



California Energy Commission

IEPR Committee Workshop

CALIFORNIA ENERGY DEMAND 2011-2022 PRELIMINARY STAFF FORECAST

August 30, 2011 — 10:00 am

SDG&E Planning Area Electricity and Peak Forecast

Demand Analysis Office
Electricity Supply Analysis Division



SDG&E Forecast Overview

- 2010 reported consumption was 4% below *CED 2009* forecast
- *CED 2011* mid case consumption 2011-2020 growth rate slightly higher than *CED 2009*
- 2010 weather normalized peak was 3.5% below *CED 2009* forecast
- *CED 2011* mid case peak 2011-2020 growth rate similar to *CED 2009*
- Load factor now projected to increase slightly (mainly from projected off-peak EV load increase)
- Per capita consumption increases slightly at a lower level than *CED 2009*
- Per capita peak now declines (lower residential peak projection)



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SDG&E Planning Area Forecast Results

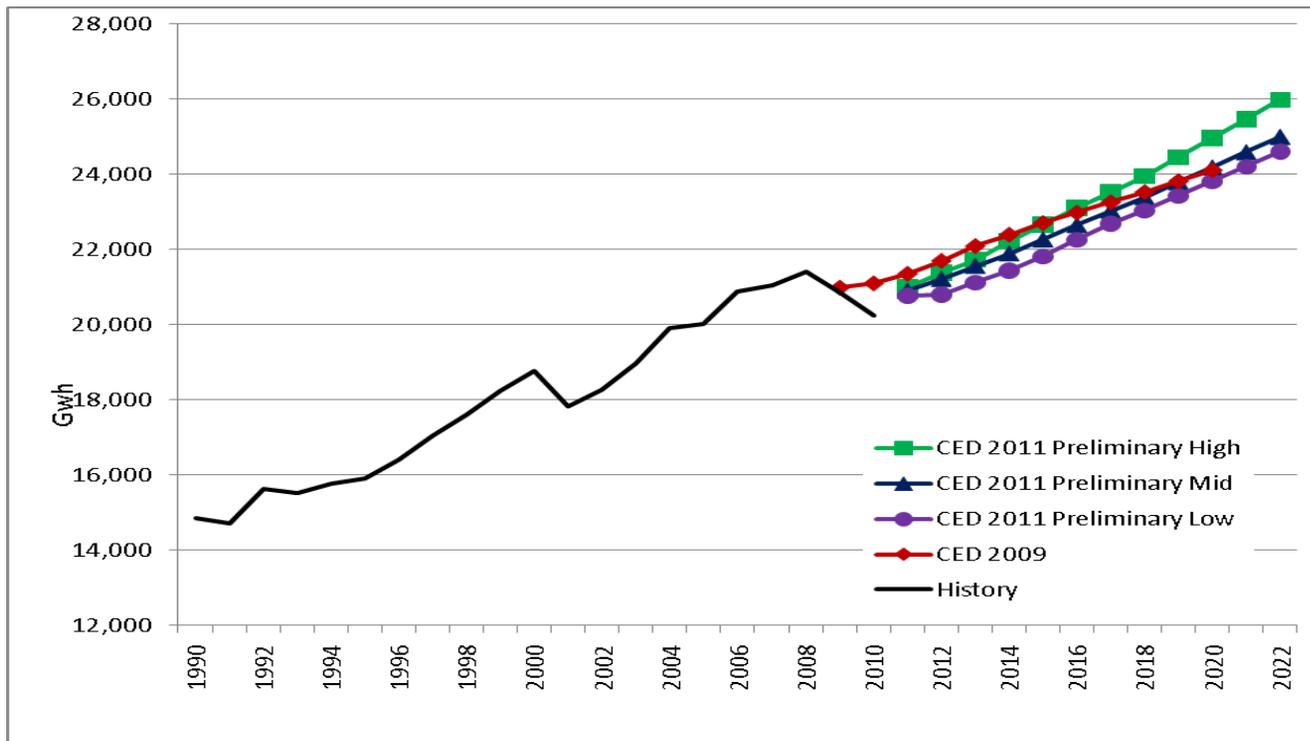
Consumption (GWh)				
	<i>CED 2009 (Dec. 2009)</i>	<i>CED 2011 Preliminary-High Energy Demand</i>	<i>CED 2011 Preliminary-Mid Energy Demand</i>	<i>CED 2011 Preliminary-Low Energy Demand</i>
1990	14,926	14,863	14,863	14,863
2000	19,294	18,784	18,784	18,784
2010	21,100	20,235	20,235	20,235
2011	21,354	20,999	20,898	20,772
2015	22,707	22,666	22,268	21,820
2020	24,119	24,971	24,187	23,817
2022	--	25,987	25,005	24,604
Average Annual Growth Rates				
1990-2000	2.60%	2.37%	2.37%	2.37%
2000-2010	0.90%	0.75%	0.75%	0.75%
2011-2015	1.55%	1.93%	1.60%	1.24%
2011-2020	1.36%	1.94%	1.64%	1.64%
2011-2022	--	2.11%	1.78%	1.64%
Peak (MW)				
	<i>CED 2009 (Dec. 2009)</i>	<i>CED 2011 Preliminary-High Energy Demand</i>	<i>CED 2011 Preliminary-Mid Energy Demand</i>	<i>CED 2011 Preliminary-Low Energy Demand</i>
1990	2,978	2,978	2,978	2,978
2000	3,485	3,485	3,485	3,485
2010	4,516	4,687	4,687	4,687
2011	4,578	4,463	4,490	4,508
2015	4,863	4,835	4,746	4,636
2020	5,174	5,271	5,077	4,964
2022	--	5,432	5,183	5,054
Average Annual Growth Rates				
1990-2000	1.58%	1.58%	1.58%	1.58%
2000-2010	2.63%	3.01%	3.01%	3.01%
2011-2015	1.52%	2.02%	1.39%	0.70%
2011-2020	1.37%	1.87%	1.38%	1.08%
2011-2022	--	1.24%	0.84%	0.63%

Historical values are shaded



SDG&E Electricity Consumption Forecast

- Lower starting point, faster growth, similar long term result

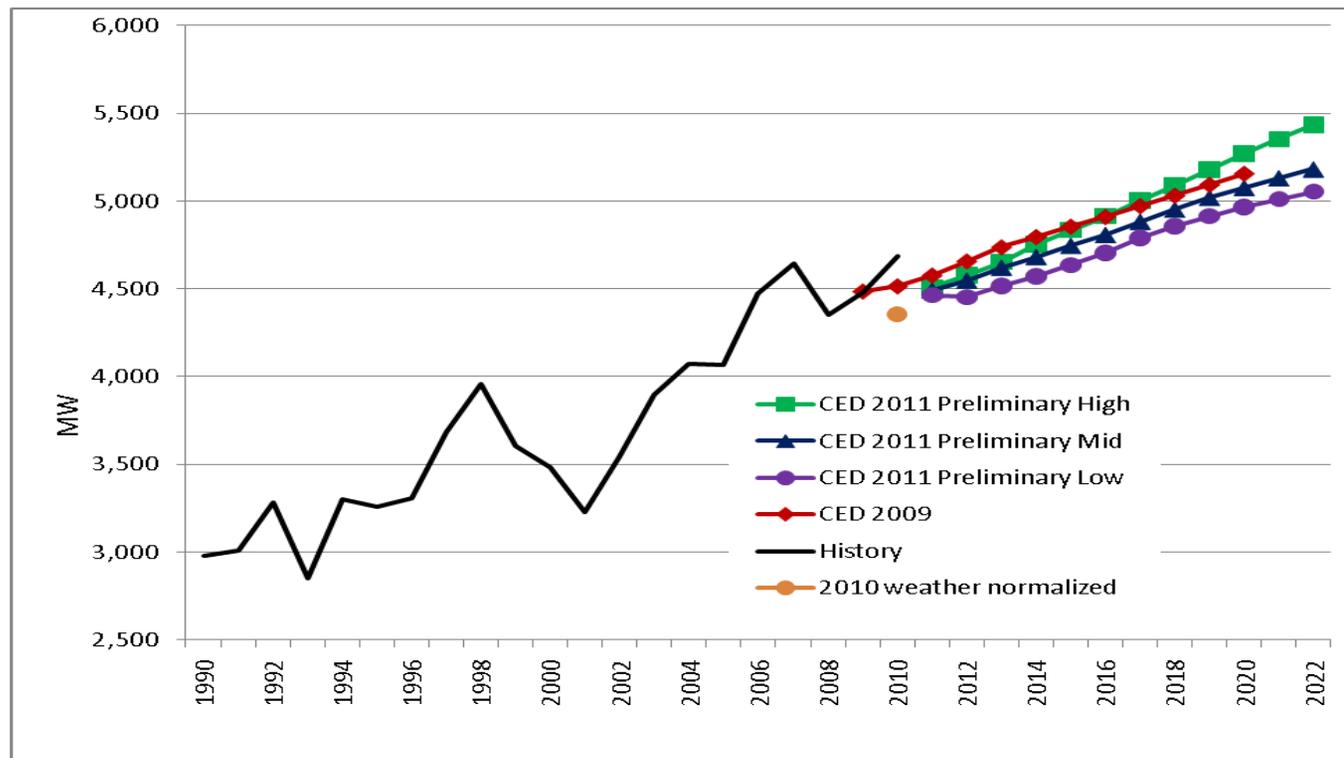


Source: California Energy Commission, 2011



SDG&E Planning Area Peak Forecast

- Lower starting point, similar mid case growth

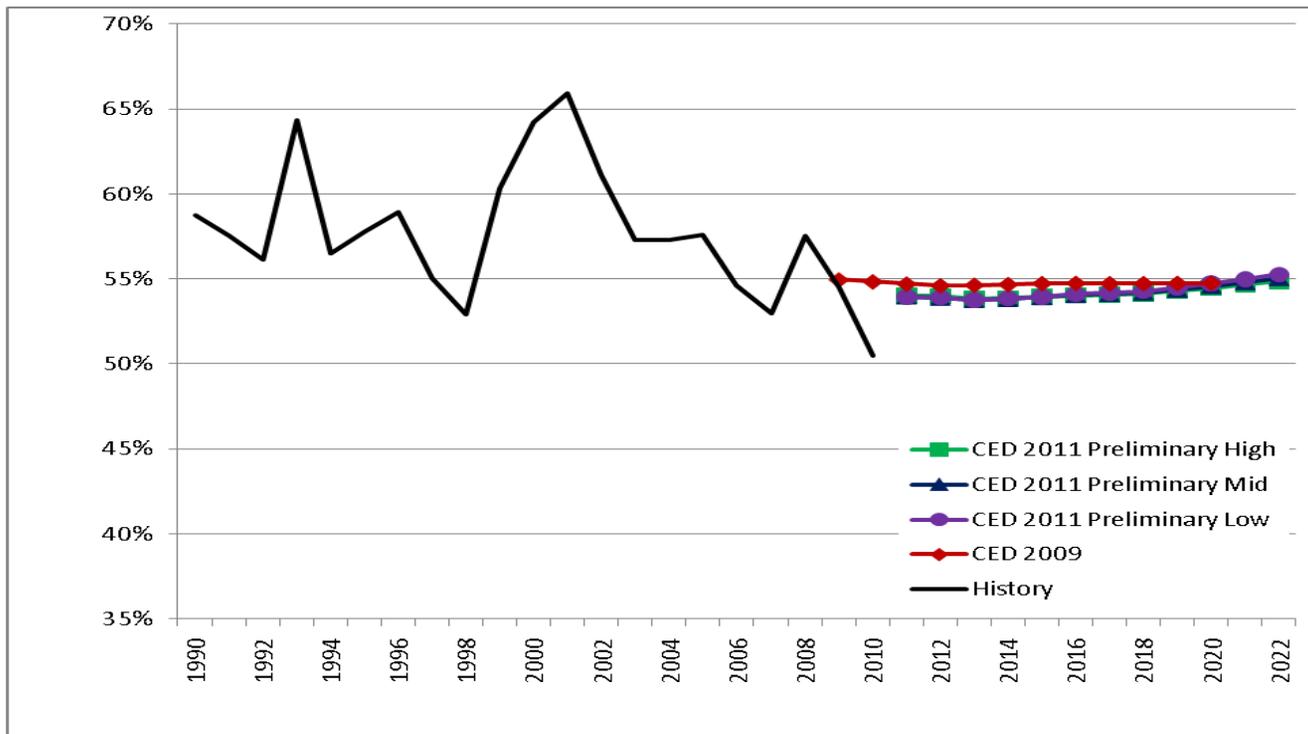


Source: California Energy Commission, 2011



SDG&E Planning Area Load Factor

- Similar to *CED 2009*

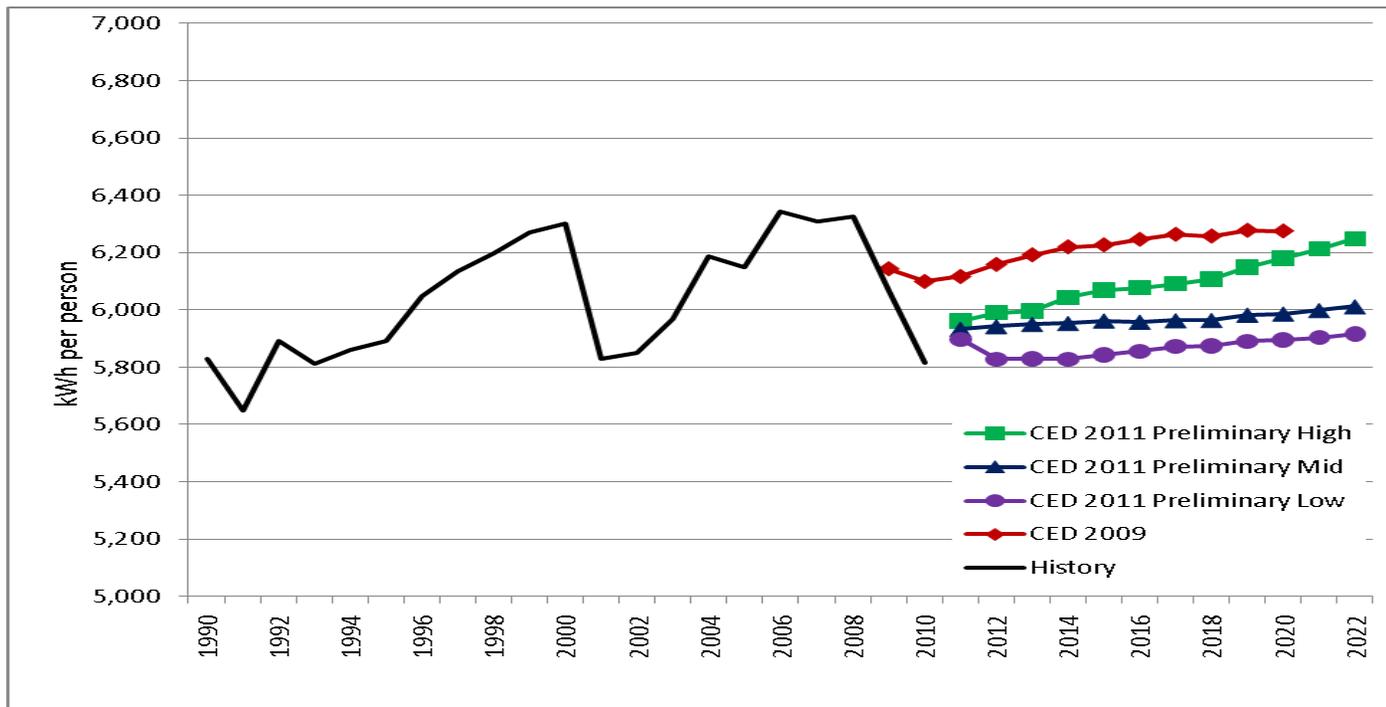


Source: California Energy Commission, 2011



SDG&E per Capita Consumption

- Mid case constant, all cases lower than *CED 2009*



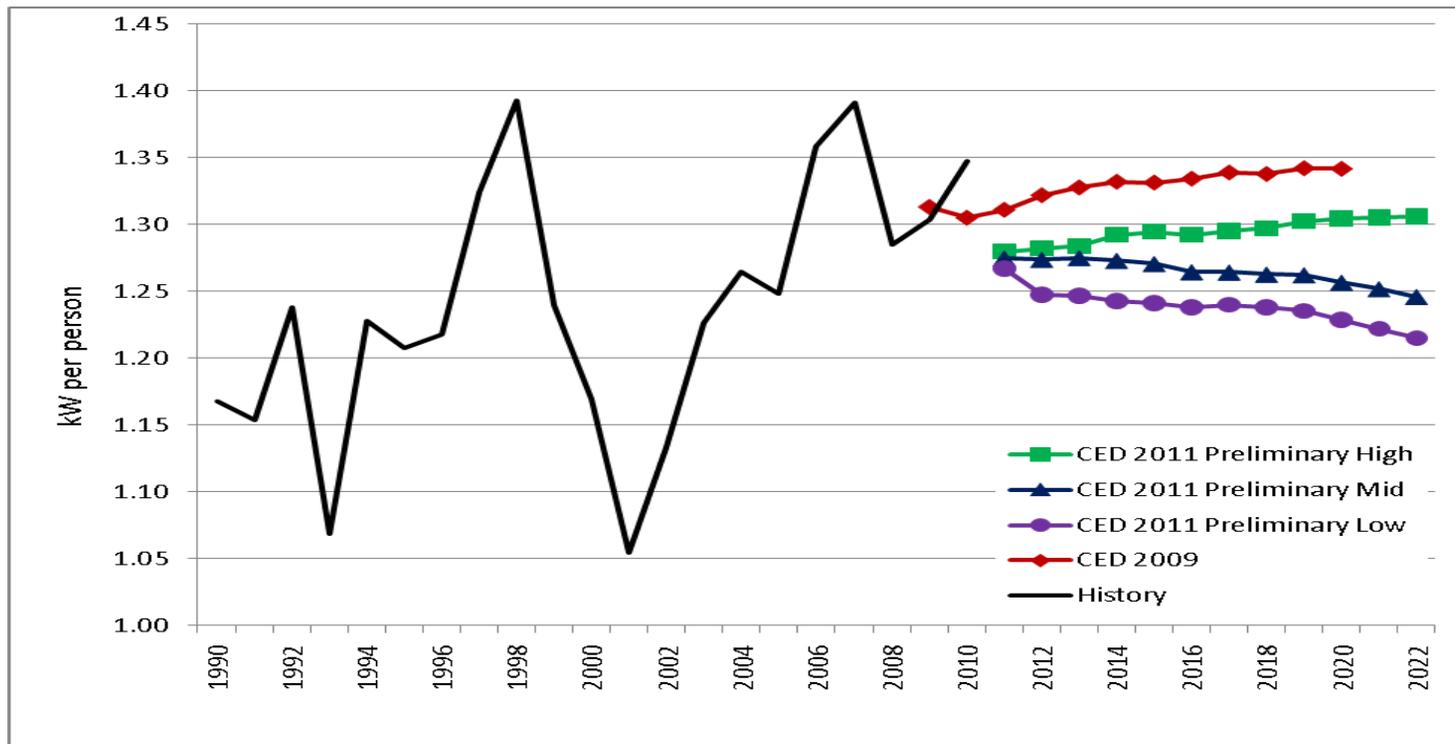
Source: California Energy Commission, 2011



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SD&E per Capita Peak

- Mid and low cases decline, high case has similar growth to *CED 2009*



Source: California Energy Commission, 2011



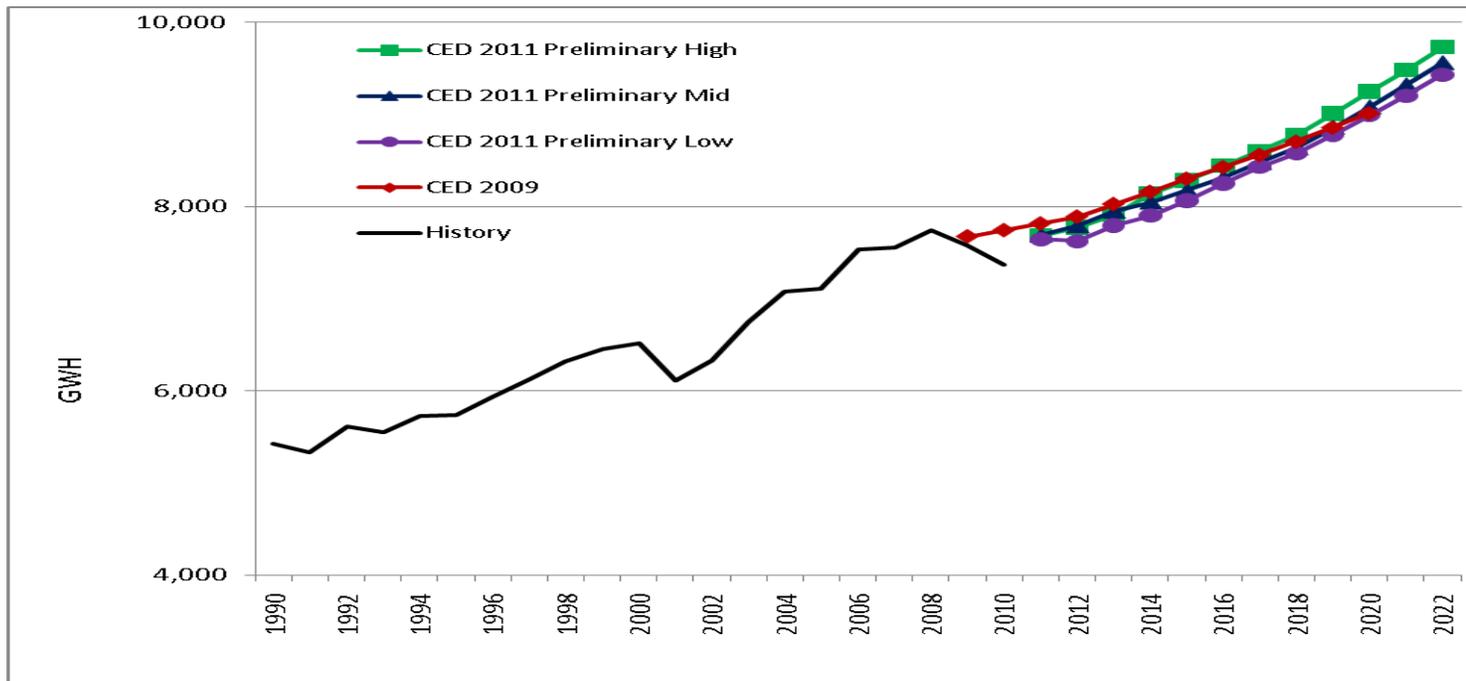
SDG&E Residential Forecast

- 2010 consumption was over 4% below *CED 2009* projections
- Slightly higher growth than *CED 2009*
- More household growth than *CED 2009*
- Increased persons per household forecast
- Similar household income (persons per household * per capita income) growth
- Use per household starts from lower point but increases in the long term from impact of EV's



SDG&E Residential Consumption

- Slightly lower starting point, higher growth, similar end result

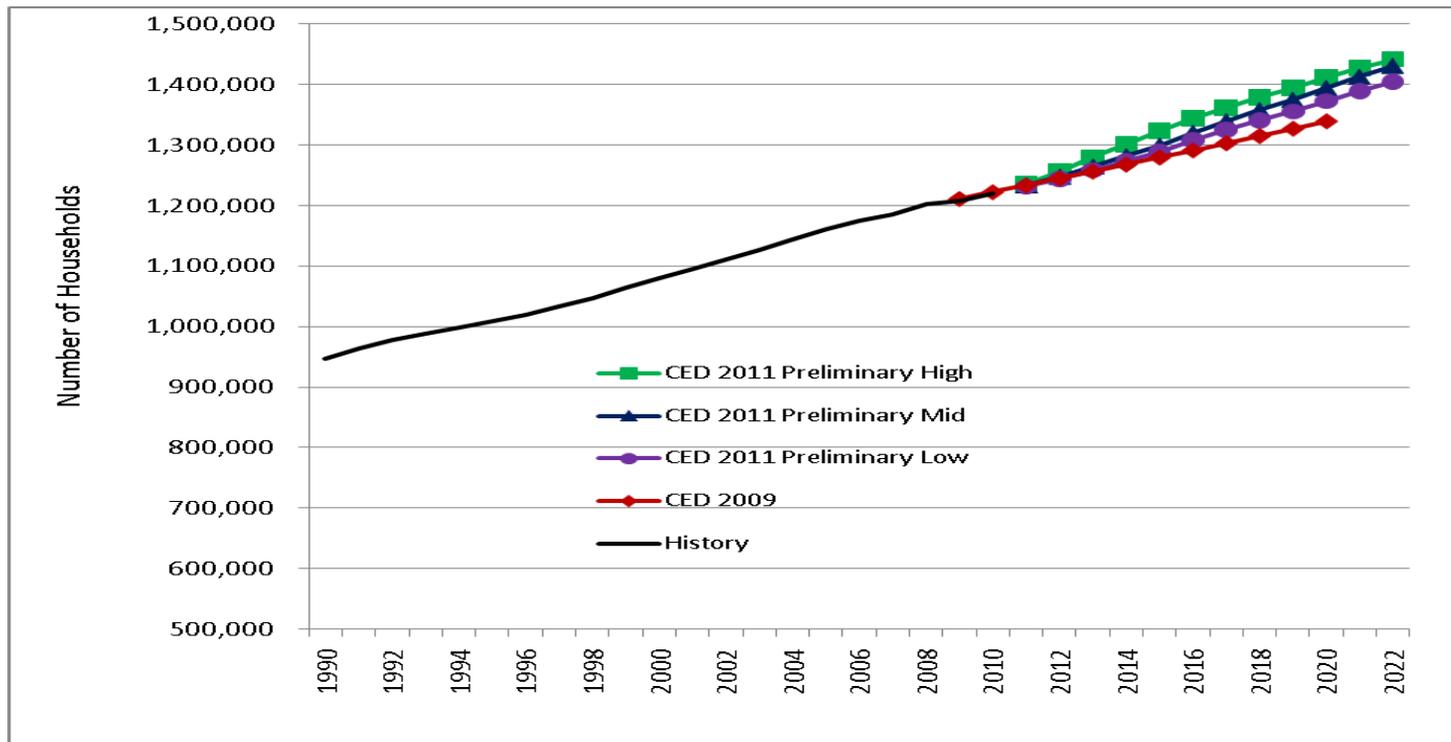


Source: California Energy Commission, 2011



SDG&E Planning Area Household Forecast

- Higher household growth in all cases



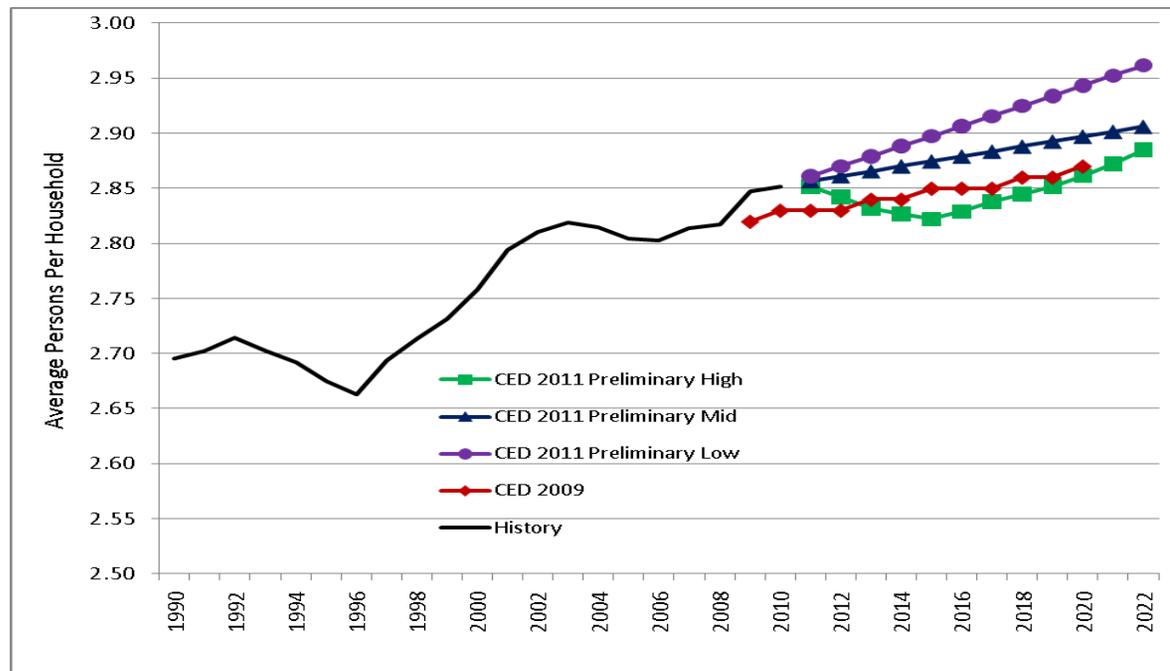
Source: California Energy Commission, 2011



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SDG&E Planning Area Persons per Household

- Mid and low scenarios derived historic trend analysis, higher than *CED 2009*
- High scenario from Economy.com projections



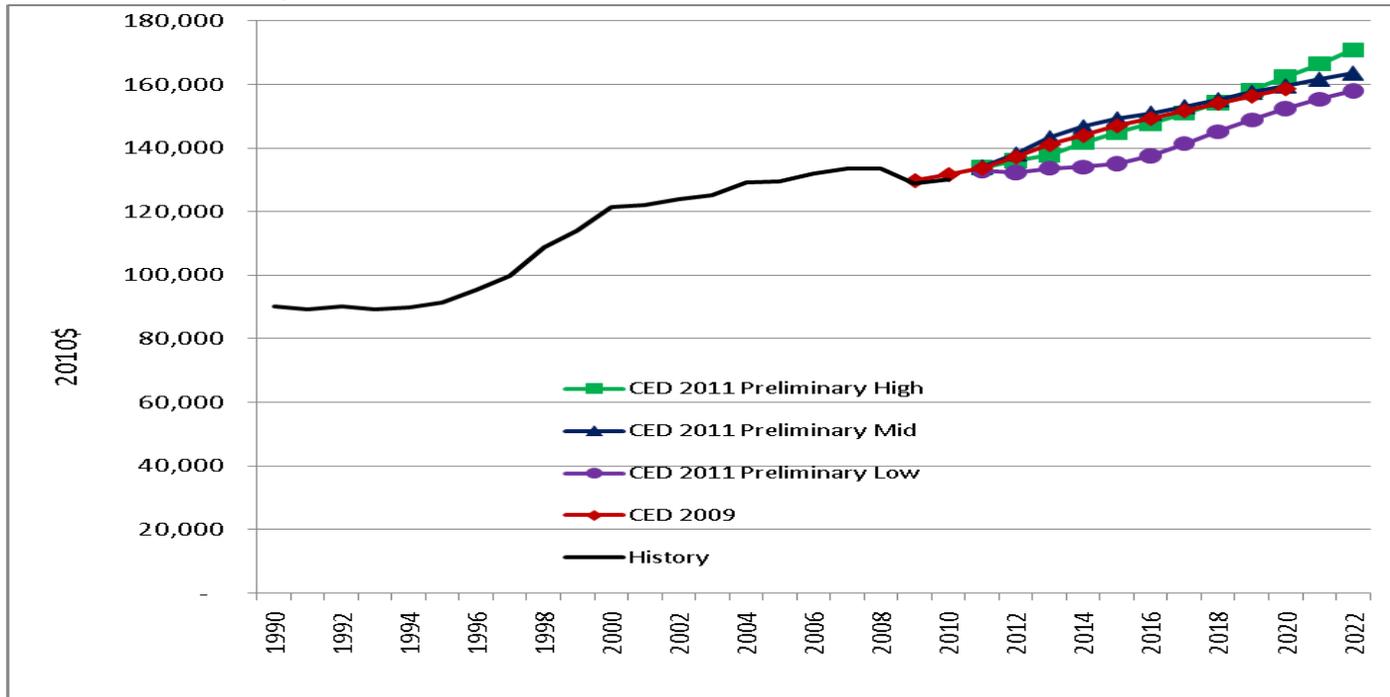
Source: California Energy Commission, 2011



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SDG&E Household Income

• Mid and high cases similar to *CED 2009*



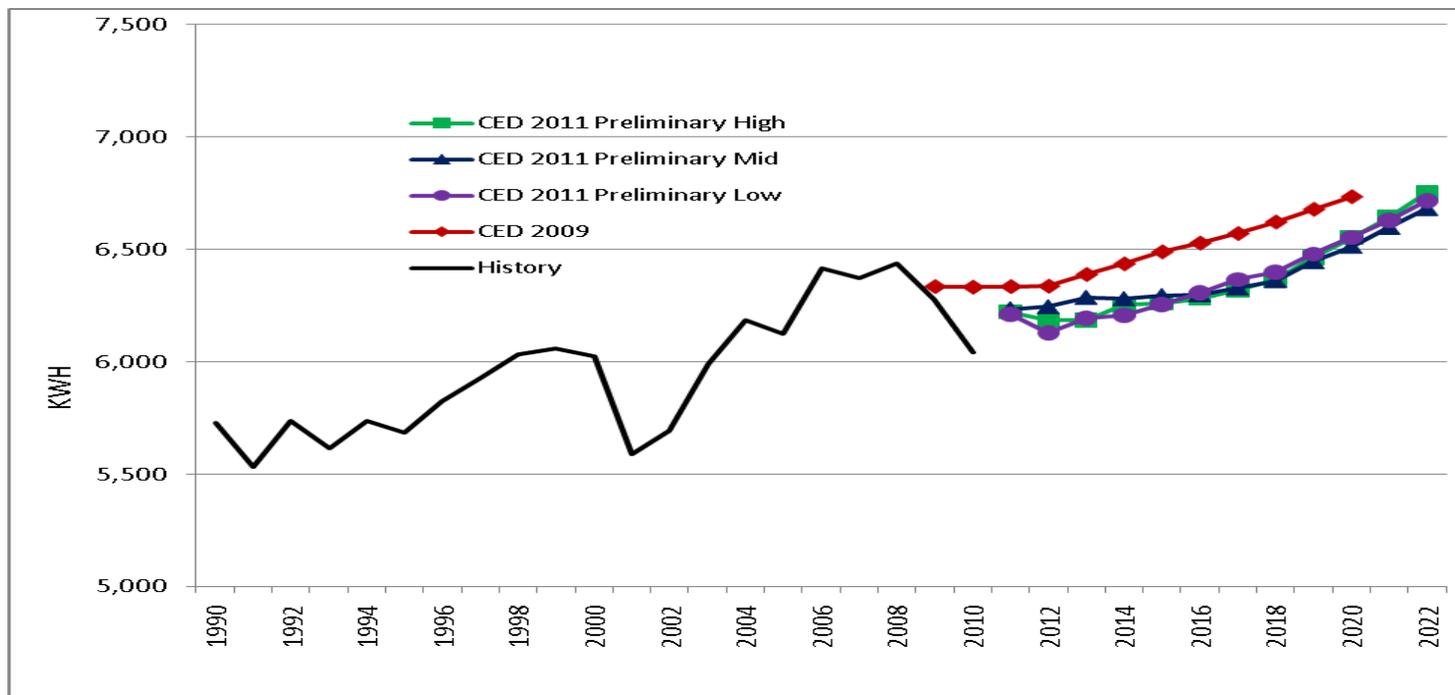
Source: California Energy Commission, 2011



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SDG&E Residential Use per Household

- All cases lower than *CED 2009* but increase at faster rate in long term



Source: California Energy Commission, 2011



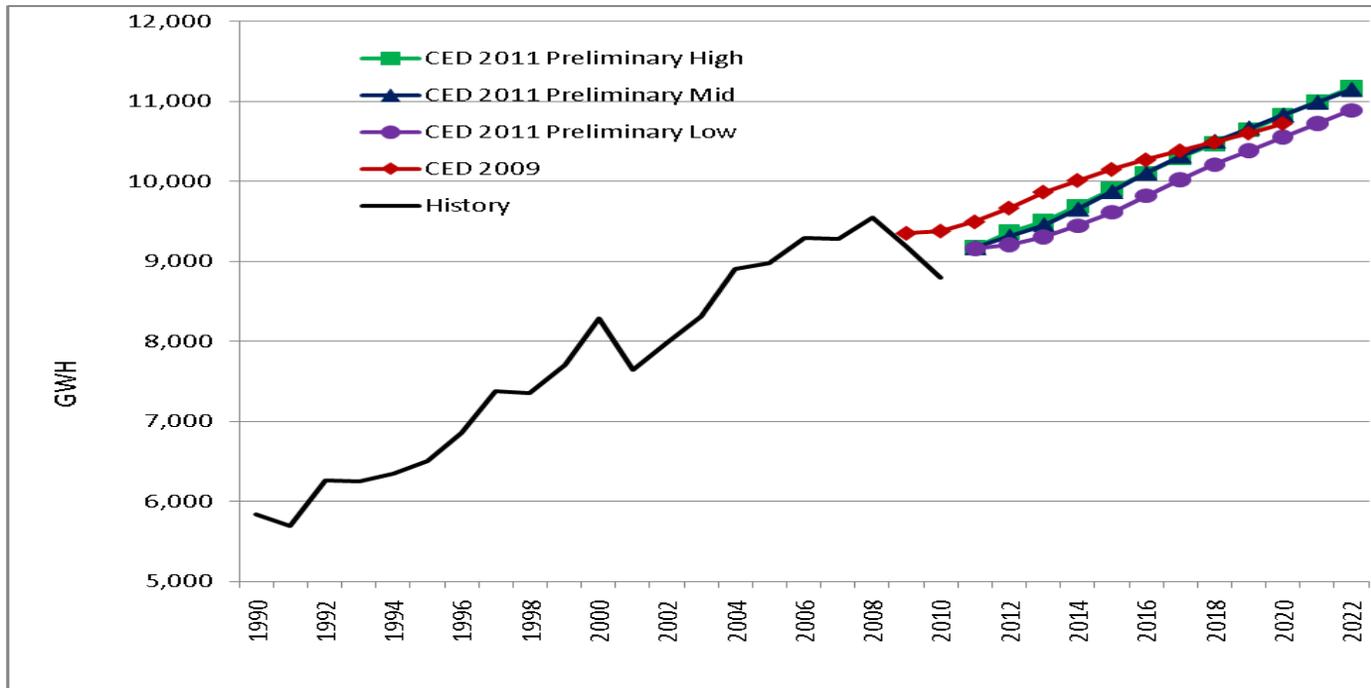
SDG&E Commercial Building Sector

- 2010 consumption was 6% below *CED 2009* projections
- *CED 2011* growth rate higher than *CED 2009* resulting in a similar 2020 value for mid and high case
- Floor space projections start from lower point but grow at a faster rate



SDG&E Commercial Building Consumption

- Lower starting point faster growth

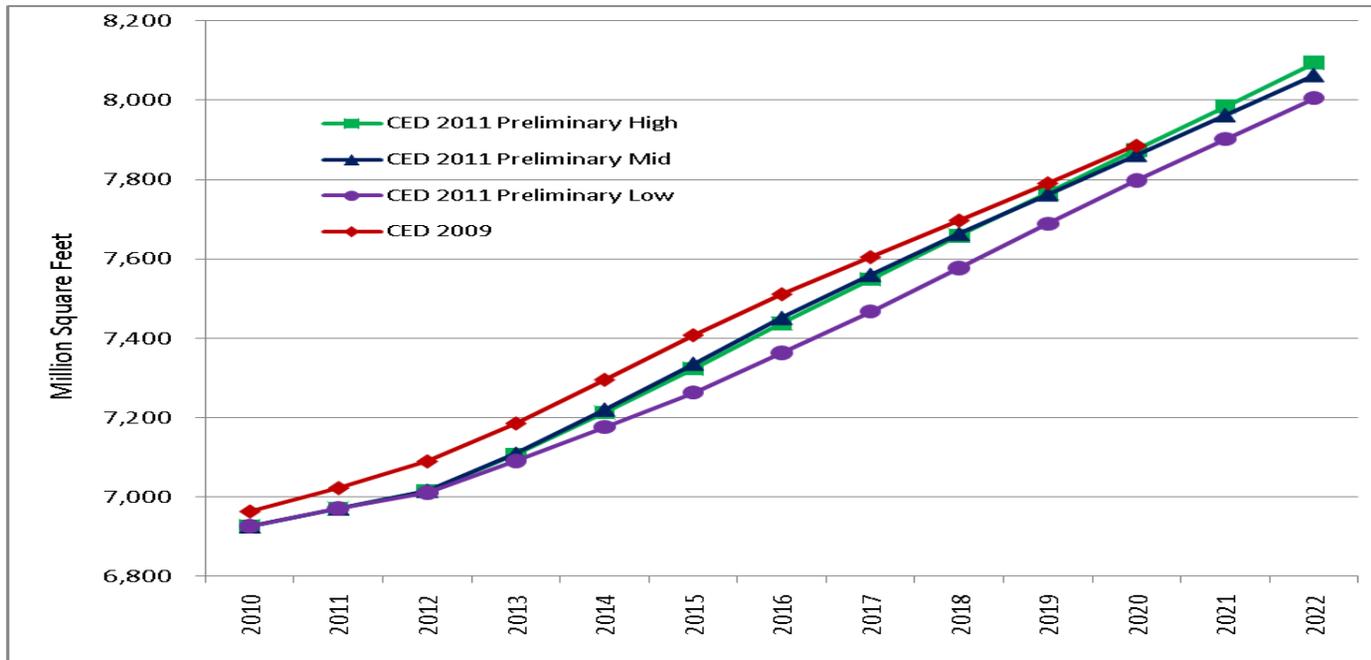


Source: California Energy Commission, 2011



SDG&E Commercial Floor Space

- Lower starting point faster growth



Source: California Energy Commission, 2011



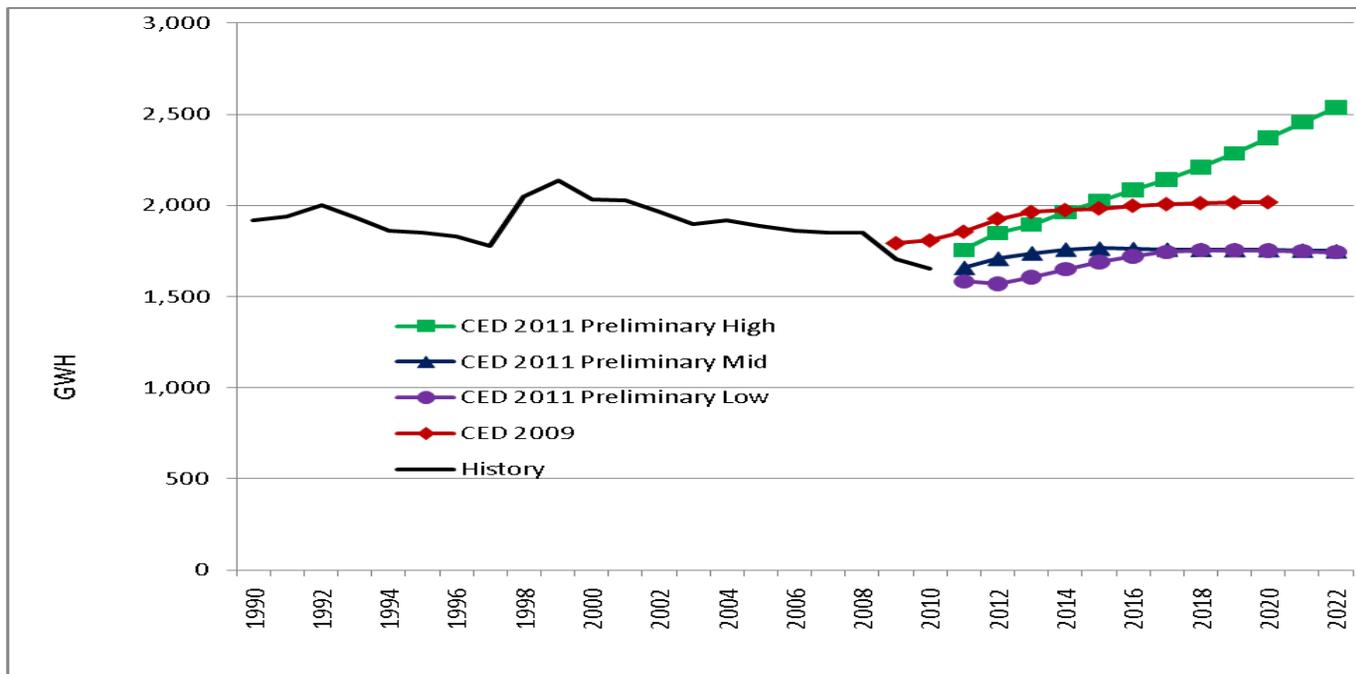
SDG&E Industrial and Mining Sector

- 2010 consumption was over 8% lower than *CED 2009* forecast
- Mid case growth similar to CED 2009 but starting from a lower level
- Scenario differences driven by difference in output assumptions



SDG&E Industrial and Mining Sector Consumption

- Lower starting point, relatively flat growth in mid and low cases



Source: California Energy Commission, 2011



SDG&E Other Sectors

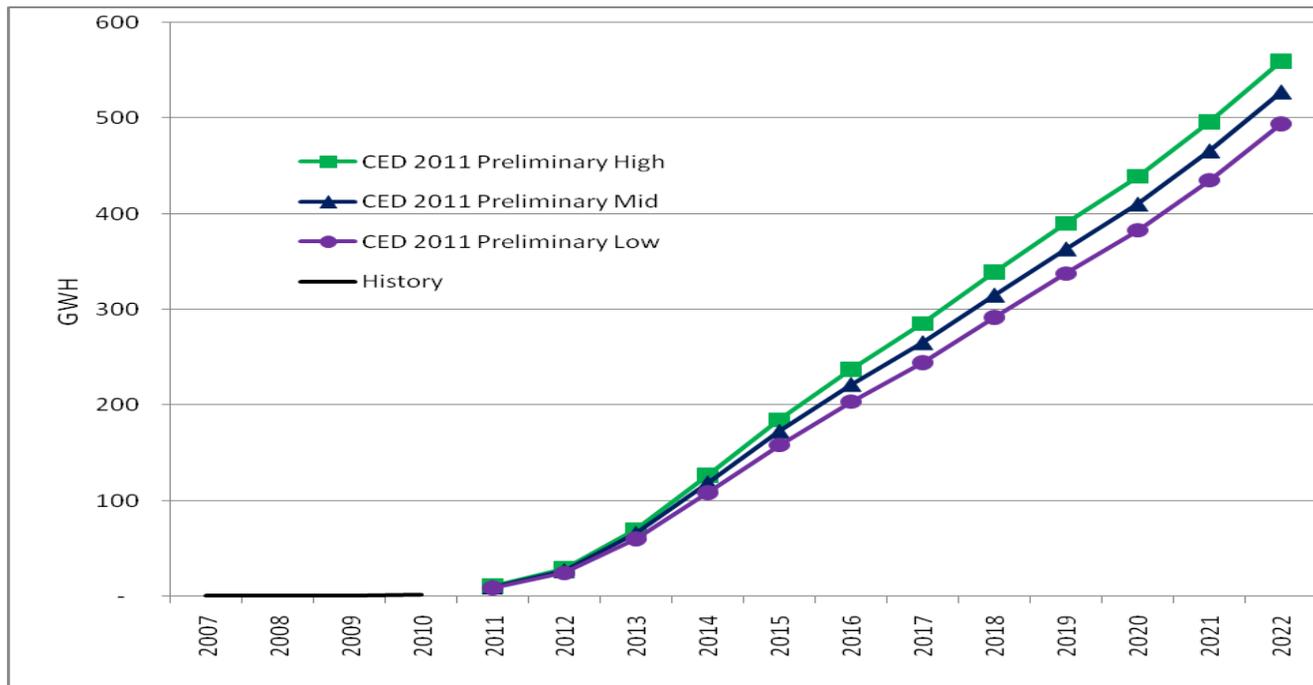
- Remaining sectors comprise about 12% of total 2010 consumption:
 - 9.5% Transportation, communications and utilities
 - 1.5% Agriculture and Water Pumping
 - 1% Streetlighting
- Forecasts have similar growth to CED 2009
- Electric vehicle use is projected to increase total consumption by about 2.1% by 2022 (mostly residential)



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SDG&E Electric Vehicle Forecast

- Peak impacts are projected to be from 20 MW to 25 MW in 2022



Source: California Energy Commission, 2011



Committed Efficiency Savings and Self Generation

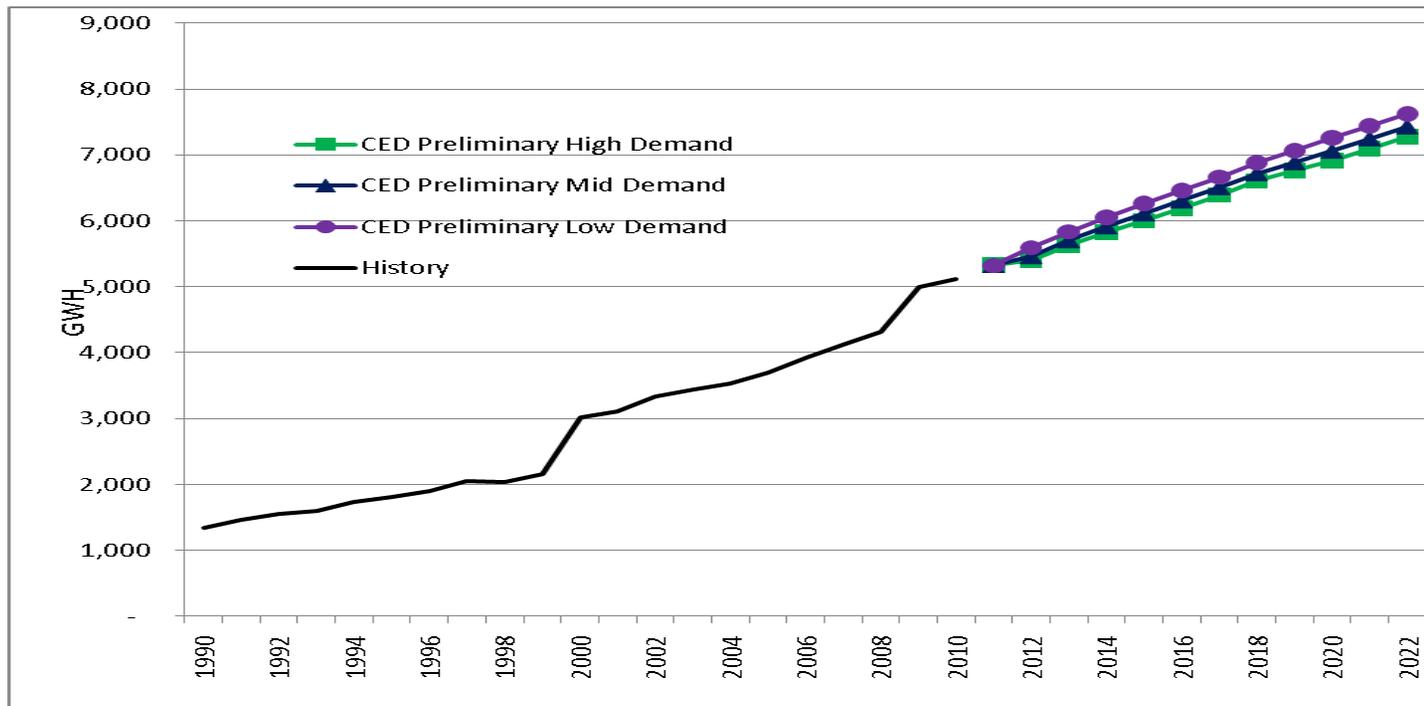
- Committed efficiency savings amount to 30% of consumption and 37% of peak by 2022
- 2009-2012 utility program estimates are based on current CPUC filings
- Self generation forecast is based new adoption model



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SDG&E Committed Efficiency Savings Estimates

- Results follow historic trend



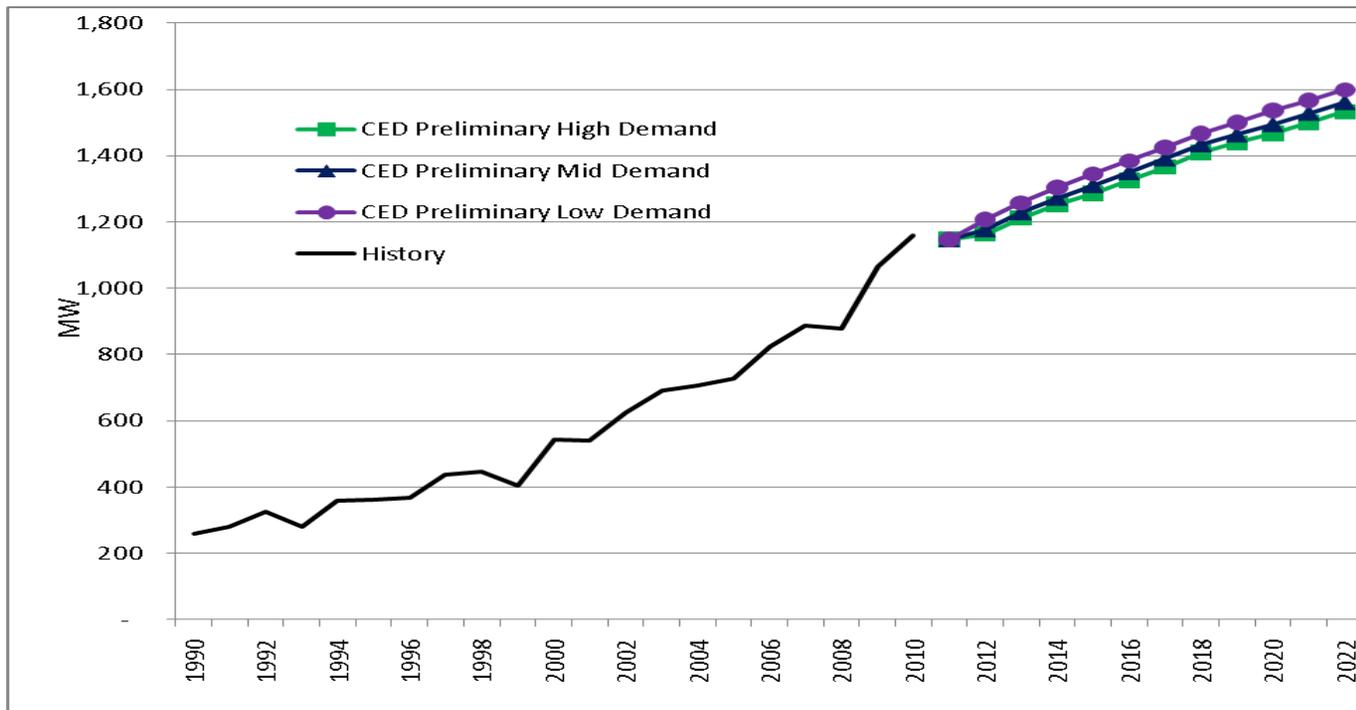
Source: California Energy Commission, 2011



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SDG&E Committed Efficiency Peak Savings Estimates

- Results follow longer historic trend



Source: California Energy Commission, 2011



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SDG&E Self Generation Peak Savings Estimates

- Mid case reduces peak by 6% in 2022

Year	1990	2000	2010	2015	2020	2022
Non-PV Self-Generation	78.68	59.47	104.39	128.17	128.17	128.17
PV, low case	0.00	0.06	45.56	108.63	171.16	219.68
PV, mid case	0.00	0.06	45.56	101.18	149.79	192.34
PV, high case	0.00	0.06	45.56	99.41	140.18	176.13
Total Self-Generation, low case	78.68	59.53	149.96	236.80	299.34	347.85
Total Self-Generation, mid case	78.68	59.53	149.96	229.35	277.96	320.51
Total Self-Generation, high case	78.68	59.53	149.96	227.58	268.36	304.30

Source: California Energy Commission, 2011



Comparison to SDG&E Forecast

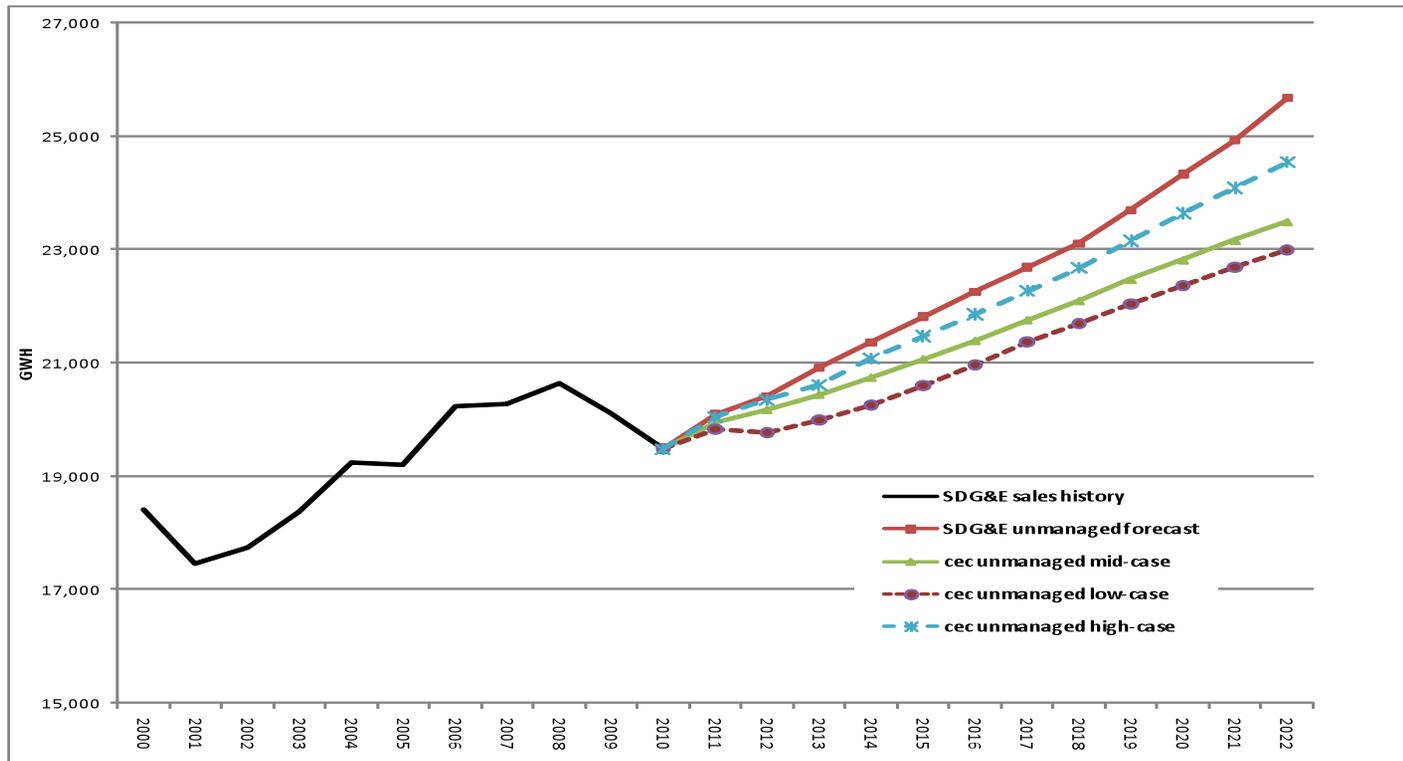
- CEC managed forecast includes uncommitted program savings estimates for purposes of comparison
- SDG&E managed and unmanaged sales forecast is higher than all *CED 2011* scenarios after 2012
- SDG&E managed and unmanaged residential forecast is higher than all *CED 2011* scenarios after 2014
- SDG&E EV forecast is 800 GWH (150%) higher than CEC mid case by 2012
- SDG&E unmanaged peak is lower than CEC mid case throughout the forecast period
- SDG&E managed peak is lower than CEC mid case until 2015
- Reasons for differential growth between SDG&E energy and peak forecasts need to be identified



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SDG&E Unmanaged Forecast Comparison

•SDG&E higher than all CEC scenarios



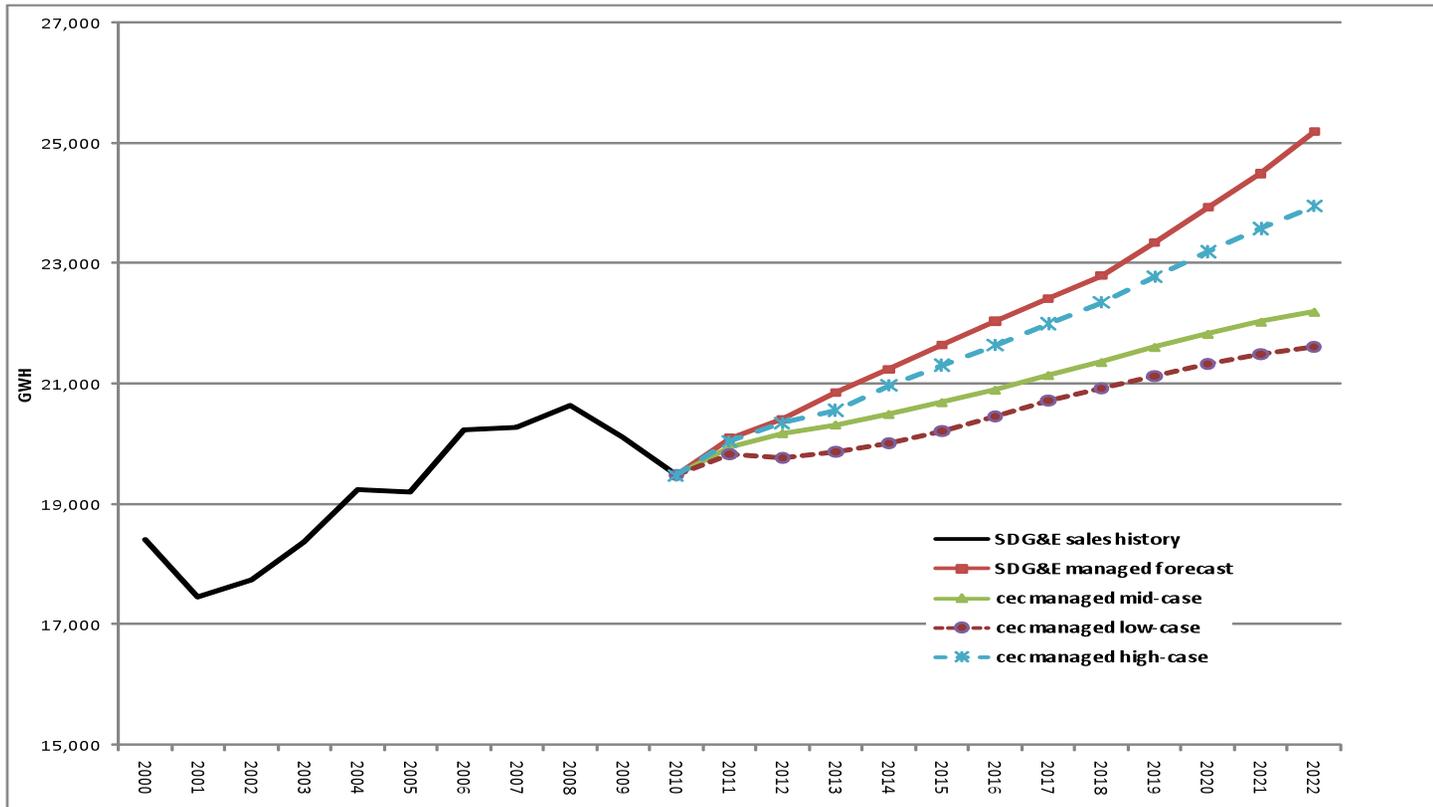
Source: California Energy Commission, 2011



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SDG&E Managed Forecast Comparison

- SDG&E higher than all CEC scenarios



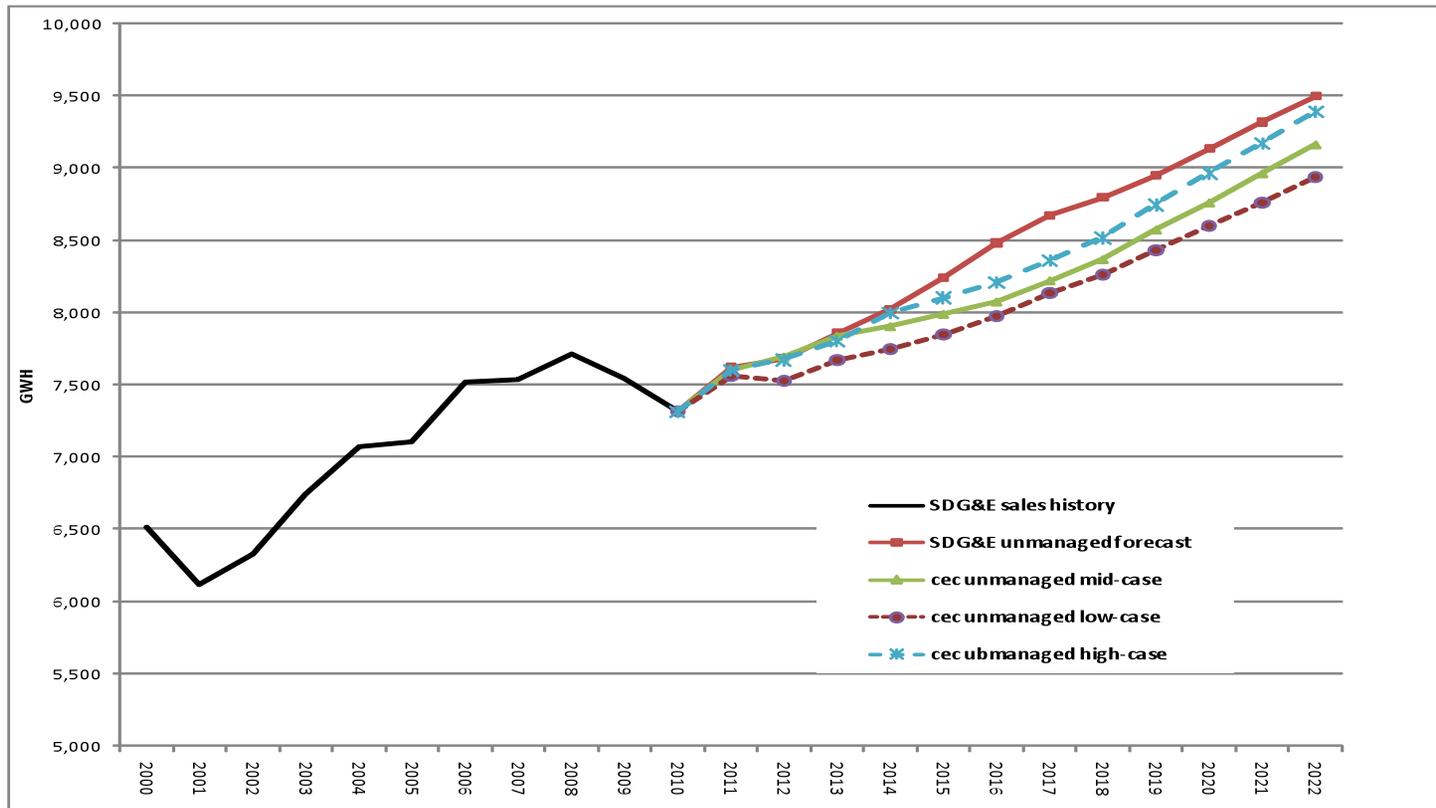
Source: California Energy Commission, 2011



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SDG&E Unmanaged Residential Forecast Comparison

- SDG&E projected residential growth higher than all CEC forecasts after 2014



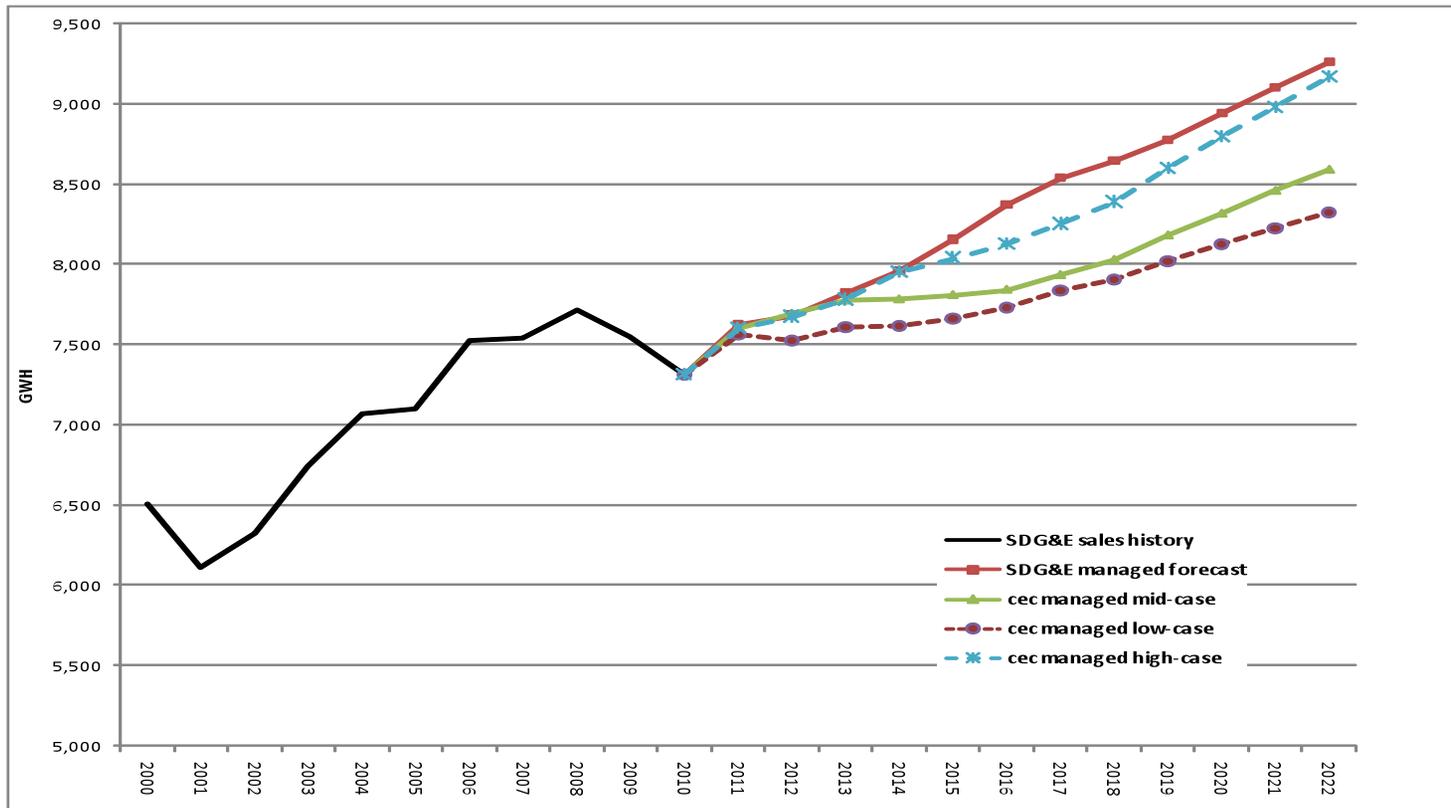
Source: California Energy Commission, 2011



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SDG&E Managed Residential Forecast Comparison

- SDG&E projected residential growth higher than all CEC forecasts after 2014



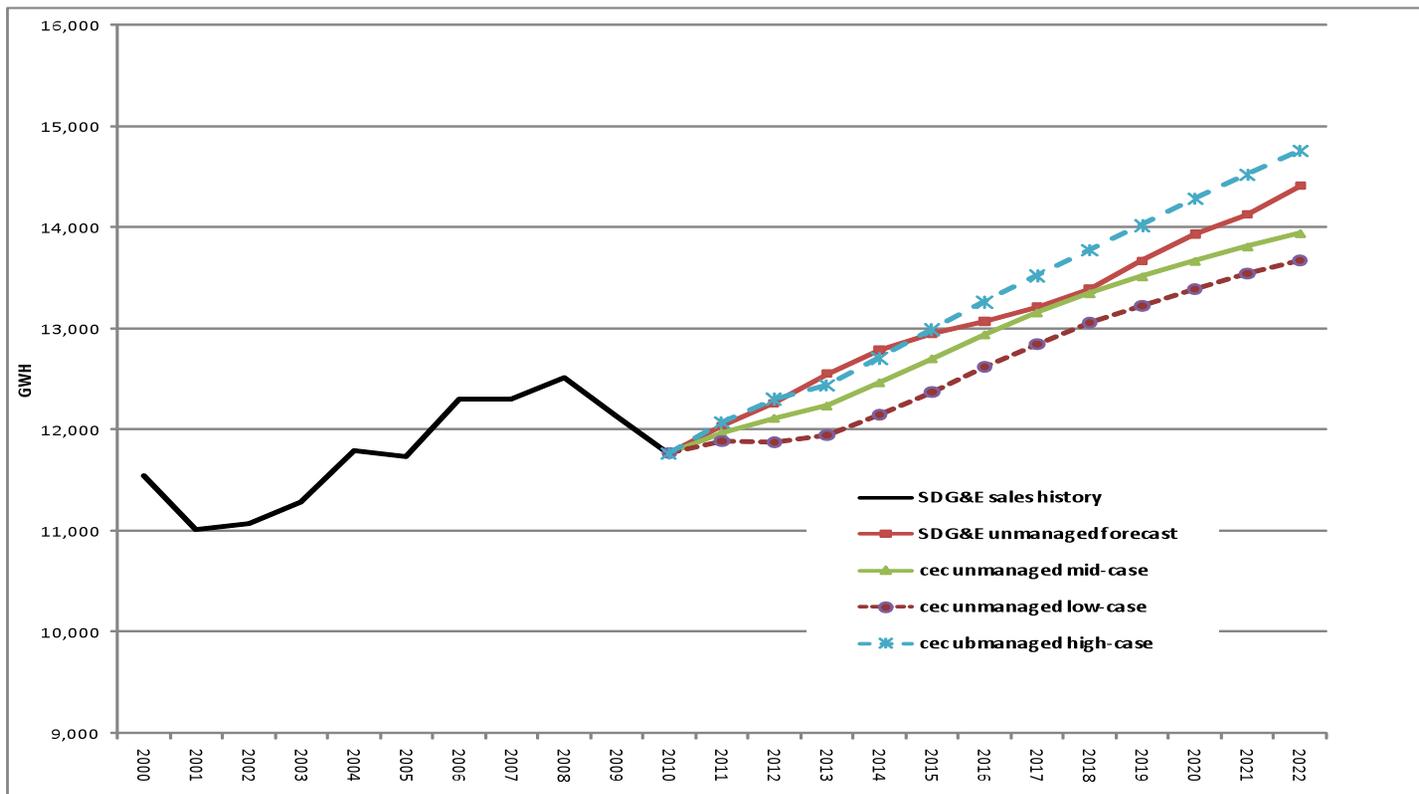
Source: California Energy Commission, 2011



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SDG&E Unmanaged Commercial/Industrial Forecast Comparison

- SDG&E projected growth between CEC mid and high case



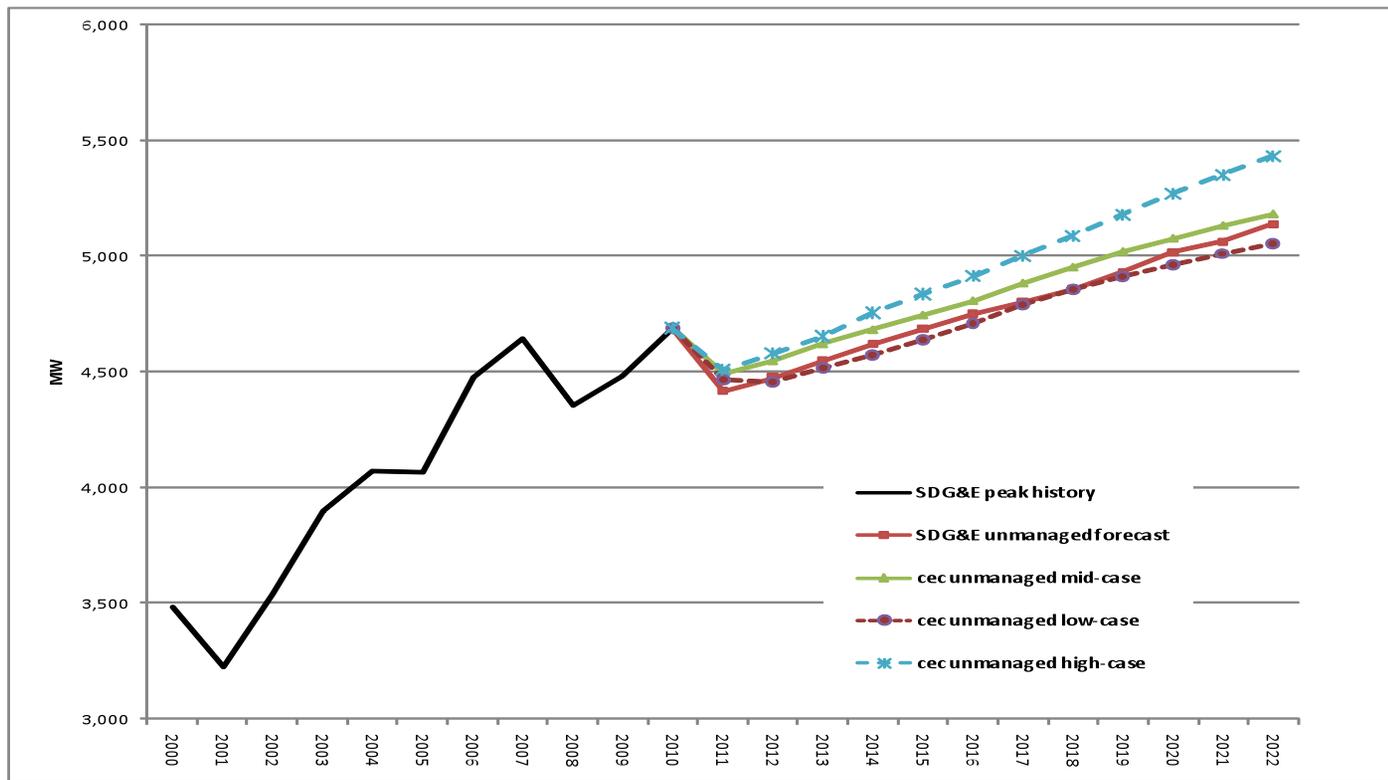
Source: California Energy Commission, 2011



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SDG&E Unmanaged Peak Forecast Comparison

- SDG&E similar to CEC low case



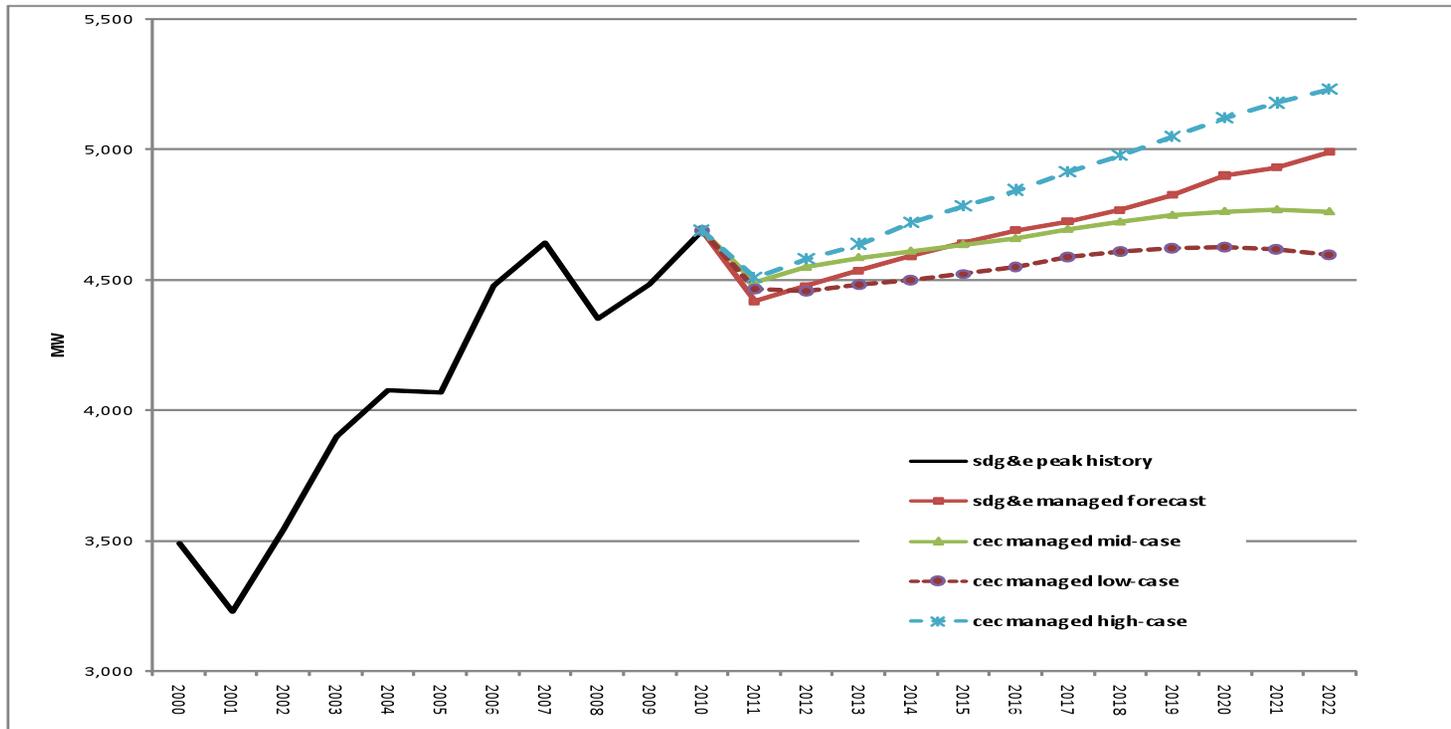
Source: California Energy Commission, 2011



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SDG&E Managed Peak Forecast Comparison

- SDG&E growth beyond 2014 only slightly higher than CEC mid case



Source: California Energy Commission, 2011