period	% Change, Low Demand Scenario	% Change, Mid Demand Scenario	% Change, High Demand Scenario
Electricity			
2010-2015	9.6	1.9	-1.8
2010-2020	18.8	8.8	2.3
2010-2022	22.5	13.1	5.8
Natural Gas			
2010-2015	28.0	10.6	-8.6
2010-2020	34.4	19.2	-8.6
2010-2022	38.1	26.3	-8.6

Source: California Energy Commission, 2011

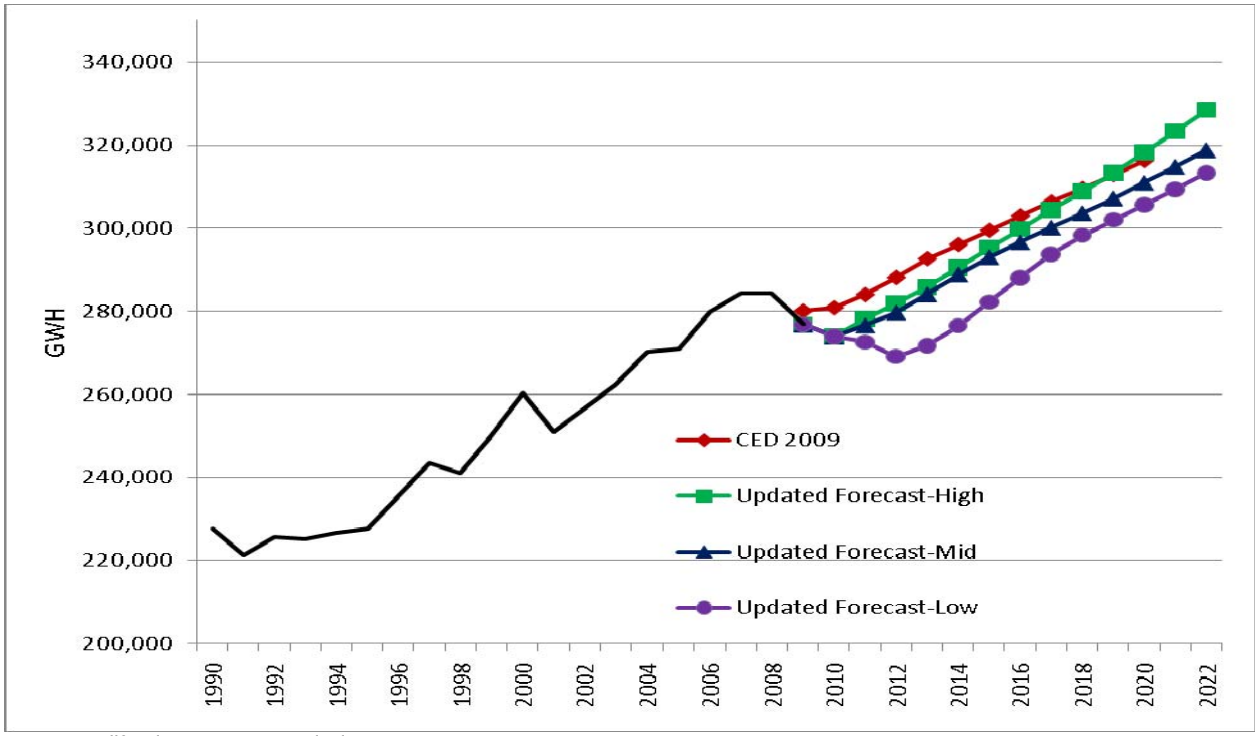
14 This assumption is based on the idea that, politically, a municipal utility could not offer rates as high as those of a neighboring investor-owned utility. LADWP rates by sector are shown in Appendix B, and residential rates are projected to increase by 24 percent, 20 percent, and 18 percent in the three scenarios, respectively, over 2010-2022. This assumption of a growth cap resulted in commercial and industrial rates increasing at the same rate as in the other planning areas.

CHAPTER 2:
Forecast Results

Statewide Results

Figure 5 compares forecast statewide electricity consumption from *CED 2009* with the updated forecast scenarios. Consumption grows at a faster average annual rate from 2010 to 2020 in the mid and high energy demand cases (1.50 and 1.86 percent, respectively) relative to *CED 2009* (1.31 percent). In the low demand scenario, annual growth is higher than in *CED 2009* after 2012. Higher projected growth rates in the updated forecast reflect a deeper recession than assumed in 2009 and therefore faster growth in reverting to expected long-term economic trends. Forecast consumption reaches *CED 2009* projected levels by 2019 in the high demand scenario and surpasses the 2020 *CED 2009* projection in the mid case by 2022.

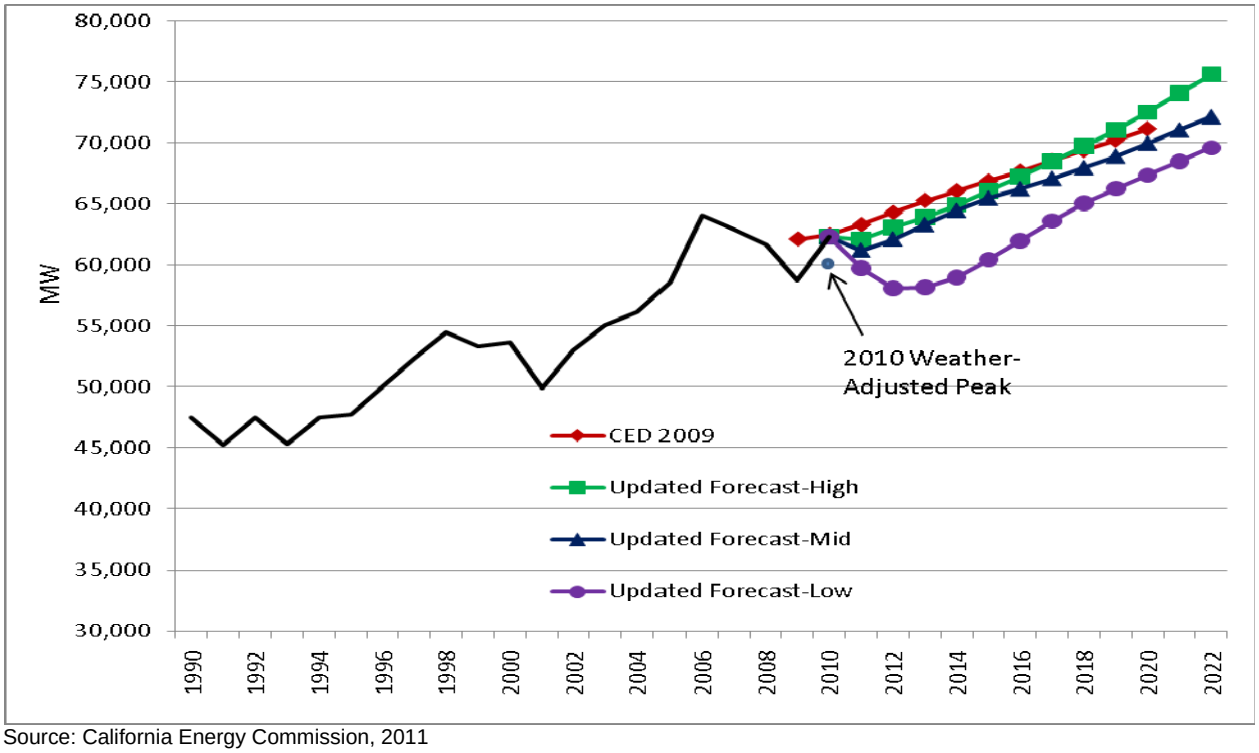
Figure 5: Statewide Annual Electricity Consumption



Source: California Energy Commission, 2011

This pattern is repeated for statewide (non-coincident) peak demand, shown in **Figure 6**. Peak growth rates in the updated forecast are measured relative to the 2010 weather-normalized peak (also shown in the figure). Peak growth is, in fact, faster in the updated forecast relative to *CED 2009* compared to consumption, reflecting the importance of income (output) growth in the peak econometric model. (Income is projected to recover faster than employment in the updated forecast, as shown in **Figure 1** and **Figure 2**.) Statewide peak demand is projected to reach the *CED 2009* level by 2018 in the high demand scenario and to surpass the 2020 *CED 2009* projection in the mid case by 2021.

Figure 6: Statewide Non-Coincident Peak Demand



Source: California Energy Commission, 2011

Planning Area Results

Tables 4-8 compare updated electricity consumption and peak forecasts with *CED 2009* results for each the five major planning areas (LADWP, PG&E, SCE, SDG&E, and SMUD, respectively). As with the statewide results, projected consumption and peak growth from 2010 to 2020 are faster in the mid and high demand scenarios compared to *CED 2009* for all five planning areas. Mid scenario forecast consumption and peak demand typically surpass *CED 2009* 2020 levels by 2021 or 2022. Projected growth is generally highest in the SDG&E and SMUD planning areas and lowest for LADWP.

Both consumption and peak growth for 2010-2022 in the updated forecast are projected to be lowest for LADWP among the five planning areas in all three demand scenarios, reflecting relatively low expected population growth. Projected consumption reaches the 2020 *CED 2009* level by 2022 in the high case only, while surpassing *CED 2009* 2020 peak demand in all three scenarios.

Table 5: Comparison of *CED 2009* and Updated Statewide Electricity Forecasts, LADWP

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	23,263	23,038	23,038	23,038
2000	23,438	24,018	24,018	24,018
2010	25,326	24,102	24,102	24,102
2015	26,841	24,605	25,634	25,781
2020	27,943	26,441	26,940	27,519
2022	--	27,065	27,590	28,382
	Average Annual Growth Rates			
1990-2000	0.08%	0.42%	0.42%	0.42%
2000-2010	0.78%	0.03%	0.03%	0.03%
2010-2015	1.17%	0.41%	1.24%	1.36%
2010-2020	0.99%	0.93%	1.12%	1.33%
2010-2022	--	0.97%	1.13%	1.37%
Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	5,341	5,341	5,341	5,341
2000	5,344	5,344	5,344	5,344
2010*	5,791	5,912	5,912	5,912
2015	6,068	5,696	6,163	6,230
2020	6,265	6,168	6,406	6,656
2022	--	6,349	6,586	6,915
	Average Annual Growth Rates			
1990-2000	0.01%	0.01%	0.01%	0.01%
2000-2010	0.81%	1.01%	1.01%	1.01%
2010-2015	0.94%	-0.74%	0.84%	1.05%
2010-2020	0.79%	0.43%	0.81%	1.19%
2010-2022	--	0.60%	0.90%	1.31%
Historical values are shaded				
*Updated forecasts use 2010 weather-normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

In the mid demand case, average annual consumption growth from 2010-2020 in the PG&E planning area is slightly higher than *CED 2009*, with projected consumption surpassing the *CED 2009* 2020 level in 2021. Peak demand in the mid case is projected to grow at a significantly higher average annual rate between 2010 and 2020 compared to *CED 2009*, although demand does not reach the 2020 *CED 2009* level by 2022 because of a lower 2010 starting point. In the high case, projected consumption surpasses *CED 2009* by 2017, while peak demand rises above the *CED 2009* 2020 level in 2021.

Table 6: Comparison of *CED 2009* and Updated Statewide Electricity Forecasts, PG&E

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	86,803	86,597	86,597	86,597
2000	101,333	100,969	100,969	100,969
2010	108,344	106,890	106,890	106,890
2015	115,828	110,474	114,187	115,186
2020	122,414	119,328	121,119	123,953
2022	--	122,102	124,045	127,668
	Average Annual Growth Rates			
1990-2000	1.56%	1.55%	1.55%	1.55%
2000-2010	0.67%	0.57%	0.57%	0.57%
2010-2015	1.34%	0.66%	1.33%	1.51%
2010-2020	1.23%	1.11%	1.26%	1.49%
2010-2022	--	1.11%	1.25%	1.49%
Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	17,250	17,250	17,250	17,250
2000	20,628	20,628	20,628	20,628
2010*	23,479	22,351	22,351	22,351
2015	25,193	22,338	24,177	24,340
2020	26,877	25,054	26,005	26,742
2022	--	25,913	26,828	27,831
	Average Annual Growth Rates			
1990-2000	1.80%	1.80%	1.80%	1.80%
2000-2010	1.30%	0.81%	0.81%	0.81%
2010-2015	1.42%	-0.01%	1.58%	1.72%
2010-2020	1.36%	1.15%	1.53%	1.81%
2010-2022	--	1.24%	1.53%	1.84%
Historical values are shaded				
*Updated forecasts use 2010 weather-normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

In the SCE mid demand case, consumption is forecast to surpass the *CED 2009* level by 2021, while projected peak demand matches the *CED 2009* level in 2021. In the high case, peak demand grows at an annual rate above 2 percent from 2010-2020, reflecting relatively high projected population and employment growth for this planning area.

Table 7: Comparison of *CED 2009* and Updated Statewide Electricity Forecasts, SCE

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	82,069	81,671	81,671	81,671
2000	99,148	95,601	95,601	95,601
2010	99,875	98,064	98,064	98,064
2015	106,460	100,540	105,236	106,114
2020	112,964	109,600	111,975	115,082
2022	--	112,604	114,990	119,211
	Average Annual Growth Rates			
1990-2000	1.91%	1.59%	1.59%	1.59%
2000-2010	0.07%	0.25%	0.25%	0.25%
2010-2015	1.29%	0.50%	1.42%	1.59%
2010-2020	1.24%	1.12%	1.34%	1.61%
2010-2022	--	1.16%	1.34%	1.64%
Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	17,647	17,647	17,647	17,647
2000	19,506	19,506	19,506	19,506
2010*	22,877	22,095	22,095	22,095
2015	24,572	22,320	24,241	24,563
2020	26,337	24,878	25,913	27,131
2022	--	25,729	26,746	28,371
	Average Annual Growth Rates			
1990-2000	1.01%	1.01%	1.01%	1.01%
2000-2010	1.61%	1.25%	1.25%	1.25%
2010-2015	1.44%	0.20%	1.87%	2.14%
2010-2020	1.42%	1.19%	1.61%	2.07%
2010-2022	--	1.28%	1.60%	2.11%
Historical values are shaded				
*Updated forecasts use 2010 weather- normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

Projected consumption growth over 2010-2022 is highest for SDG&E among the five planning areas in the low and mid demand scenarios, reflecting relatively high employment growth in these scenarios. Because of a significantly lower starting point, however, projected consumption reaches the *CED 2009* level by 2022 only in the high case. Employment growth also leads to relatively high projected peak demand growth all three scenarios, with demand in the mid case matching the *CED 2009* level in 2020.

Table 8: Comparison of *CED 2009* and Updated Statewide Electricity Forecasts, SDG&E

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	14,926	14,863	14,863	14,863
2000	19,294	18,784	18,784	18,784
2010	21,100	19,989	19,989	19,989
2015	22,707	20,852	21,587	21,652
2020	24,119	22,955	23,309	23,601
2022	--	23,681	24,054	24,468
	Average Annual Growth Rates			
1990-2000	2.60%	2.37%	2.37%	2.37%
2000-2010	0.90%	0.62%	0.62%	0.62%
2010-2015	1.48%	0.85%	1.55%	1.61%
2010-2020	1.35%	1.39%	1.55%	1.68%
2010-2022	--	1.42%	1.55%	1.70%
Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	2,978	2,978	2,978	2,978
2000	3,485	3,485	3,485	3,485
2010*	4,516	4,355	4,355	4,355
2015	4,863	4,369	4,724	4,732
2020	5,174	4,949	5,136	5,230
2022	--	5,130	5,309	5,446
	Average Annual Growth Rates			
1990-2000	1.58%	1.58%	1.58%	1.58%
2000-2010	2.63%	2.25%	2.25%	2.25%
2010-2015	1.49%	0.06%	1.64%	1.67%
2010-2020	1.37%	1.29%	1.66%	1.85%
2010-2022	--	1.37%	1.66%	1.88%
Historical values are shaded				
*Updated forecasts use 2010 weather-normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

Peak demand growth from 2010-2022 is expected to be highest for SMUD among the five planning areas in all three scenarios. In addition, projected consumption growth over this period is highest for SMUD in the high demand scenario. These results reflect relatively high forecast population growth. In the mid case, projected consumption surpasses the 2020 *CED 2009* level by 2021, while peak demand is projected to be higher than *CED 2009* 2020 by 2013.

Table 9: Comparison of *CED 2009* and Updated Statewide Electricity Forecasts, SMUD

Consumption (GWH)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	8,358	8,361	8,361	8,361
2000	9,494	9,552	9,552	9,552
2010	10,656	10,393	10,393	10,393
2015	11,504	10,975	11,388	11,482
2020	12,131	11,852	12,049	12,334
2022	--	12,148	12,358	12,730
	Average Annual Growth Rates			
1990-2000	1.28%	1.34%	1.34%	1.34%
2000-2010	1.16%	0.85%	0.85%	0.85%
2010-2015	1.54%	1.10%	1.84%	2.01%
2010-2020	1.30%	1.32%	1.49%	1.73%
2010-2022	--	1.31%	1.45%	1.70%
Peak (MW)				
	CED 2009 (Dec. 2009)	Updated Forecast-Low (May 2011)	Updated Forecast- Mid (May 2011)	Updated Forecast-High (May 2011)
1990	2,167	2,167	2,167	2,167
2000	2,687	2,688	2,688	2,688
2010*	3,050	2,970	2,970	2,970
2015	3,273	3,094	3,356	3,395
2020	3,445	3,453	3,584	3,734
2022	--	3,568	3,693	3,895
	Average Annual Growth Rates			
1990-2000	2.17%	2.18%	2.18%	2.18%
2000-2010	1.28%	1.00%	1.00%	1.00%
2010-2015	1.42%	0.82%	2.48%	2.71%
2010-2020	1.22%	1.52%	1.90%	2.32%
2010-2022	--	1.54%	1.83%	2.29%
Historical values are shaded				
*Updated forecasts use 2010 weather-normalized peak rather than actual to estimate growth rates				

Source: California Energy Commission, 2011

Appendix A provides sales forecasts by planning area for the three scenarios, calculated by subtracting *CED 2009* self-generation projections from updated forecast consumption. Self-generation numbers for 2021 and 2022 were estimated by extrapolating *CED 2009* trend for 2015-2020.

APPENDIX A: Forecasts of Consumption by Sector and Sales and Peak by Planning Area

Table A-1: Statewide Electricity Consumption by Sector (GWH), Updated Low Forecast

Year	Residential	Commercial	Industrial	Construction and Mining	Agricultural	TCU & Street-lighting	Total Consumption
1990	67,014	72,175	46,929	7,257	20,562	13,650	227,586
1991	66,458	71,949	45,589	7,198	16,100	13,893	221,188
1992	68,541	75,396	45,456	6,834	15,288	14,267	225,782
1993	67,704	75,947	44,945	6,530	15,753	14,342	225,222
1994	69,042	75,985	44,857	5,950	16,814	14,106	226,755
1995	69,032	77,682	46,230	6,179	14,147	14,429	227,698
1996	71,331	79,998	46,532	6,361	16,708	14,660	235,590
1997	72,777	83,672	48,154	6,291	17,358	15,327	243,580
1998	74,622	85,466	46,441	6,000	13,359	15,128	241,015
1999	75,677	88,581	47,733	5,715	16,951	15,403	250,060
2000	79,579	93,255	48,184	6,101	17,321	15,966	260,408
2001	75,191	91,354	44,757	5,770	18,896	14,854	250,822
2002	76,870	93,091	44,915	5,679	20,962	15,004	256,521
2003	81,750	97,032	42,569	5,894	20,151	14,918	262,314
2004	83,944	98,834	43,986	6,594	21,840	15,037	270,236
2005	85,747	99,530	44,260	6,684	19,093	15,766	271,081
2006	89,655	102,746	43,985	6,911	20,305	16,180	279,782
2007	89,063	104,381	44,220	6,968	22,867	16,782	284,281
2008	90,888	105,625	43,775	7,028	19,740	17,341	284,398
2009	90,021	102,116	39,644	7,517	19,687	17,833	276,819
2010	87,209	100,608	39,138	7,393	21,716	17,846	273,910
2011	86,638	99,638	39,356	7,332	21,667	17,996	272,627
2012	84,780	97,736	39,658	7,133	21,620	18,199	269,126
2013	85,654	98,718	39,982	7,315	21,654	18,360	271,684
2014	87,368	101,011	40,408	7,518	21,690	18,528	276,522
2015	89,679	103,654	40,933	7,628	21,726	18,656	282,276
2016	92,200	106,175	41,475	7,726	21,749	18,760	288,084
2017	94,859	108,547	41,894	7,855	21,773	18,883	293,812
2018	97,537	110,051	41,998	7,912	21,797	19,016	298,310
2019	99,993	111,200	41,931	7,925	21,822	19,153	302,024
2020	102,412	112,363	41,818	7,930	21,848	19,300	305,670
2021	104,938	113,541	41,706	7,935	21,874	19,439	309,432
2022	107,581	114,731	41,594	7,940	21,901	19,577	313,324
Average Annual Growth (%)							
1990-2000	1.73%	2.60%	0.26%	-1.72%	-1.70%	1.58%	1.36%
2000-2010	0.92%	0.76%	-2.06%	1.94%	2.29%	1.12%	0.51%
2010-2015	0.56%	0.60%	0.90%	0.63%	0.01%	0.89%	0.60%
2010-2022	1.76%	1.10%	0.51%	0.60%	0.07%	0.77%	1.13%
Note: Last historical year is 2009.							

Source: California Energy Commission, 2011

Table A-2: Statewide Electricity Consumption by Sector (GWH), Updated Mid Forecast

Year	Residential	Commercial	Industrial	Construction and Mining	Agricultural	TCU & Street-lighting	Total Consumption
1990	67,014	72,175	46,929	7,257	20,562	13,650	227,586
1991	66,458	71,949	45,589	7,198	16,100	13,893	221,188
1992	68,541	75,396	45,456	6,834	15,288	14,267	225,782
1993	67,704	75,947	44,945	6,530	15,753	14,342	225,222
1994	69,042	75,985	44,857	5,950	16,814	14,106	226,755
1995	69,032	77,682	46,230	6,179	14,147	14,429	227,698
1996	71,331	79,998	46,532	6,361	16,708	14,660	235,590
1997	72,777	83,672	48,154	6,291	17,358	15,327	243,580
1998	74,622	85,466	46,441	6,000	13,359	15,128	241,015
1999	75,677	88,581	47,733	5,715	16,951	15,403	250,060
2000	79,579	93,255	48,184	6,101	17,321	15,966	260,408
2001	75,191	91,354	44,757	5,770	18,896	14,854	250,822
2002	76,870	93,091	44,915	5,679	20,962	15,004	256,521
2003	81,750	97,032	42,569	5,894	20,151	14,918	262,314
2004	83,944	98,834	43,986	6,594	21,840	15,037	270,236
2005	85,747	99,530	44,260	6,684	19,093	15,766	271,081
2006	89,655	102,746	43,985	6,911	20,305	16,180	279,782
2007	89,063	104,381	44,220	6,968	22,867	16,782	284,281
2008	90,888	105,625	43,775	7,028	19,740	17,341	284,398
2009	90,021	102,116	39,644	7,517	19,687	17,833	276,819
2010	87,209	100,608	39,138	7,393	21,716	17,846	273,910
2011	88,115	101,463	39,833	7,535	21,667	17,996	276,609
2012	89,003	102,150	41,083	7,690	21,620	18,199	279,746
2013	91,052	103,574	41,565	7,889	21,654	18,360	284,094
2014	93,150	105,613	41,922	8,013	21,690	18,528	288,915
2015	95,031	107,508	42,181	8,021	21,726	18,656	293,122
2016	96,792	109,013	42,356	8,008	21,749	18,760	296,678
2017	98,730	110,383	42,420	8,002	21,773	18,883	300,192
2018	100,871	111,544	42,441	8,003	21,797	19,016	303,672
2019	103,135	112,717	42,405	8,009	21,822	19,153	307,241
2020	105,574	113,960	42,311	8,011	21,848	19,300	311,004
2021	108,121	115,218	42,217	8,014	21,874	19,439	314,882
2022	110,784	116,490	42,123	8,017	21,901	19,577	318,892
Average Annual Growth (%)							
1990-2000	1.73%	2.60%	0.26%	-1.72%	-1.70%	1.58%	1.36%
2000-2010	0.92%	0.76%	-2.06%	1.94%	2.29%	1.12%	0.51%
2010-2015	1.73%	1.34%	1.51%	1.64%	0.01%	0.89%	1.37%
2010-2022	2.01%	1.23%	0.61%	0.68%	0.07%	0.77%	1.28%
Note: Last historical year is 2009.							

Source: California Energy Commission, 2011

Table A-3: Statewide Electricity Consumption by Sector (GWH), Updated High Forecast

Year	Residential	Commercial	Industrial	Construction and Mining	Agricultural	TCU & Street-lighting	Total Consumption
1990	67,014	72,175	46,929	7,257	20,562	13,650	227,586
1991	66,458	71,949	45,589	7,198	16,100	13,893	221,188
1992	68,541	75,396	45,456	6,834	15,288	14,267	225,782
1993	67,704	75,947	44,945	6,530	15,753	14,342	225,222
1994	69,042	75,985	44,857	5,950	16,814	14,106	226,755
1995	69,032	77,682	46,230	6,179	14,147	14,429	227,698
1996	71,331	79,998	46,532	6,361	16,708	14,660	235,590
1997	72,777	83,672	48,154	6,291	17,358	15,327	243,580
1998	74,622	85,466	46,441	6,000	13,359	15,128	241,015
1999	75,677	88,581	47,733	5,715	16,951	15,403	250,060
2000	79,579	93,255	48,184	6,101	17,321	15,966	260,408
2001	75,191	91,354	44,757	5,770	18,896	14,854	250,822
2002	76,870	93,091	44,915	5,679	20,962	15,004	256,521
2003	81,750	97,032	42,569	5,894	20,151	14,918	262,314
2004	83,944	98,834	43,986	6,594	21,840	15,037	270,236
2005	85,747	99,530	44,260	6,684	19,093	15,766	271,081
2006	89,655	102,746	43,985	6,911	20,305	16,180	279,782
2007	89,063	104,381	44,220	6,968	22,867	16,782	284,281
2008	90,888	105,625	43,775	7,028	19,740	17,341	284,398
2009	90,021	102,116	39,644	7,517	19,687	17,833	276,819
2010	87,209	100,608	39,138	7,393	21,716	17,846	273,910
2011	89,095	101,492	40,438	7,490	21,667	17,996	278,179
2012	90,176	102,048	42,198	7,686	21,620	18,199	281,927
2013	91,944	103,271	42,664	7,961	21,654	18,360	285,854
2014	94,010	105,163	43,025	8,169	21,690	18,528	290,585
2015	96,122	107,038	43,486	8,323	21,726	18,656	295,349
2016	98,317	108,752	43,816	8,412	21,749	18,760	299,805
2017	100,697	110,413	44,141	8,464	21,773	18,883	304,372
2018	103,258	111,823	44,422	8,499	21,797	19,016	308,815
2019	105,935	113,285	44,639	8,529	21,822	19,153	313,364
2020	108,851	114,902	44,805	8,565	21,848	19,300	318,270
2021	111,894	116,542	44,973	8,601	21,874	19,439	323,322
2022	115,074	118,206	45,141	8,638	21,901	19,577	328,537
Average Annual Growth (%)							
1990-2000	1.73%	2.60%	0.26%	-1.72%	-1.70%	1.58%	1.36%
2000-2010	0.92%	0.76%	-2.06%	1.94%	2.29%	1.12%	0.51%
2010-2015	1.97%	1.25%	2.13%	2.40%	0.01%	0.89%	1.52%
2010-2022	2.34%	1.35%	1.20%	1.31%	0.07%	0.77%	1.53%
Note: Last historical year is 2009.							

Source: California Energy Commission, 2011

Table A-4: Electricity Sales by Planning Area (GWH), Updated Low Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total Sales
1990	2,065	1,921	21,941	900	82,467	78,347	14,397	8,361	8,171	218,570
1991	1,914	1,949	21,150	858	82,386	76,856	14,246	8,352	4,400	212,112
1992	2,009	2,101	21,864	936	83,575	78,508	15,184	8,499	4,088	216,764
1993	1,923	2,152	21,204	1,084	83,316	77,554	15,112	8,438	4,372	215,155
1994	1,937	2,292	20,042	1,080	83,057	79,105	15,361	8,421	4,946	216,241
1995	1,967	2,323	20,547	1,133	84,254	79,265	15,509	8,461	3,562	217,021
1996	2,055	2,405	21,023	1,115	86,009	81,898	16,028	8,808	5,146	224,487
1997	2,104	2,443	21,386	1,150	89,538	84,461	16,678	9,009	5,504	232,271
1998	2,165	2,388	21,256	1,152	89,051	84,105	17,247	9,126	3,421	229,912
1999	2,132	2,414	21,277	1,128	92,940	86,349	17,913	9,329	5,490	238,972
2000	2,141	2,695	22,766	1,158	96,087	91,324	18,424	9,549	5,490	249,634
2001	2,152	2,754	22,410	1,142	92,422	87,014	17,462	9,312	6,349	241,018
2002	2,122	2,738	22,242	1,086	92,797	88,201	17,748	9,478	8,181	244,593
2003	2,121	2,833	22,948	1,160	93,947	89,571	18,364	9,926	8,865	249,735
2004	2,231	2,975	23,369	1,175	97,131	92,725	19,252	10,151	9,654	258,664
2005	2,198	3,229	23,295	1,170	96,712	94,698	19,302	10,527	8,283	259,413
2006	2,276	3,155	24,278	1,185	99,947	96,974	20,146	10,745	9,075	267,781
2007	2,327	3,364	24,236	1,241	102,720	97,363	20,275	10,857	9,956	272,339
2008	2,318	3,407	24,730	1,229	104,295	98,805	20,638	10,942	6,009	272,373
2009	2,299	3,316	23,512	1,244	102,076	95,571	19,776	10,715	5,748	264,257
2010	2,194	3,247	22,702	1,182	101,113	93,233	19,147	10,366	7,814	260,998
2011	2,176	3,258	22,528	1,168	100,522	92,476	19,105	10,369	7,814	259,417
2012	2,148	3,247	22,213	1,143	99,109	90,715	18,904	10,325	7,814	255,619
2013	2,166	3,319	22,414	1,144	99,893	91,569	19,077	10,487	7,814	257,885
2014	2,191	3,436	22,748	1,153	101,724	93,239	19,423	10,702	7,814	262,431
2015	2,215	3,579	23,093	1,164	103,927	95,281	19,887	10,932	7,814	267,893
2016	2,241	3,703	23,497	1,177	106,066	97,408	20,355	11,148	7,814	273,410
2017	2,270	3,807	23,931	1,192	108,273	99,579	20,852	11,350	7,814	279,068
2018	2,290	3,906	24,279	1,200	109,931	101,327	21,250	11,519	7,814	283,517
2019	2,305	3,989	24,571	1,207	111,250	102,784	21,600	11,659	7,814	287,180
2020	2,322	4,073	24,863	1,214	112,557	104,194	21,938	11,799	7,814	290,775
2021	2,339	4,160	25,163	1,221	113,902	105,653	22,288	11,944	7,814	294,484
2022	2,356	4,249	25,472	1,229	115,293	107,166	22,650	12,094	7,814	298,324
Average Annual Growth										
1990-2000	0.36%	3.44%	0.37%	2.55%	1.54%	1.54%	2.50%	1.34%	-3.90%	1.34%
2000-2010	0.24%	1.88%	-0.03%	0.20%	0.51%	0.21%	0.39%	0.82%	3.59%	0.45%
2010-2015	0.19%	1.97%	0.34%	-0.30%	0.55%	0.44%	0.76%	1.07%	0.00%	0.52%
2010-2022	0.60%	2.27%	0.96%	0.33%	1.10%	1.17%	1.41%	1.29%	0.00%	1.12%
Note: Last historical year is 2009.										

Source: California Energy Commission, 2011

Table A-5: Electricity Sales by Planning Area (GWH), Updated Mid Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total Sales
1990	2,065	1,921	21,941	900	82,467	78,347	14,397	8,361	8,171	218,570
1991	1,914	1,949	21,150	858	82,386	76,856	14,246	8,352	4,400	212,112
1992	2,009	2,101	21,864	936	83,575	78,508	15,184	8,499	4,088	216,764
1993	1,923	2,152	21,204	1,084	83,316	77,554	15,112	8,438	4,372	215,155
1994	1,937	2,292	20,042	1,080	83,057	79,105	15,361	8,421	4,946	216,241
1995	1,967	2,323	20,547	1,133	84,254	79,265	15,509	8,461	3,562	217,021
1996	2,055	2,405	21,023	1,115	86,009	81,898	16,028	8,808	5,146	224,487
1997	2,104	2,443	21,386	1,150	89,538	84,461	16,678	9,009	5,504	232,271
1998	2,165	2,388	21,256	1,152	89,051	84,105	17,247	9,126	3,421	229,912
1999	2,132	2,414	21,277	1,128	92,940	86,349	17,913	9,329	5,490	238,972
2000	2,141	2,695	22,766	1,158	96,087	91,324	18,424	9,549	5,490	249,634
2001	2,152	2,754	22,410	1,142	92,422	87,014	17,462	9,312	6,349	241,018
2002	2,122	2,738	22,242	1,086	92,797	88,201	17,748	9,478	8,181	244,593
2003	2,121	2,833	22,948	1,160	93,947	89,571	18,364	9,926	8,865	249,735
2004	2,231	2,975	23,369	1,175	97,131	92,725	19,252	10,151	9,654	258,664
2005	2,198	3,229	23,295	1,170	96,712	94,698	19,302	10,527	8,283	259,413
2006	2,276	3,155	24,278	1,185	99,947	96,974	20,146	10,745	9,075	267,781
2007	2,327	3,364	24,236	1,241	102,720	97,363	20,275	10,857	9,956	272,339
2008	2,318	3,407	24,730	1,229	104,295	98,805	20,638	10,942	6,009	272,373
2009	2,299	3,316	23,512	1,244	102,076	95,571	19,776	10,715	5,748	264,257
2010	2,194	3,247	22,702	1,182	101,113	93,233	19,147	10,366	7,814	260,998
2011	2,210	3,314	22,913	1,188	102,017	94,038	19,373	10,532	7,814	263,398
2012	2,234	3,399	23,203	1,191	103,043	94,981	19,628	10,747	7,814	266,239
2013	2,260	3,494	23,553	1,196	104,412	96,653	19,939	10,974	7,814	270,295
2014	2,283	3,603	23,895	1,203	106,109	98,445	20,287	11,185	7,814	274,824
2015	2,295	3,715	24,123	1,207	107,640	99,978	20,622	11,345	7,814	278,739
2016	2,303	3,807	24,310	1,210	108,930	101,231	20,929	11,469	7,814	282,004
2017	2,314	3,881	24,530	1,215	110,335	102,496	21,276	11,586	7,814	285,448
2018	2,327	3,964	24,780	1,220	111,654	103,802	21,603	11,714	7,814	288,879
2019	2,342	4,045	25,057	1,226	112,968	105,151	21,945	11,850	7,814	292,397
2020	2,360	4,132	25,362	1,234	114,348	106,569	22,292	11,997	7,814	296,109
2021	2,379	4,222	25,674	1,243	115,768	108,035	22,651	12,148	7,814	299,935
2022	2,399	4,314	25,997	1,251	117,236	109,553	23,023	12,304	7,814	303,892
Average Annual Growth										
1990-2000	0.36%	3.44%	0.37%	2.55%	1.54%	1.54%	2.50%	1.34%	-3.90%	1.34%
2000-2010	0.24%	1.88%	-0.03%	0.20%	0.51%	0.21%	0.39%	0.82%	3.59%	0.45%
2010-2015	0.90%	2.73%	1.22%	0.42%	1.26%	1.41%	1.50%	1.82%	0.00%	1.32%
2010-2022	0.75%	2.40%	1.14%	0.48%	1.24%	1.35%	1.55%	1.44%	0.00%	1.28%
Note: Last historical year is 2009.										

Source: California Energy Commission, 2011

Table A-6: Electricity Sales by Planning Area (GWH), Updated High Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total Sales
1990	2,065	1,921	21,941	900	82,467	78,347	14,397	8,361	8,171	218,570
1991	1,914	1,949	21,150	858	82,386	76,856	14,246	8,352	4,400	212,112
1992	2,009	2,101	21,864	936	83,575	78,508	15,184	8,499	4,088	216,764
1993	1,923	2,152	21,204	1,084	83,316	77,554	15,112	8,438	4,372	215,155
1994	1,937	2,292	20,042	1,080	83,057	79,105	15,361	8,421	4,946	216,241
1995	1,967	2,323	20,547	1,133	84,254	79,265	15,509	8,461	3,562	217,021
1996	2,055	2,405	21,023	1,115	86,009	81,898	16,028	8,808	5,146	224,487
1997	2,104	2,443	21,386	1,150	89,538	84,461	16,678	9,009	5,504	232,271
1998	2,165	2,388	21,256	1,152	89,051	84,105	17,247	9,126	3,421	229,912
1999	2,132	2,414	21,277	1,128	92,940	86,349	17,913	9,329	5,490	238,972
2000	2,141	2,695	22,766	1,158	96,087	91,324	18,424	9,549	5,490	249,634
2001	2,152	2,754	22,410	1,142	92,422	87,014	17,462	9,312	6,349	241,018
2002	2,122	2,738	22,242	1,086	92,797	88,201	17,748	9,478	8,181	244,593
2003	2,121	2,833	22,948	1,160	93,947	89,571	18,364	9,926	8,865	249,735
2004	2,231	2,975	23,369	1,175	97,131	92,725	19,252	10,151	9,654	258,664
2005	2,198	3,229	23,295	1,170	96,712	94,698	19,302	10,527	8,283	259,413
2006	2,276	3,155	24,278	1,185	99,947	96,974	20,146	10,745	9,075	267,781
2007	2,327	3,364	24,236	1,241	102,720	97,363	20,275	10,857	9,956	272,339
2008	2,318	3,407	24,730	1,229	104,295	98,805	20,638	10,942	6,009	272,373
2009	2,299	3,316	23,512	1,244	102,076	95,571	19,776	10,715	5,748	264,257
2010	2,194	3,247	22,702	1,182	101,113	93,233	19,147	10,366	7,814	260,998
2011	2,219	3,337	23,067	1,192	102,588	94,700	19,447	10,604	7,814	264,968
2012	2,246	3,428	23,390	1,196	103,893	95,882	19,731	10,839	7,814	268,420
2013	2,271	3,519	23,681	1,200	105,181	97,317	20,018	11,055	7,814	272,055
2014	2,293	3,624	24,007	1,207	106,869	99,080	20,341	11,260	7,814	276,495
2015	2,307	3,743	24,269	1,212	108,640	100,855	20,687	11,439	7,814	280,967
2016	2,321	3,849	24,533	1,218	110,274	102,495	21,027	11,599	7,814	285,131
2017	2,340	3,940	24,841	1,227	112,092	104,197	21,419	11,758	7,814	289,628
2018	2,358	4,038	25,171	1,234	113,767	105,926	21,791	11,922	7,814	294,022
2019	2,379	4,131	25,534	1,244	115,418	107,727	22,180	12,092	7,814	298,520
2020	2,405	4,234	25,941	1,256	117,182	109,676	22,585	12,281	7,814	303,375
2021	2,432	4,340	26,359	1,268	118,993	111,690	23,004	12,476	7,814	308,375
2022	2,459	4,448	26,789	1,281	120,860	113,773	23,437	12,675	7,814	313,537
Average Annual Growth										
1990-2000	0.36%	3.44%	0.37%	2.55%	1.54%	1.54%	2.50%	1.34%	-3.90%	1.34%
2000-2010	0.24%	1.88%	-0.03%	0.20%	0.51%	0.21%	0.39%	0.82%	3.59%	0.45%
2010-2015	1.01%	2.88%	1.34%	0.50%	1.45%	1.58%	1.56%	1.99%	0.00%	1.49%
2010-2022	0.96%	2.66%	1.39%	0.67%	1.50%	1.67%	1.70%	1.69%	0.00%	1.54%
Note: Last historical year is 2009.										

Source: California Energy Commission, 2011

Table A-7: Peak Demand by Planning Area (MW), Updated Low Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total (non-coincident)
1990	540	551	5,341	274	17,250	17,647	2,978	2,167	772	47,520
1991	502	553	5,152	255	16,497	16,709	3,006	2,166	416	45,256
1992	536	585	5,344	272	16,533	18,413	3,285	2,103	386	47,457
1993	469	567	4,706	250	17,489	16,475	2,853	2,145	413	45,367
1994	524	620	5,032	274	17,173	18,044	3,301	2,044	468	47,480
1995	517	620	4,958	264	18,016	17,548	3,260	2,222	337	47,742
1996	520	671	5,121	270	19,077	18,207	3,305	2,372	487	50,030
1997	567	632	5,603	284	19,459	19,118	3,681	2,441	520	52,305
1998	599	684	5,616	295	20,509	19,935	3,960	2,604	323	54,525
1999	556	728	5,402	285	20,369	19,122	3,606	2,758	519	53,345
2000	553	705	5,344	275	20,628	19,506	3,485	2,688	519	53,703
2001	490	716	4,805	245	19,413	17,928	3,225	2,484	600	49,906
2002	548	740	5,185	270	20,511	18,688	3,541	2,779	773	53,035
2003	553	792	5,410	281	20,393	20,136	3,898	2,817	838	55,119
2004	554	840	5,418	277	20,670	20,724	4,072	2,672	913	56,140
2005	589	897	5,667	292	21,352	21,934	4,064	2,959	783	58,537
2006	641	992	6,102	316	24,823	22,619	4,474	3,280	858	64,105
2007	636	995	6,071	312	23,109	23,111	4,642	3,099	941	62,916
2008	593	977	6,006	299	23,727	22,020	4,351	3,086	568	61,627
2009	576	986	5,709	274	21,177	22,112	4,482	2,848	543	58,707
2010*	640	972	5,912	273	22,351	22,095	4,355	2,970	739	60,307
2011	630	959	5,823	268	22,084	21,936	4,342	2,971	739	59,753
2012	610	918	5,663	258	21,375	21,352	4,233	2,920	739	58,067
2013	610	926	5,680	257	21,312	21,474	4,207	2,957	739	58,162
2014	609	968	5,687	256	21,676	21,797	4,247	3,013	739	58,993
2015	608	1,031	5,696	255	22,338	22,320	4,369	3,094	739	60,449
2016	615	1,081	5,778	258	22,968	22,899	4,501	3,174	739	62,011
2017	625	1,119	5,886	262	23,617	23,470	4,642	3,256	739	63,615
2018	634	1,156	5,991	266	24,184	24,015	4,763	3,333	739	65,081
2019	641	1,183	6,080	269	24,636	24,464	4,862	3,397	739	66,270
2020	649	1,206	6,168	271	25,054	24,878	4,949	3,453	739	67,367
2021	657	1,230	6,258	274	25,479	25,299	5,039	3,510	739	68,485
2022	665	1,255	6,349	277	25,913	25,729	5,130	3,568	739	69,624
Average Annual Growth										
1990-2000	0.24%	2.50%	0.01%	0.04%	1.80%	1.01%	1.58%	2.18%	-3.90%	1.23%
2000-2010	1.48%	3.27%	1.01%	-0.08%	0.81%	1.25%	2.25%	1.00%	3.59%	1.17%
2010-2015	-1.05%	1.19%	-0.74%	-1.33%	-0.01%	0.20%	0.06%	0.82%	0.00%	0.05%
2010-2022	0.31%	2.15%	0.60%	0.12%	1.24%	1.28%	1.37%	1.54%	0.00%	1.20%
*Weather Normalized										
Note: Last historical year is 2010.										

Source: California Energy Commission, 2011

Table A-8: Peak Demand by Planning Area (MW), Updated Mid Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total (non-coincident)
1990	540	551	5,341	274	17,250	17,647	2,978	2,167	772	47,520
1991	502	553	5,152	255	16,497	16,709	3,006	2,166	416	45,256
1992	536	585	5,344	272	16,533	18,413	3,285	2,103	386	47,457
1993	469	567	4,706	250	17,489	16,475	2,853	2,145	413	45,367
1994	524	620	5,032	274	17,173	18,044	3,301	2,044	468	47,480
1995	517	620	4,958	264	18,016	17,548	3,260	2,222	337	47,742
1996	520	671	5,121	270	19,077	18,207	3,305	2,372	487	50,030
1997	567	632	5,603	284	19,459	19,118	3,681	2,441	520	52,305
1998	599	684	5,616	295	20,509	19,935	3,960	2,604	323	54,525
1999	556	728	5,402	285	20,369	19,122	3,606	2,758	519	53,345
2000	553	705	5,344	275	20,628	19,506	3,485	2,688	519	53,703
2001	490	716	4,805	245	19,413	17,928	3,225	2,484	600	49,906
2002	548	740	5,185	270	20,511	18,688	3,541	2,779	773	53,035
2003	553	792	5,410	281	20,393	20,136	3,898	2,817	838	55,119
2004	554	840	5,418	277	20,670	20,724	4,072	2,672	913	56,140
2005	589	897	5,667	292	21,352	21,934	4,064	2,959	783	58,537
2006	641	992	6,102	316	24,823	22,619	4,474	3,280	858	64,105
2007	636	995	6,071	312	23,109	23,111	4,642	3,099	941	62,916
2008	593	977	6,006	299	23,727	22,020	4,351	3,086	568	61,627
2009	576	986	5,709	274	21,177	22,112	4,482	2,848	543	58,707
2010*	640	972	5,912	273	22,351	22,095	4,355	2,970	739	60,307
2011	646	994	5,967	275	22,618	22,467	4,433	3,046	739	61,186
2012	654	1,014	6,032	277	22,894	22,863	4,508	3,133	739	62,113
2013	662	1,043	6,123	279	23,261	23,385	4,578	3,226	739	63,297
2014	665	1,086	6,167	280	23,725	23,854	4,649	3,300	739	64,464
2015	662	1,132	6,163	278	24,177	24,241	4,724	3,356	739	65,473
2016	661	1,161	6,168	278	24,520	24,525	4,799	3,394	739	66,245
2017	663	1,181	6,201	278	24,894	24,813	4,890	3,435	739	67,094
2018	666	1,204	6,251	279	25,246	25,145	4,971	3,480	739	67,982
2019	671	1,225	6,318	281	25,605	25,508	5,052	3,530	739	68,930
2020	679	1,247	6,406	284	26,005	25,913	5,136	3,584	739	69,993
2021	687	1,270	6,495	287	26,413	26,326	5,222	3,638	739	71,075
2022	694	1,293	6,586	290	26,828	26,746	5,309	3,693	739	72,177
Average Annual Growth										
1990-2000	0.24%	2.50%	0.01%	0.04%	1.80%	1.01%	1.58%	2.18%	-3.90%	1.23%
2000-2010	1.48%	3.27%	1.01%	-0.08%	0.81%	1.25%	2.25%	1.00%	3.59%	1.17%
2010-2015	0.68%	3.08%	0.84%	0.40%	1.58%	1.87%	1.64%	2.48%	0.00%	1.66%
2010-2022	0.68%	2.40%	0.90%	0.50%	1.53%	1.60%	1.66%	1.83%	0.00%	1.51%

*Weather Normalized

Note: Last historical year is 2010.

Source: California Energy Commission, 2011

Table A-9: Peak Demand by Planning Area (MW), Updated High Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	DWR	Total (non-coincident)
1990	540	551	5,341	274	17,250	17,647	2,978	2,167	772	47,520
1991	502	553	5,152	255	16,497	16,709	3,006	2,166	416	45,256
1992	536	585	5,344	272	16,533	18,413	3,285	2,103	386	47,457
1993	469	567	4,706	250	17,489	16,475	2,853	2,145	413	45,367
1994	524	620	5,032	274	17,173	18,044	3,301	2,044	468	47,480
1995	517	620	4,958	264	18,016	17,548	3,260	2,222	337	47,742
1996	520	671	5,121	270	19,077	18,207	3,305	2,372	487	50,030
1997	567	632	5,603	284	19,459	19,118	3,681	2,441	520	52,305
1998	599	684	5,616	295	20,509	19,935	3,960	2,604	323	54,525
1999	556	728	5,402	285	20,369	19,122	3,606	2,758	519	53,345
2000	553	705	5,344	275	20,628	19,506	3,485	2,688	519	53,703
2001	490	716	4,805	245	19,413	17,928	3,225	2,484	600	49,906
2002	548	740	5,185	270	20,511	18,688	3,541	2,779	773	53,035
2003	553	792	5,410	281	20,393	20,136	3,898	2,817	838	55,119
2004	554	840	5,418	277	20,670	20,724	4,072	2,672	913	56,140
2005	589	897	5,667	292	21,352	21,934	4,064	2,959	783	58,537
2006	641	992	6,102	316	24,823	22,619	4,474	3,280	858	64,105
2007	636	995	6,071	312	23,109	23,111	4,642	3,099	941	62,916
2008	593	977	6,006	299	23,727	22,020	4,351	3,086	568	61,627
2009	576	986	5,709	274	21,177	22,112	4,482	2,848	543	58,707
2010*	640	972	5,912	273	22,351	22,095	4,355	2,970	739	60,307
2011	657	1,013	6,065	280	22,930	22,810	4,476	3,099	739	62,070
2012	667	1,033	6,132	283	23,228	23,261	4,556	3,184	739	63,082
2013	672	1,055	6,188	284	23,440	23,663	4,597	3,258	739	63,896
2014	675	1,092	6,225	284	23,841	24,110	4,653	3,329	739	64,947
2015	673	1,140	6,230	283	24,340	24,563	4,732	3,395	739	66,094
2016	677	1,180	6,274	284	24,791	25,029	4,823	3,456	739	67,253
2017	683	1,210	6,346	287	25,287	25,499	4,929	3,519	739	68,500
2018	690	1,242	6,430	290	25,751	26,002	5,028	3,586	739	69,758
2019	699	1,271	6,531	293	26,214	26,533	5,126	3,656	739	71,063
2020	711	1,303	6,656	298	26,742	27,131	5,230	3,734	739	72,545
2021	724	1,336	6,784	303	27,281	27,744	5,337	3,814	739	74,061
2022	737	1,370	6,915	307	27,831	28,371	5,446	3,895	739	75,611
Average Annual Growth										
1990-2000	0.24%	2.50%	0.01%	0.04%	1.80%	1.01%	1.58%	2.18%	-3.90%	1.23%
2000-2010	1.48%	3.27%	1.01%	-0.08%	0.81%	1.25%	2.25%	1.00%	3.59%	1.17%
2010-2015	1.01%	3.22%	1.05%	0.74%	1.72%	2.14%	1.67%	2.71%	0.00%	1.85%
2010-2022	1.17%	2.90%	1.31%	1.00%	1.84%	2.11%	1.88%	2.29%	0.00%	1.90%

*Weather Normalized

Note: Last historical year is 2010.

Source: California Energy Commission, 2011

APPENDIX B: Key Inputs

Table B-1: Total Employment by Planning Area (Thousands), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
Low Demand Scenario									
2010	117	89	1,510	56	5,041	5,035	1,391	570	13,808
2011	115	88	1,485	55	4,964	4,968	1,375	552	13,601
2012	113	87	1,456	54	4,878	4,878	1,353	539	13,357
2013	115	89	1,480	55	4,953	4,958	1,376	545	13,569
2014	118	92	1,524	56	5,111	5,115	1,419	561	13,996
2015	121	96	1,569	58	5,273	5,277	1,465	579	14,438
2016	125	99	1,608	59	5,408	5,413	1,503	593	14,808
2017	127	102	1,647	61	5,539	5,543	1,540	607	15,166
2018	129	104	1,663	61	5,599	5,601	1,558	613	15,329
2019	129	105	1,672	62	5,630	5,630	1,567	617	15,412
2020	130	107	1,682	62	5,663	5,664	1,577	620	15,504
2021	131	108	1,693	62	5,696	5,699	1,587	623	15,599
2022	132	109	1,703	63	5,729	5,732	1,597	627	15,691
Mid Demand Scenario									
2010	117	89	1,510	56	5,041	5,035	1,391	570	13,808
2011	118	90	1,524	56	5,096	5,100	1,412	567	13,964
2012	120	93	1,555	57	5,208	5,207	1,444	575	14,259
2013	123	95	1,591	59	5,325	5,331	1,480	585	14,589
2014	126	99	1,630	60	5,468	5,472	1,518	601	14,974
2015	128	101	1,655	61	5,560	5,564	1,544	610	15,224
2016	129	103	1,667	61	5,605	5,609	1,557	615	15,346
2017	130	104	1,676	62	5,636	5,640	1,567	618	15,431
2018	130	105	1,685	62	5,671	5,672	1,578	621	15,524
2019	131	107	1,695	62	5,707	5,707	1,588	625	15,623
2020	132	108	1,707	63	5,745	5,746	1,600	629	15,729
2021	133	110	1,719	63	5,783	5,786	1,611	633	15,837
2022	134	111	1,730	64	5,819	5,822	1,622	636	15,939
High Demand Scenario									
2010	117	89	1,510	56	5,041	5,035	1,391	570	13,808
2011	119	91	1,533	57	5,126	5,130	1,420	570	14,046
2012	122	94	1,572	58	5,267	5,266	1,461	581	14,421
2013	125	97	1,613	59	5,399	5,404	1,500	593	14,790
2014	127	99	1,646	61	5,521	5,526	1,533	606	15,120
2015	129	102	1,671	62	5,615	5,619	1,559	616	15,374
2016	131	104	1,689	62	5,681	5,685	1,579	623	15,554
2017	132	106	1,708	63	5,744	5,748	1,597	629	15,728
2018	133	108	1,724	64	5,803	5,804	1,615	636	15,885
2019	135	110	1,741	64	5,860	5,860	1,631	642	16,042
2020	136	112	1,761	65	5,929	5,930	1,651	649	16,233
2021	138	113	1,780	66	5,988	5,991	1,668	655	16,400
2022	139	115	1,801	66	6,057	6,061	1,689	662	16,591

Source: Moody's and Global Insight 2011

Table B-2: Gross Product by Planning Area (Billion 2010$), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
Low Demand Scenario									
2010	17	11	221	8	755	712	203	72	1,999
2011	17	11	217	8	740	698	199	70	1,959
2012	16	11	212	8	727	683	195	67	1,918
2013	17	11	221	8	758	710	202	69	1,997
2014	18	12	233	9	799	747	214	73	2,104
2015	19	12	246	9	843	790	226	76	2,222
2016	20	13	259	10	887	831	239	80	2,338
2017	21	14	271	10	929	871	250	83	2,449
2018	22	14	280	10	959	900	259	86	2,529
2019	22	15	286	11	978	919	264	87	2,583
2020	23	15	293	11	998	939	270	88	2,636
2021	23	15	299	11	1,017	958	275	90	2,689
2022	24	16	306	11	1,037	978	281	91	2,743
Mid Demand Scenario									
2010	17	11	221	8	755	712	203	72	1,999
2011	18	12	231	9	788	743	211	74	2,084
2012	19	12	242	9	828	778	222	77	2,186
2013	20	13	252	9	865	810	231	79	2,279
2014	20	13	261	10	893	836	239	81	2,353
2015	21	13	267	10	916	858	246	83	2,414
2016	21	14	273	10	937	879	252	85	2,471
2017	22	14	280	10	960	901	259	86	2,532
2018	22	15	287	11	983	923	265	88	2,593
2019	23	15	294	11	1,005	945	272	90	2,654
2020	23	15	302	11	1,028	967	278	91	2,716
2021	24	16	309	11	1,051	990	285	93	2,779
2022	25	16	316	12	1,074	1,013	291	94	2,840
High Demand Scenario									
2010	17	11	221	8	755	712	203	72	1,999
2011	18	12	231	9	787	742	211	74	2,083
2012	19	12	240	9	820	770	220	76	2,165
2013	19	12	248	9	850	796	227	78	2,240
2014	20	13	257	9	881	825	236	80	2,322
2015	21	13	265	10	910	852	244	82	2,397
2016	21	14	273	10	937	878	252	85	2,470
2017	22	14	282	10	965	905	260	87	2,545
2018	22	15	290	11	994	933	268	89	2,621
2019	23	15	300	11	1,024	962	276	91	2,702
2020	24	16	310	11	1,056	994	286	94	2,791
2021	25	16	320	12	1,089	1,026	295	96	2,880
2022	26	17	332	12	1,125	1,061	305	99	2,977

Source: Moody's and Global Insight 2011

Table B-3: Personal Income by Planning Area (Billion 2010$), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
Low Demand Scenario									
2010	13	10	162	6	647	559	159	55	1,610
2011	13	10	165	6	658	569	162	55	1,639
2012	13	10	162	6	649	561	160	54	1,615
2013	13	10	163	6	654	566	161	55	1,627
2014	13	10	165	6	666	576	164	56	1,655
2015	13	11	170	6	688	595	169	58	1,710
2016	14	11	177	7	720	622	176	60	1,787
2017	14	12	186	7	757	654	185	64	1,879
2018	15	13	195	7	793	685	194	67	1,968
2019	16	13	202	7	827	714	202	70	2,052
2020	16	14	210	8	859	741	210	72	2,130
2021	17	14	216	8	887	766	216	75	2,200
2022	17	15	222	8	914	789	222	77	2,265
Mid Demand Scenario									
2010	13	10	162	6	647	559	159	55	1,610
2011	13	10	168	6	672	581	165	56	1,673
2012	14	11	175	6	701	606	172	59	1,744
2013	14	12	183	7	736	637	181	62	1,832
2014	15	12	190	7	765	662	188	64	1,902
2015	15	12	195	7	790	683	194	66	1,962
2016	16	13	200	7	813	703	199	68	2,020
2017	16	13	206	8	837	723	205	70	2,078
2018	16	14	211	8	861	744	211	72	2,138
2019	17	14	217	8	886	765	217	75	2,198
2020	17	15	223	8	912	787	223	77	2,260
2021	18	15	228	8	937	809	228	79	2,322
2022	18	16	234	9	961	831	234	81	2,383
High Demand Scenario									
2010	13	10	162	6	647	559	159	55	1,610
2011	13	11	170	6	680	588	167	57	1,693
2012	14	11	175	6	701	607	173	59	1,745
2013	14	11	178	7	717	621	177	60	1,785
2014	14	12	184	7	741	642	182	62	1,844
2015	15	12	189	7	767	663	188	64	1,905
2016	15	13	195	7	791	684	194	66	1,966
2017	16	13	201	7	817	706	200	69	2,029
2018	16	14	208	8	846	731	207	71	2,100
2019	17	14	215	8	878	758	215	74	2,178
2020	17	15	223	8	913	788	223	77	2,265
2021	18	15	231	9	947	818	231	80	2,349
2022	18	16	239	9	981	848	239	83	2,432

Source: Moody's and Global Insight 2011

Table B-4: Manufacturing Output by Planning Area (Billion 2010$), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
Low Demand Scenario									
2010	2.12	0.83	27.35	1.01	122.81	87.57	20.72	3.31	265.71
2011	2.12	0.84	27.39	1.01	124.45	87.52	20.64	3.35	267.33
2012	2.18	0.86	28.09	1.04	127.69	89.46	21.15	3.36	273.82
2013	2.28	0.89	29.38	1.08	133.38	93.21	22.11	3.48	285.80
2014	2.38	0.93	30.69	1.13	139.00	97.19	23.20	3.58	298.11
2015	2.48	0.97	32.00	1.18	145.13	101.48	24.37	3.71	311.33
2016	2.58	1.02	33.26	1.23	151.43	105.75	25.56	3.84	324.67
2017	2.67	1.07	34.42	1.27	157.44	109.83	26.70	3.96	337.35
2018	2.74	1.10	35.31	1.30	162.12	112.99	27.60	4.05	347.21
2019	2.79	1.13	36.02	1.33	165.62	115.43	28.31	4.10	354.74
2020	2.85	1.16	36.77	1.36	169.25	117.96	29.04	4.16	362.55
2021	2.91	1.19	37.54	1.39	172.89	120.60	29.78	4.22	370.51
2022	2.97	1.21	38.31	1.41	176.44	123.24	30.52	4.28	378.39
Mid Demand Scenario									
2010	2.12	0.83	27.35	1.01	122.81	87.57	20.72	3.31	265.71
2011	2.22	0.88	28.62	1.06	130.04	91.45	21.57	3.50	279.34
2012	2.36	0.93	30.41	1.12	138.22	96.83	22.89	3.64	296.40
2013	2.46	0.96	31.71	1.17	143.95	100.60	23.86	3.75	308.46
2014	2.53	0.99	32.67	1.21	147.98	103.46	24.70	3.82	317.35
2015	2.59	1.01	33.43	1.23	151.61	106.01	25.46	3.88	325.23
2016	2.64	1.04	34.10	1.26	155.27	108.44	26.21	3.94	332.91
2017	2.70	1.08	34.80	1.28	159.20	111.06	27.00	4.01	341.12
2018	2.75	1.11	35.52	1.31	163.06	113.65	27.76	4.07	349.23
2019	2.81	1.14	36.26	1.34	166.71	116.19	28.49	4.13	357.06
2020	2.87	1.17	37.03	1.37	170.45	118.79	29.25	4.19	365.11
2021	2.93	1.19	37.82	1.40	174.18	121.50	30.00	4.25	373.27
2022	2.99	1.22	38.61	1.43	177.81	124.20	30.76	4.31	381.33
High Demand Scenario									
2010	2.12	0.83	27.35	1.01	122.81	87.57	20.72	3.31	265.71
2011	2.23	0.88	28.77	1.06	130.71	91.92	21.68	3.52	280.78
2012	2.37	0.93	30.53	1.13	138.76	97.21	22.98	3.66	297.57
2013	2.50	0.98	32.25	1.19	146.43	102.33	24.28	3.82	313.77
2014	2.63	1.03	33.99	1.25	153.94	107.63	25.69	3.97	330.13
2015	2.75	1.08	35.42	1.31	160.67	112.35	26.98	4.11	344.67
2016	2.85	1.13	36.73	1.36	167.26	116.81	28.24	4.24	358.62
2017	2.95	1.18	38.08	1.41	174.21	121.53	29.54	4.38	373.29
2018	3.07	1.24	39.60	1.46	181.79	126.70	30.95	4.54	389.34
2019	3.20	1.30	41.31	1.52	189.93	132.37	32.46	4.70	406.80
2020	3.35	1.36	43.18	1.59	198.75	138.52	34.10	4.88	425.73
2021	3.50	1.43	45.15	1.67	207.92	145.04	35.82	5.07	445.59
2022	3.67	1.50	47.29	1.75	217.80	152.13	37.68	5.28	467.09

Source: Moody's and Global Insight 2011

Table B-5: Household Population by Planning Area (Thousands), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
2010	313	344	4,044	149	13,781	14,407	3,491	1,455	37,984
2011	316	353	4,079	150	13,883	14,638	3,535	1,494	38,448
2012	318	365	4,104	151	13,991	14,877	3,568	1,524	38,899
2013	319	378	4,117	152	14,086	15,095	3,581	1,547	39,274
2014	319	389	4,115	152	14,197	15,248	3,590	1,559	39,568
2015	317	403	4,096	151	14,308	15,363	3,597	1,568	39,804
2016	316	414	4,085	151	14,458	15,465	3,631	1,581	40,101
2017	318	421	4,104	151	14,638	15,592	3,686	1,596	40,507
2018	320	430	4,133	152	14,809	15,753	3,731	1,613	40,942
2019	323	437	4,171	154	14,980	15,925	3,775	1,631	41,396
2020	327	445	4,218	156	15,156	16,109	3,822	1,651	41,883
2021	330	452	4,263	157	15,325	16,288	3,872	1,671	42,358
2022	333	459	4,306	159	15,494	16,465	3,929	1,692	42,836

Source: California Department of Finance and Moody's 2011

Table B-6: Number of Households by Planning Area (Thousands), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD	Total
Low Demand Scenario									
2010	116	107	1,363	57	4,943	4,506	1,224	545	12,861
2011	117	109	1,368	57	4,970	4,557	1,236	558	12,972
2012	117	113	1,369	57	5,000	4,611	1,243	568	13,077
2013	116	117	1,366	57	5,024	4,656	1,244	575	13,155
2014	116	120	1,359	56	5,055	4,682	1,243	577	13,208
2015	115	124	1,345	56	5,086	4,696	1,241	579	13,242
2016	114	127	1,335	55	5,131	4,705	1,249	582	13,299
2017	114	129	1,334	55	5,186	4,723	1,264	586	13,391
2018	114	131	1,337	55	5,238	4,749	1,276	590	13,491
2019	114	133	1,342	56	5,291	4,779	1,287	595	13,596
2020	115	135	1,350	56	5,344	4,812	1,298	601	13,712
2021	116	137	1,357	56	5,396	4,843	1,311	606	13,823
2022	116	139	1,364	57	5,447	4,873	1,326	612	13,934
Mid Demand Scenario									
2010	116	107	1,363	57	4,943	4,506	1,224	545	12,861
2011	117	110	1,371	57	4,978	4,568	1,238	559	12,997
2012	117	113	1,376	57	5,015	4,632	1,247	570	13,128
2013	117	117	1,377	57	5,047	4,690	1,250	577	13,232
2014	117	121	1,373	57	5,086	4,726	1,251	581	13,311
2015	116	125	1,363	57	5,125	4,752	1,251	583	13,371
2016	116	128	1,356	56	5,178	4,773	1,261	587	13,455
2017	116	130	1,358	56	5,242	4,801	1,278	592	13,574
2018	116	132	1,364	57	5,303	4,840	1,292	597	13,702
2019	117	135	1,373	57	5,365	4,882	1,305	603	13,836
2020	118	137	1,385	57	5,428	4,927	1,319	610	13,981
2021	119	139	1,396	58	5,489	4,970	1,334	616	14,122
2022	120	141	1,407	58	5,549	5,013	1,352	623	14,263
High Demand Scenario									
2010	116	107	1,363	57	4,943	4,506	1,224	545	12,861
2011	118	110	1,384	57	5,006	4,608	1,240	564	13,088
2012	119	115	1,400	58	5,069	4,711	1,255	577	13,305
2013	120	120	1,411	59	5,128	4,805	1,265	588	13,495
2014	121	124	1,415	59	5,188	4,876	1,270	595	13,648
2015	121	129	1,415	59	5,253	4,939	1,275	601	13,792
2016	120	133	1,412	59	5,310	4,983	1,284	607	13,908
2017	121	136	1,418	59	5,377	5,030	1,299	613	14,053
2018	122	139	1,427	59	5,440	5,087	1,311	620	14,204
2019	123	141	1,439	60	5,502	5,146	1,324	627	14,361
2020	124	144	1,453	60	5,562	5,205	1,336	634	14,517
2021	125	146	1,465	61	5,616	5,260	1,348	641	14,661
2022	126	148	1,476	61	5,667	5,311	1,362	648	14,798

Source: Moody's and Global Insight 2011

Table B-7: Average Residential Electricity Rates (2010 Cents/kWh), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD
Low Demand Scenario								
2010	15.28	13.79	12.49	14.97	15.60	15.94	17.28	11.93
2011	15.28	13.79	12.61	14.97	15.60	15.94	17.28	11.93
2012	15.66	14.13	12.61	15.34	15.98	16.33	17.70	12.22
2013	16.03	14.47	12.87	15.71	16.36	16.72	18.12	12.51
2014	16.41	14.81	13.14	16.08	16.75	17.11	18.55	12.81
2015	16.75	15.11	13.42	16.41	17.09	17.47	18.93	13.07
2016	17.01	15.35	13.70	16.67	17.36	17.74	19.23	13.28
2017	17.27	15.58	13.99	16.92	17.62	18.01	19.52	13.48
2018	17.53	15.83	14.29	17.18	17.90	18.29	19.82	13.69
2019	17.83	16.09	14.59	17.47	18.20	18.59	20.15	13.92
2020	18.15	16.38	14.89	17.79	18.53	18.93	20.52	14.17
2021	18.42	16.62	15.21	18.05	18.80	19.21	20.83	14.38
2022	18.72	16.90	15.53	18.35	19.11	19.53	21.17	14.62
Mid Demand Scenario								
2010	15.28	13.79	12.49	14.97	15.60	15.94	17.28	11.93
2011	15.28	13.79	12.61	14.97	15.60	15.94	17.28	11.93
2012	14.93	13.48	12.61	14.63	15.24	15.57	16.88	11.66
2013	15.17	13.69	12.82	14.86	15.48	15.82	17.15	11.84
2014	15.38	13.88	13.04	15.07	15.70	16.04	17.39	12.01
2015	15.57	14.05	13.26	15.26	15.89	16.24	17.60	12.15
2016	15.75	14.22	13.49	15.43	16.08	16.43	17.81	12.30
2017	15.94	14.39	13.72	15.62	16.27	16.63	18.02	12.45
2018	16.15	14.58	13.95	15.83	16.49	16.85	18.26	12.61
2019	16.36	14.77	14.19	16.03	16.70	17.06	18.50	12.77
2020	16.63	15.01	14.43	16.29	16.97	17.34	18.80	12.98
2021	16.95	15.30	14.67	16.61	17.30	17.68	19.16	13.23
2022	17.28	15.60	14.92	16.93	17.64	18.02	19.54	13.49
High Demand Scenario								
2010	15.28	13.79	12.49	14.97	15.60	15.94	17.28	11.93
2011	15.28	13.79	12.61	14.97	15.60	15.94	17.28	11.93
2012	14.63	13.21	12.61	14.34	14.94	15.26	16.54	11.42
2013	14.76	13.32	12.81	14.46	15.06	15.39	16.68	11.52
2014	14.89	13.44	13.01	14.59	15.19	15.53	16.83	11.62
2015	15.01	13.55	13.22	14.71	15.32	15.65	16.97	11.72
2016	15.13	13.66	13.43	14.83	15.45	15.78	17.11	11.81
2017	15.26	13.77	13.65	14.95	15.57	15.91	17.25	11.91
2018	15.38	13.88	13.86	15.07	15.70	16.04	17.39	12.01
2019	15.51	14.00	14.09	15.19	15.83	16.17	17.53	12.11
2020	15.64	14.12	14.31	15.32	15.96	16.31	17.68	12.21
2021	15.90	14.35	14.54	15.58	16.23	16.58	17.97	12.41
2022	16.16	14.59	14.77	15.84	16.50	16.85	18.27	12.62

Source: California Energy Commission, 2011

Table B-8: Average Commercial Electricity Rates (2010 Cents/kWh), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD
Low Demand Scenario								
2010	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2011	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2012	14.16	13.23	12.56	13.59	13.73	13.70	16.38	12.60
2013	14.50	13.54	12.86	13.91	14.06	14.03	16.77	12.91
2014	14.84	13.86	13.17	14.24	14.39	14.36	17.17	13.21
2015	15.14	14.15	13.44	14.54	14.69	14.65	17.52	13.48
2016	15.38	14.37	13.65	14.76	14.92	14.88	17.80	13.69
2017	15.62	14.59	13.86	14.99	15.14	15.11	18.07	13.90
2018	15.86	14.81	14.07	15.22	15.38	15.34	18.35	14.12
2019	16.12	15.06	14.31	15.47	15.63	15.60	18.65	14.35
2020	16.42	15.34	14.57	15.76	15.92	15.89	19.00	14.62
2021	16.66	15.56	14.78	15.99	16.15	16.12	19.27	14.83
2022	16.93	15.82	15.03	16.25	16.42	16.39	19.59	15.07
Mid Demand Scenario								
2010	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2011	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2012	13.50	12.62	11.98	12.96	13.09	13.07	15.62	12.02
2013	13.72	12.82	12.17	13.17	13.30	13.27	15.87	12.21
2014	13.91	13.00	12.34	13.35	13.49	13.46	16.10	12.38
2015	14.08	13.15	12.49	13.51	13.65	13.62	16.29	12.53
2016	14.24	13.31	12.64	13.67	13.81	13.78	16.48	12.68
2017	14.42	13.47	12.79	13.84	13.98	13.95	16.68	12.83
2018	14.61	13.65	12.96	14.02	14.16	14.13	16.90	13.00
2019	14.80	13.82	13.13	14.20	14.35	14.32	17.12	13.17
2020	15.04	14.05	13.34	14.43	14.58	14.55	17.40	13.38
2021	15.33	14.32	13.60	14.71	14.86	14.83	17.74	13.65
2022	15.63	14.60	13.87	15.00	15.15	15.12	18.08	13.91
High Demand Scenario								
2010	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2011	13.82	12.91	12.26	13.26	13.40	13.37	15.99	12.30
2012	13.23	12.36	11.74	12.70	12.83	12.81	15.31	11.78
2013	13.35	12.47	11.84	12.81	12.94	12.91	15.44	11.88
2014	13.46	12.58	11.95	12.92	13.05	13.03	15.58	11.98
2015	13.57	12.68	12.04	13.03	13.16	13.13	15.71	12.08
2016	13.69	12.79	12.14	13.14	13.27	13.24	15.83	12.18
2017	13.80	12.89	12.24	13.24	13.38	13.35	15.96	12.28
2018	13.91	13.00	12.34	13.35	13.49	13.46	16.09	12.38
2019	14.02	13.10	12.44	13.46	13.60	13.57	16.23	12.48
2020	14.14	13.21	12.55	13.58	13.72	13.69	16.36	12.59
2021	14.38	13.43	12.76	13.80	13.94	13.91	16.63	12.80
2022	14.61	13.65	12.97	14.03	14.17	14.14	16.91	13.01

Source: California Energy Commission, 2011

Table B-9: Average Industrial Electricity Rates (2010 Cents/kWh), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD
Low Demand Scenario								
2010	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2011	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2012	14.38	13.42	11.35	13.59	10.49	9.27	14.73	9.90
2013	14.72	13.74	11.62	13.91	10.74	9.49	15.08	10.13
2014	15.07	14.06	11.89	14.24	10.99	9.72	15.43	10.37
2015	15.38	14.35	12.14	14.54	11.22	9.92	15.75	10.58
2016	15.62	14.58	12.33	14.76	11.40	10.07	16.00	10.75
2017	15.86	14.80	12.52	14.99	11.57	10.23	16.24	10.91
2018	16.11	15.03	12.71	15.22	11.75	10.39	16.50	11.08
2019	16.37	15.28	12.92	15.47	11.95	10.56	16.77	11.27
2020	16.67	15.56	13.16	15.76	12.17	10.75	17.08	11.47
2021	16.92	15.79	13.35	15.99	12.34	10.91	17.33	11.64
2022	17.20	16.05	13.57	16.25	12.55	11.09	17.61	11.83
Mid Demand Scenario								
2010	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2011	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2012	13.71	12.80	10.82	12.96	10.01	8.84	14.05	9.44
2013	13.93	13.00	11.00	13.17	10.17	8.98	14.27	9.59
2014	14.13	13.18	11.15	13.35	10.31	9.11	14.47	9.72
2015	14.30	13.34	11.29	13.51	10.43	9.22	14.65	9.84
2016	14.47	13.50	11.42	13.67	10.55	9.33	14.82	9.96
2017	14.64	13.66	11.56	13.84	10.68	9.44	15.00	10.08
2018	14.83	13.84	11.71	14.02	10.82	9.57	15.19	10.21
2019	15.03	14.02	11.86	14.20	10.96	9.69	15.39	10.34
2020	15.27	14.25	12.05	14.43	11.14	9.85	15.64	10.51
2021	15.57	14.53	12.29	14.71	11.36	10.04	15.95	10.71
2022	15.87	14.81	12.53	15.00	11.58	10.23	16.26	10.92
High Demand Scenario								
2010	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2011	14.04	13.10	11.08	13.26	10.24	9.05	14.38	9.66
2012	13.44	12.54	10.61	12.70	9.81	8.67	13.77	9.25
2013	13.55	12.65	10.70	12.81	9.89	8.74	13.88	9.33
2014	13.67	12.76	10.79	12.92	9.98	8.82	14.00	9.41
2015	13.79	12.86	10.88	13.03	10.06	8.89	14.12	9.49
2016	13.90	12.97	10.97	13.14	10.14	8.96	14.24	9.57
2017	14.01	13.08	11.06	13.24	10.22	9.04	14.35	9.64
2018	14.13	13.18	11.15	13.35	10.31	9.11	14.47	9.72
2019	14.24	13.29	11.24	13.46	10.39	9.18	14.59	9.80
2020	14.36	13.40	11.34	13.58	10.48	9.26	14.71	9.89
2021	14.60	13.62	11.53	13.80	10.65	9.42	14.96	10.05
2022	14.84	13.85	11.72	14.03	10.83	9.57	15.20	10.21

Source: California Energy Commission, 2011

Table B-10: Average Commercial Natural Gas Rates (2010$/mBTU), Updated Forecast

Year	Burbank/ Glendale	IID	LADWP	Pasa-dena	PG&E	SCE	SDG&E	SMUD
Low Demand Scenario								
2010	7.25	7.25	7.25	7.25	8.22	7.25	4.01	8.22
2011	8.10	8.10	8.10	8.10	9.18	8.10	4.48	9.18
2012	8.54	8.54	8.54	8.54	9.68	8.54	4.72	9.68
2013	8.96	8.96	8.96	8.96	10.15	8.96	4.96	10.15
2014	9.25	9.25	9.25	9.25	10.49	9.25	5.12	10.49
2015	9.28	9.28	9.28	9.28	10.52	9.28	5.13	10.52
2016	9.29	9.29	9.29	9.29	10.53	9.29	5.14	10.53
2017	9.33	9.33	9.33	9.33	10.58	9.33	5.16	10.58
2018	9.46	9.46	9.46	9.46	10.73	9.46	5.24	10.73
2019	9.74	9.74	9.74	9.74	11.04	9.74	5.39	11.04
2020	9.74	9.74	9.74	9.74	11.05	9.74	5.39	11.05
2021	9.75	9.75	9.75	9.75	11.05	9.75	5.39	11.05
2022	10.01	10.01	10.01	10.01	11.35	10.01	5.54	11.35
Mid Demand Scenario								
2010	7.25	7.25	7.25	7.25	8.22	7.25	4.01	8.22
2011	7.28	7.28	7.28	7.28	8.26	7.28	4.03	8.26
2012	7.66	7.66	7.66	7.66	8.69	7.66	4.24	8.69
2013	8.05	8.05	8.05	8.05	9.13	8.05	4.45	9.13
2014	7.95	7.95	7.95	7.95	9.02	7.95	4.40	9.02
2015	8.02	8.02	8.02	8.02	9.09	8.02	4.44	9.09
2016	8.07	8.07	8.07	8.07	9.15	8.07	4.46	9.15
2017	8.15	8.15	8.15	8.15	9.24	8.15	4.51	9.24
2018	8.28	8.28	8.28	8.28	9.38	8.28	4.58	9.38
2019	8.40	8.40	8.40	8.40	9.53	8.40	4.65	9.53
2020	8.64	8.64	8.64	8.64	9.80	8.64	4.78	9.80
2021	8.90	8.90	8.90	8.90	10.09	8.90	4.92	10.09
2022	9.15	9.15	9.15	9.15	10.38	9.15	5.06	10.38
High Demand Scenario								
2010	7.25	7.25	7.25	7.25	8.22	7.25	4.01	8.22
2011	6.94	6.94	6.94	6.94	7.86	6.94	3.84	7.86
2012	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2013	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2014	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2015	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2016	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2017	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2018	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2019	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2020	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2021	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51
2022	6.62	6.62	6.62	6.62	7.51	6.62	3.66	7.51

Source: California Energy Commission, 2011

APPENDIX C: Econometric Models

Table C-1: Residential Sector Econometric Model

Variable	Estimated Coefficient	Standard Error	t-statistic
Persons per Household	0.3485	0.1258	2.77
Per capita income (2010$)	0.1077	0.0457	2.35
Unemployment Rate	-0.0034	0.0009	-3.86
Residential Electricity Rate (2010¢/kWh)	-0.0859	0.0111	-7.72
Number of Cooling Degree Days (65^{o})	0.0521	0.0084	6.23
Number of Heating Degree Days (65^{o})	0.0199	0.0083	2.39
Dummy: 2001	-0.0531	0.0051	-10.32
Dummy: 2002	-0.0339	0.0052	-6.47
Additional Income Effect: LADWP	0.1521	0.0699	2.18
Additional Income Effect: SCE	0.2327	0.1193	1.95
Additional Cooling Degree Day Impact: IID	0.2012	0.0360	5.59
Additional Cooling Degree Day Impact: LADWP	0.0528	0.0131	4.02
Additional Cooling Degree Day Impact: SCE	0.0554	0.0177	3.13
Additional Cooling Degree Day Impact: SMUD	0.0748	0.0187	3.99
Additional Heating Degree Day Impact: SMUD	0.1233	0.0266	4.63
Constant: Burbank/Glendale	0.8547	0.2924	2.92
Constant: LADWP	-1.0350	0.7849	-1.32
Constant: Pasadena	0.7633	0.2932	2.60
Constant: PG&E	1.1901	0.2928	4.07
Constant: SCE	-1.7422	1.2464	-1.40
Constant: SDG&E	1.0269	0.2919	3.52
Overall Constant	5.8714	0.5375	10.92
Trend Variables			
Time: Burbank/Glendale	0.0101	0.0016	6.33
Time Squared: Burbank/Glendale	-0.0001	0.0000	-3.29
Time: IID	0.0059	0.0008	7.54
Time: LADWP	0.0041	0.0011	3.86
Time: Pasadena	0.0181	0.0035	5.11
Time Squared: Pasadena	-0.0003	0.0001	-2.45
Time: PG&E	0.0015	0.0009	1.70
Time: SCE	0.0025	0.0017	1.43
Time: SDG&E	0.0035	0.0009	3.82
Time: SMUD	-0.0021	0.0009	-2.40
Adjusted for autocorrelation and cross-sectional correlation Wald chi squared = 38,324 Dependent variable = natural log of electricity consumption per household by planning area, 1980-2009 All variables in logged form except time and unemployment rate			

Source: California Energy Commission, 2011.

Table C-2: Commercial Sector Econometric Model

Variable	Estimated Coefficient	Standard Error	t-statistic
Commercial Floor Space (mm. sq. ft.)	0.7396	0.0611	12.10
% of Floor Space Refrigerated	14.2928	2.0529	6.96
Commercial Employment/Floor Space	0.3502	0.0782	4.48
Gross Product (billion 2010$)	0.1702	0.0608	2.80
Commercial Electricity Rate (2010¢/kWh)	-0.0298	0.0147	-2.03
Natural Gas Rate: except SMUD (2010$/mm. BTU)	0.0103	0.0068	1.53
Number of Cooling Degree Days (65^{o})	0.0426	0.0080	5.35
Dummy: 2001 (SDG&E only)	-0.0615	0.0220	-2.79
Constant: LADWP	-0.2255	0.0338	-6.67
Constant: SCE	0.0908	0.0812	1.12
Overall Constant	2.8471	0.1734	16.42
Trend Variables			
Time: Except Burbank/Glendale and SMUD	0.0126	0.0012	10.07
Time Squared: Except Burbank/Glendale and SMUD	-0.0003	0.0000	-8.66
Time: Burbank/Glendale	0.0434	0.0044	9.86
Time Squared: Burbank/Glendale	-0.0009	0.0001	-6.50
Time: SCE	0.0124	0.0015	8.20
Time Squared: SCE	-0.0002	0.0000	-3.94
Additional Time Impact: IID	0.0081	0.0009	9.21
Additional Time Impact: Pasadena	0.0088	0.0044	2.02
Additional Time Impact: PG&E	0.0029	0.0008	3.77
Additional Time Impact: SDG&E	0.0022	0.0007	3.30
Adjusted for autocorrelation and cross-sectional correlation Wald chi squared = 461,600 Dependent variable = natural log of commercial consumption by planning area, 1980-2009 All variables in logged form except time and % of floor space refrigerated			

Source: California Energy Commission, 2011.

Table C-3: Industrial Sector Econometric Model

Variable	Estimated Coefficient	Standard Error	t-statistic
Manufacturing Output (million 2010$)	0.5254	0.0558	9.41
Manufacturing Output/Manufacturing Employment	-0.3742	0.0481	-7.77
Output Text.,Paper, and Metals*/Manufacturing Output	0.8712	0.2849	3.06
Industrial Electricity Rate (2010¢/kWh)	-0.1217	0.0254	-4.78
Constant: Burbank/Glendale	0.7320	0.1725	4.24
Constant: LADWP	1.3980	0.2284	6.12
Constant: Pasadena	-0.3788	0.1283	-2.95
Constant: PG&E	2.6199	0.2704	9.69
Constant: SCE	2.4716	0.2797	8.84
Constant: SDG&E	0.7414	0.1813	4.09
Overall Constant	2.8471	0.1734	16.42
Trend Variables	3.3431	0.2805	11.92
Time: Burbank/Glendale	-0.0436	0.0066	-6.65
Time: IID	-0.0847	0.0172	-4.91
Time Squared: IID	0.0032	0.0006	5.44
Time: Pasadena	-0.0465	0.0043	-10.88
Time: SDG&E	0.0316	0.0052	6.06
Time Squared: SDG&E	-0.0008	0.0001	-5.50
Time: SMUD	0.1012	0.0177	5.71
Time Squared: SMUD	-0.0023	0.0005	-4.11
Adjusted for autocorrelation and cross-sectional correlation			
Wald chi squared = 36,865			
Dependent variable = natural log of industrial consumption by planning area, 1980-2009			
All variables in logged form except time and output textiles, paper, and metals/manufacturing output			
*Includes textiles, fiber, printing, and metal and machine manufacturing			

Source: California Energy Commission, 2011.

Table C-4: Mining and Construction Sector Econometric Model

Variable	Estimated Coefficient	Standard Error	t-statistic
Employment in Construction and Mining (thousands)	0.1473	0.0741	1.99
Output, Mining (million 2010$)	0.2327	0.0471	4.94
Industrial Electricity Rate (2010¢/kWh)	-0.0880	0.0675	-1.30
Dummy: 2002	-0.0642	0.0351	-1.83
Constant: Burbank/Glendale	-1.2140	0.1656	-7.33
Constant: IID	-1.4930	0.2601	-5.74
Constant: LADWP	0.8809	0.2324	3.79
Constant: Pasadena	-3.4218	0.3355	-10.20
Constant: PG&E	2.9578	0.2387	12.39
Constant: SCE	2.5907	0.2569	10.09
Dummy: 2002 (SDG&E only)	-1.1019	0.1113	-9.90
Dummy: 1997 (SDG&E only)	-0.3807	0.1120	-3.40
Overall Constant	2.8162	0.3331	8.45
Trend Variables	3.3431	0.2805	11.92
Time: Burbank/Glendale	0.0786	0.0125	6.29
Time Squared: Burbank/Glendale	-0.0017	0.0004	-3.95
Time: IID	0.0599	0.0115	5.21
Time: LADWP	-0.0126	0.0094	-1.34
Time: Pasadena	0.3157	0.0439	7.19
Time Squared: Pasadena	-0.0093	0.0015	-6.37
Time: PG&E	-0.0777	0.0134	-5.81
Time Squared: PG&E	0.0023	0.0004	5.58
Time: SCE	-0.0182	0.0119	-1.52
Time Squared: SCE	0.0007	0.0004	1.87
Time: SDG&E	0.1418	0.0223	6.37
Time Squared: SDG&E	-0.0043	0.0008	-5.25
Time: SMUD	0.0263	0.0050	5.23
Adjusted for autocorrelation and cross-sectional correlation Wald chi squared = 28,775 Dependent variable = natural log of commercial consumption by planning area, 1982-2009 All variables in logged form except time			

Source: California Energy Commission, 2011.

Table C-5: Peak Demand Econometric Model

Variable	Estimated Coefficient	Standard Error	t-statistic
Per capita income (2010$)	0.2900	0.0540	5.37
Unemployment Rate	-0.0049	0.0012	-4.23
Number of Households/Population	2.1396	0.6239	3.43
Residential Electricity Rate (2010¢/kWh)	-0.0977	0.0283	-3.45
Annual Max631 Temperature	0.6201	0.0924	6.71
Dummy: 2001	-0.0945	0.0137	-6.91
Dummy: 2002	-0.0420	0.0135	-3.11
Constant: Burbank/Glendale	-0.1985	0.0258	-7.69
Constant: IID	0.4344	0.0465	9.35
Constant: LADWP	-0.2776	0.0207	-13.42
Constant: Pasadena	-0.3083	0.0303	-10.17
Constant: PG&E	-0.2088	0.0189	-11.02
Constant: SCE	-0.2251	0.0319	-7.06
Constant: SDG&E	-0.4887	0.0396	-12.35
Overall Constant	-5.7046	0.7493	-7.61
Trend Variables			
Time: Burbank/Glendale	0.0052	0.0011	4.70
Time: Imperial Irrigation District	0.0057	0.0008	7.02
Time: Pasadena	0.0308	0.0033	9.28
Time Squared: Pasadena	-0.0008	0.0001	-7.87
Time: SCE	0.0081	0.0029	2.83
Time Squared: SCE	-0.0002	0.0001	-2.18
Time: SDG&E	0.0034	0.0017	2.00
Adjusted for autocorrelation and cross-sectional correlation			
Wald chi squared = 9,274			
Dependent variable = natural log of annual peak per capita by planning area, 1980-2010			
All variables in logged form except time, unemployment rate, and numbers of households/population			

Source: California Energy Commission, 2011

GLOSSARY

2009 IEPR	2009 Integrated Energy Policy Report
CED 2009	2009 California Energy Demand
DOF	California Department of Finance
E3	Energy and Environmental Economics
EIA	Energy Information Administration
GWH	Gigawatt Hour
IID	Burbank/Glendale, Imperial Irrigation District
LADWP	Los Angeles Department of Water and Power
PG&E	Pacific Gas and Electric
SCE	Southern California Edison
SDG&E	San Diego Gas & Electric
SMUD	Sacramento Municipal Utility District
TCU	Transportation, Communication, and Utilities