



California Energy Commission

Committee Workshop on 2010-2020 Peak Demand and Energy Forecasts

PG&E Planning Area Forecast

Hearing Room A

June 26, 2009

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PG&E Forecast Overview

- Consumption Forecast is about 4% lower in 2010 growing to between 7% and 8% lower by 2018
 - Residential -7% (2010) : -11% (2018)
 - Commercial Buildings -2% (2010) : -7% to -10% (2018)
 - Industrial Sector -6% (2010) : -1% (2018)
- Peak forecast is 3% lower in 2010 growing to between 5% and 6% lower by 2018
- Per capita consumption declines
- Per capita peak remains relatively constant
- Load factor now shows continued decline



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PG&E Planning Area Forecast Results

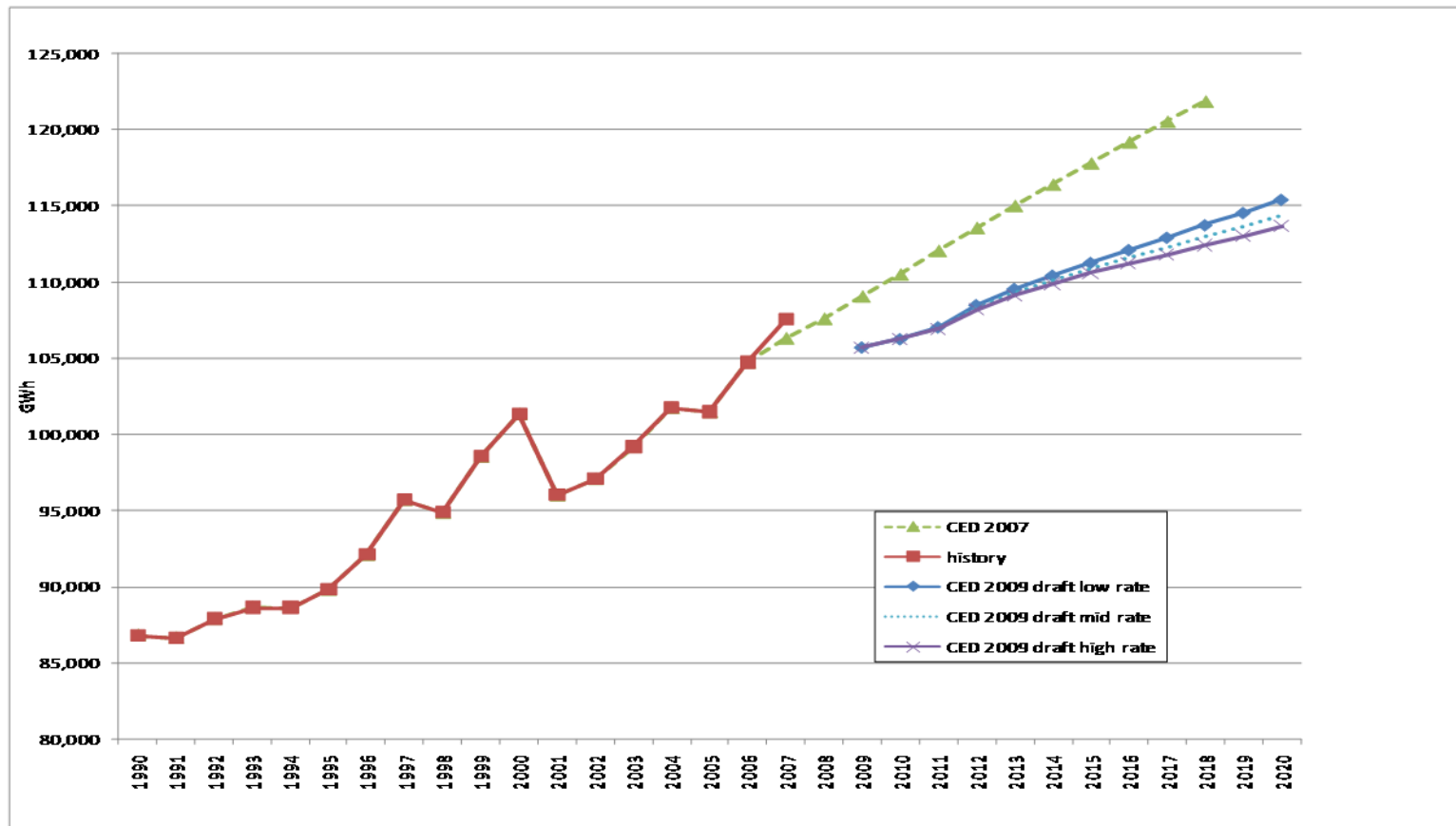
Consumption (GWH)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	86,803	86,803	86,803	0.00%	0.00%
2000	101,331	101,331	101,331	0.00%	0.00%
2007	106,311	107,529	107,529	1.15%	1.15%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



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PG&E Electricity Consumption Forecast

- lower starting point and growth

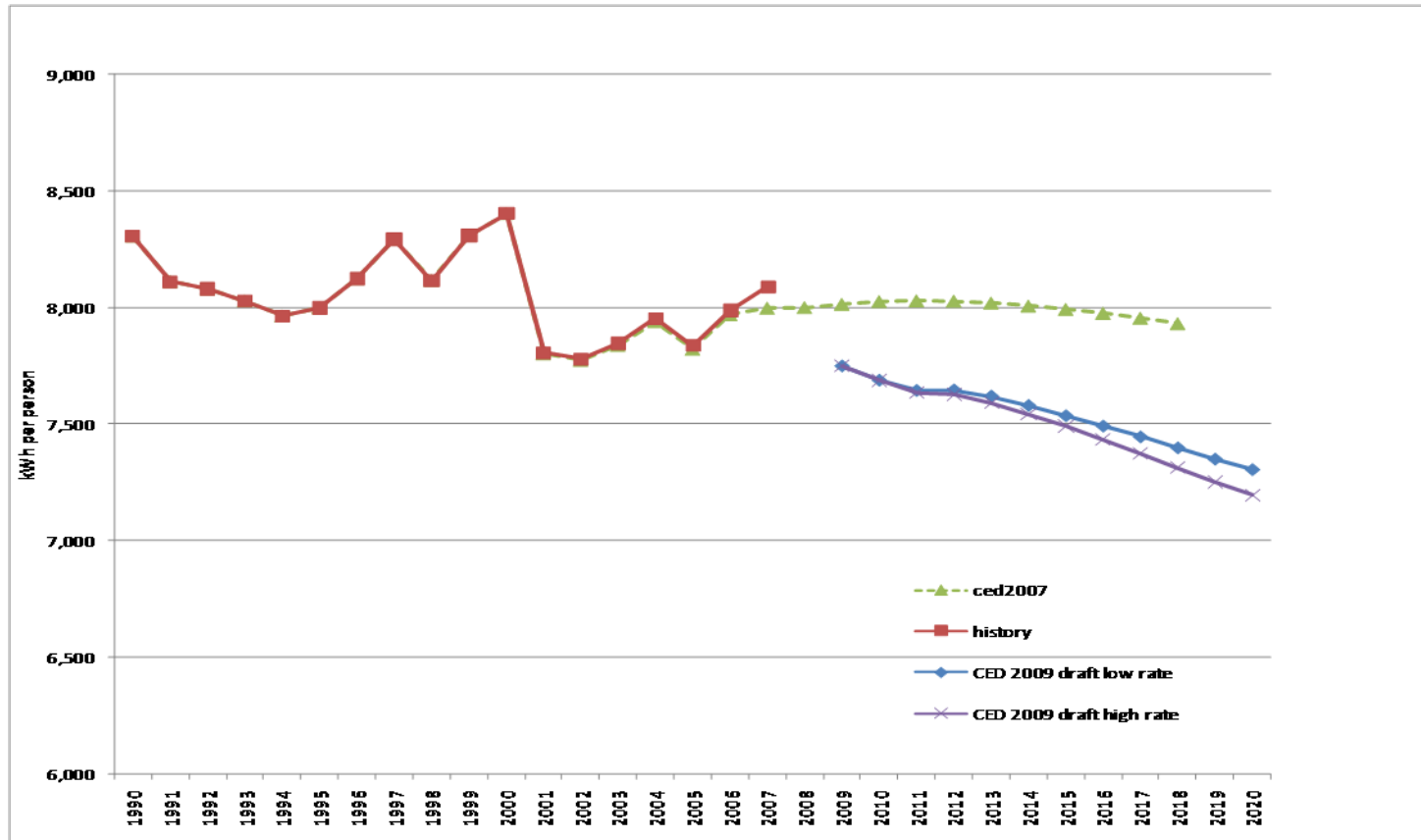




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PG&E per Capita Consumption

- projected to continue decline from historic trend

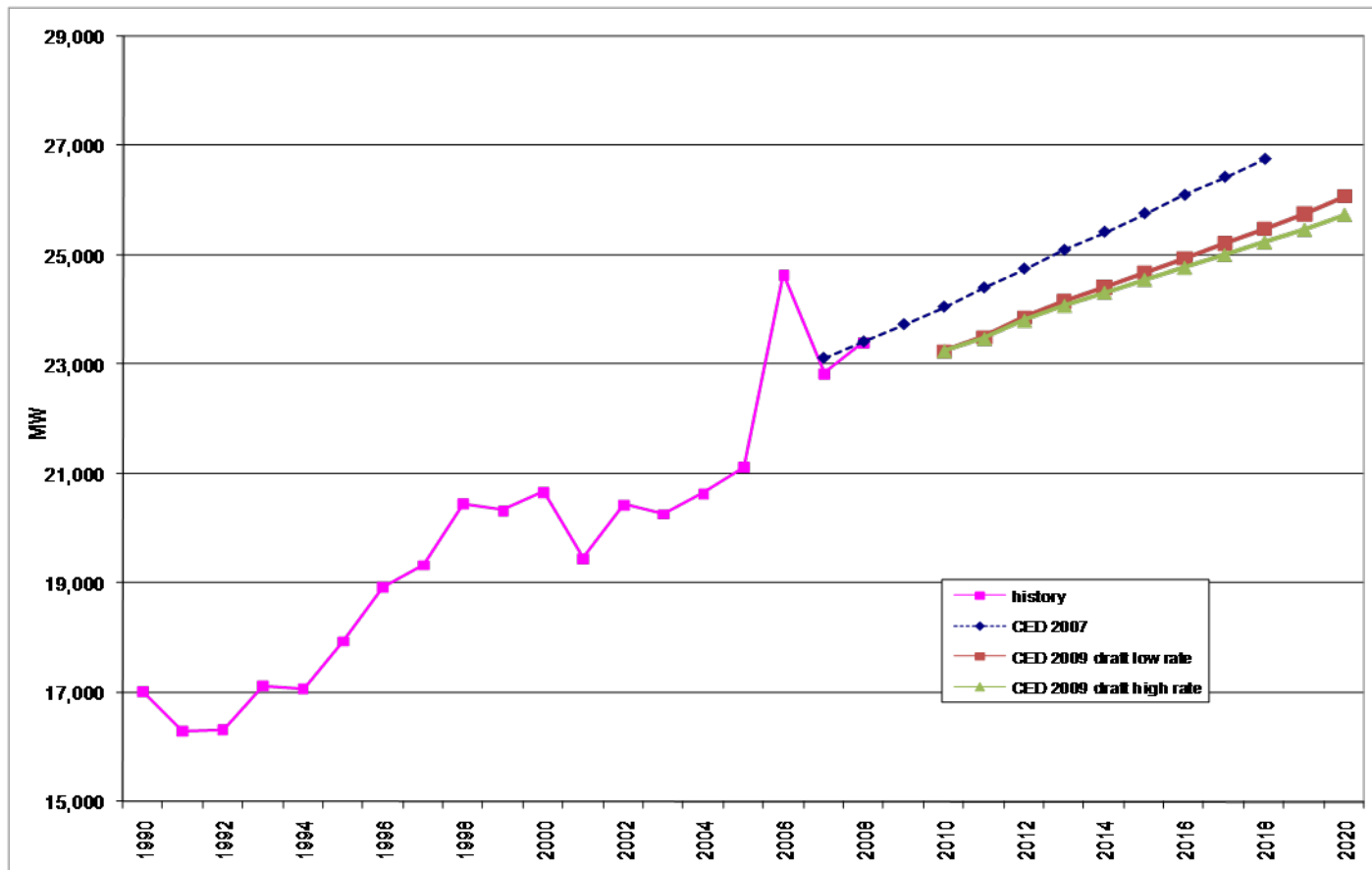




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PG&E Planning Area Peak Forecast

- Lower starting point , similar growth rate

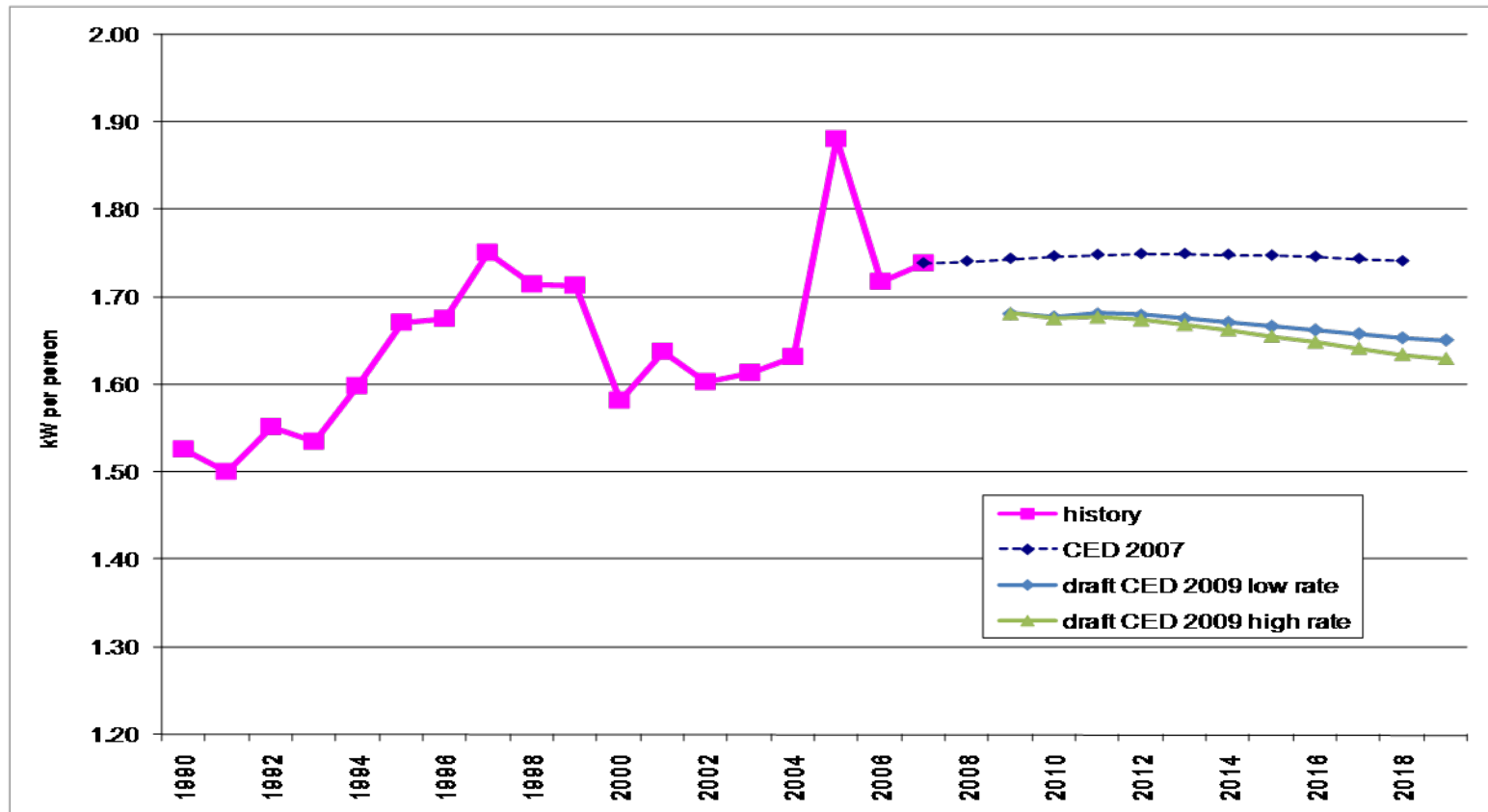




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PG&E per Capita Peak

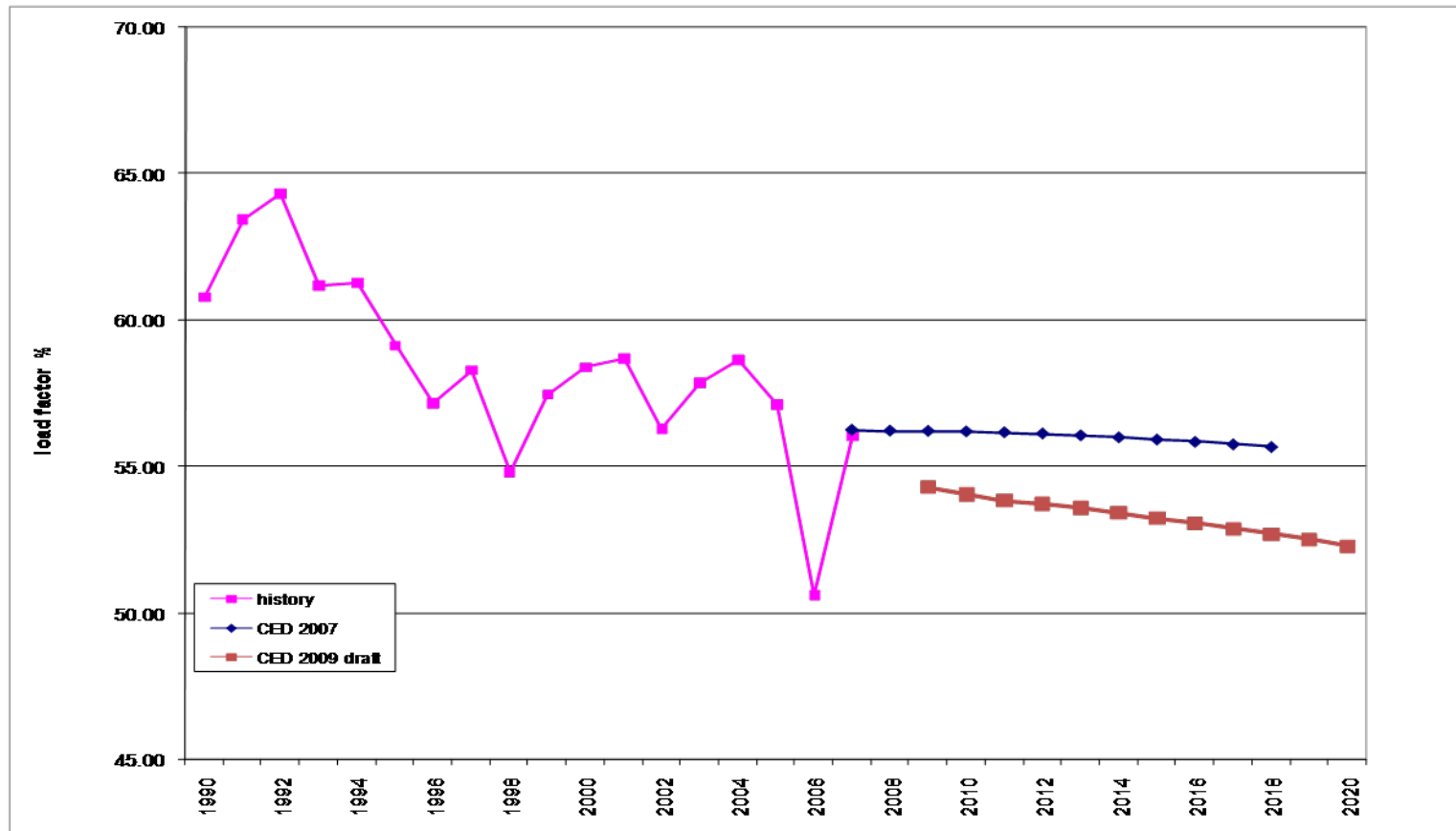
- slight decline after 2012





PG&E Planning Area Load Factor

- continues decline of the historic trend





PG&E Residential Forecast

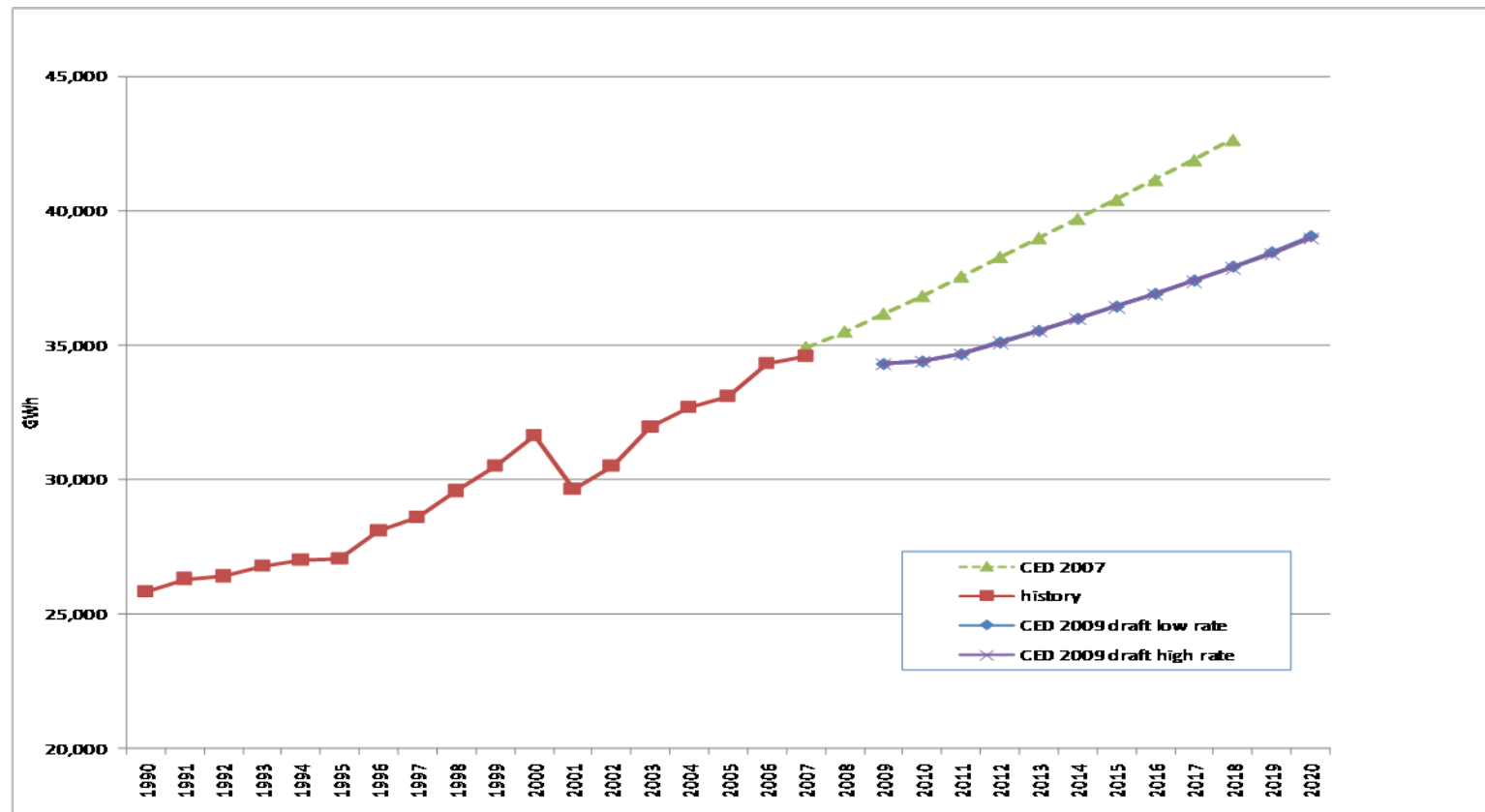
- Consumption starts from lower value, grows at lower rate
 - -6.5% (2010) : -11% (2018)
- Use per household flat
- Household income grows at lower rate after recovery
 - -5.6% (2010) : -6.3% (2018)
- Lighting savings from CFL's (as a result of currently committed DSM programs) reduces total use per household approximately 5% by 2011 and beyond from 2004 levels
- Peak grows at similar rate from lower starting value



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PG&E Residential Consumption

- lower starting point and growth

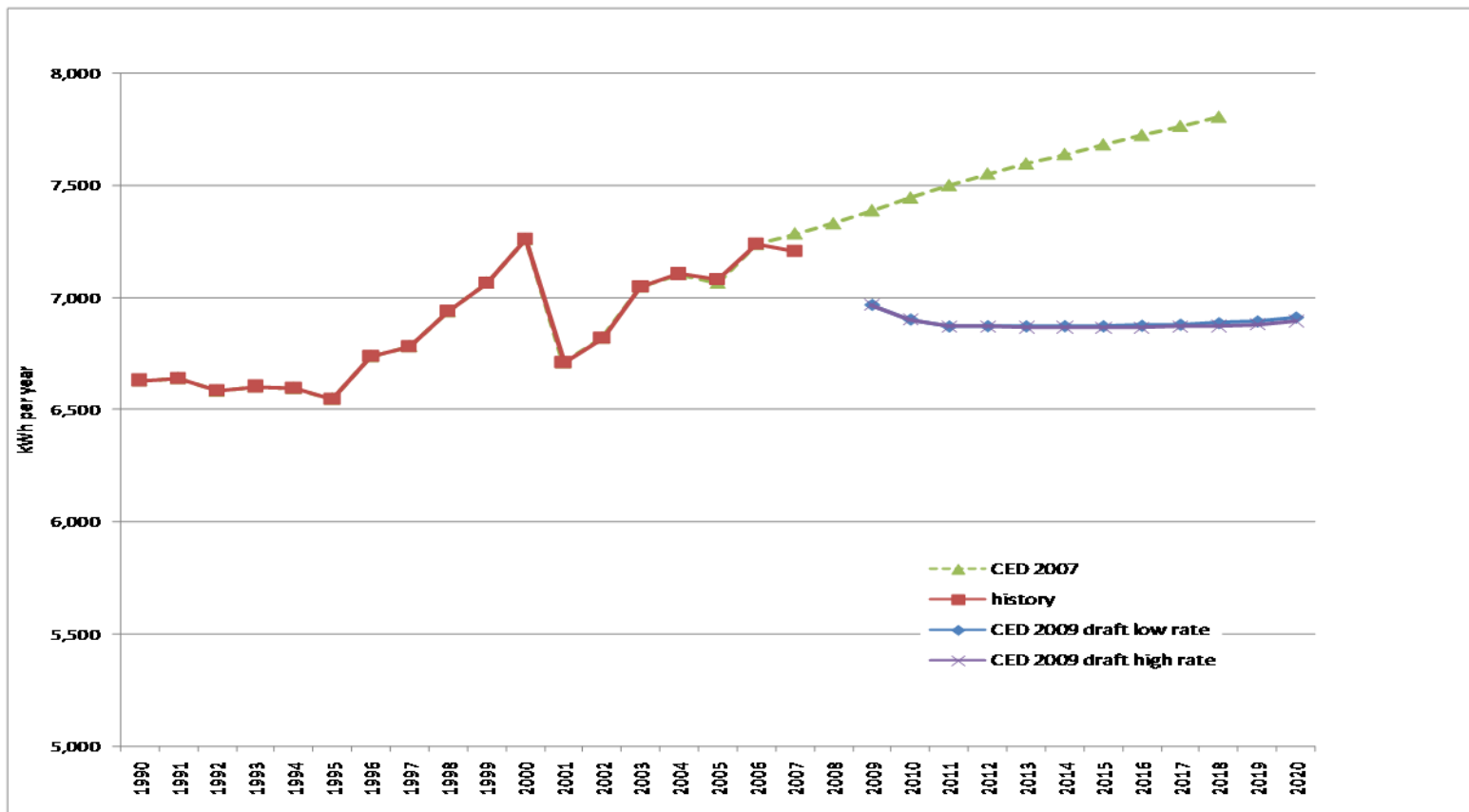




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PG&E Residential Use per Household

- short term decline to flat projection

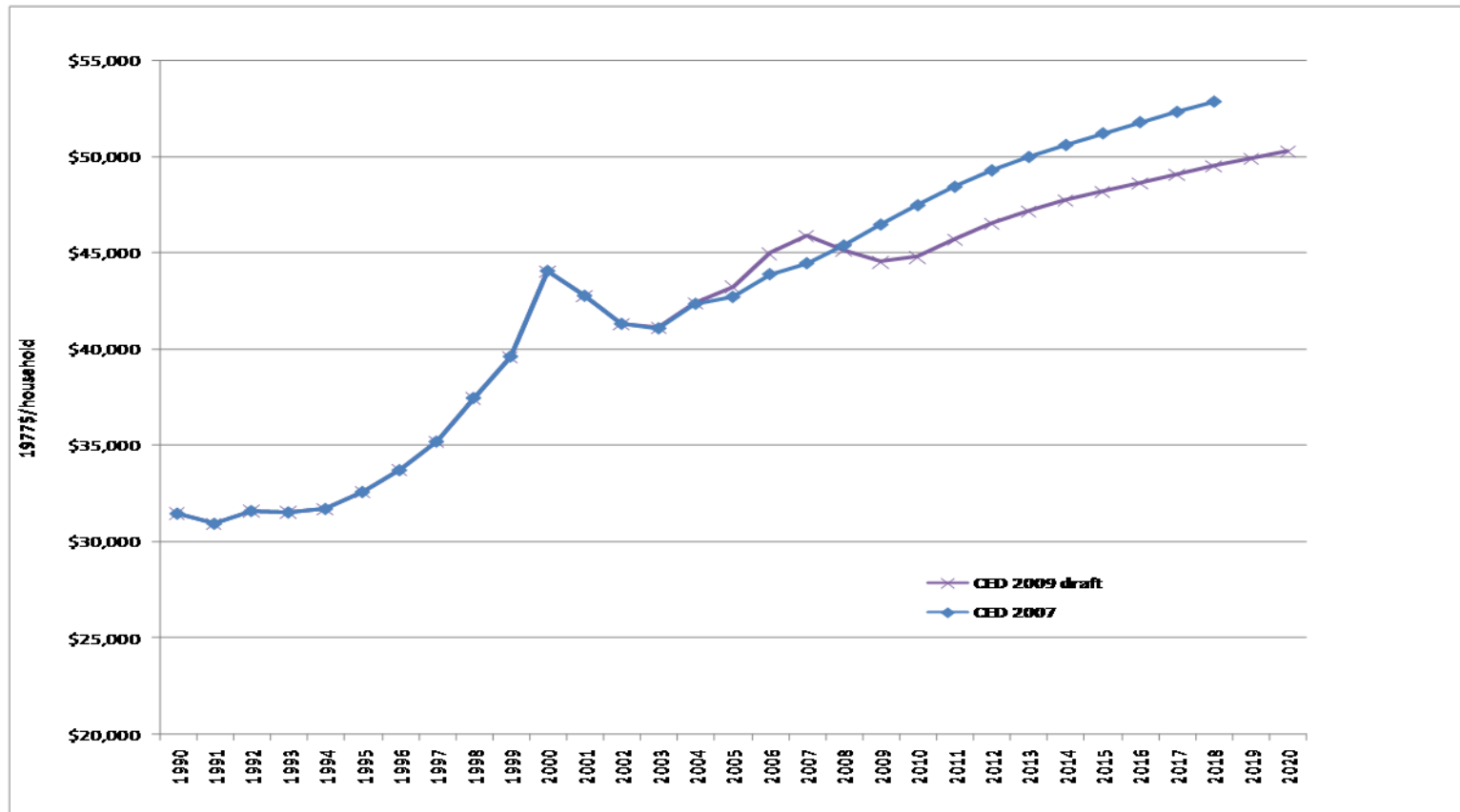




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PG&E Household Income

- slightly slower growth after recovery

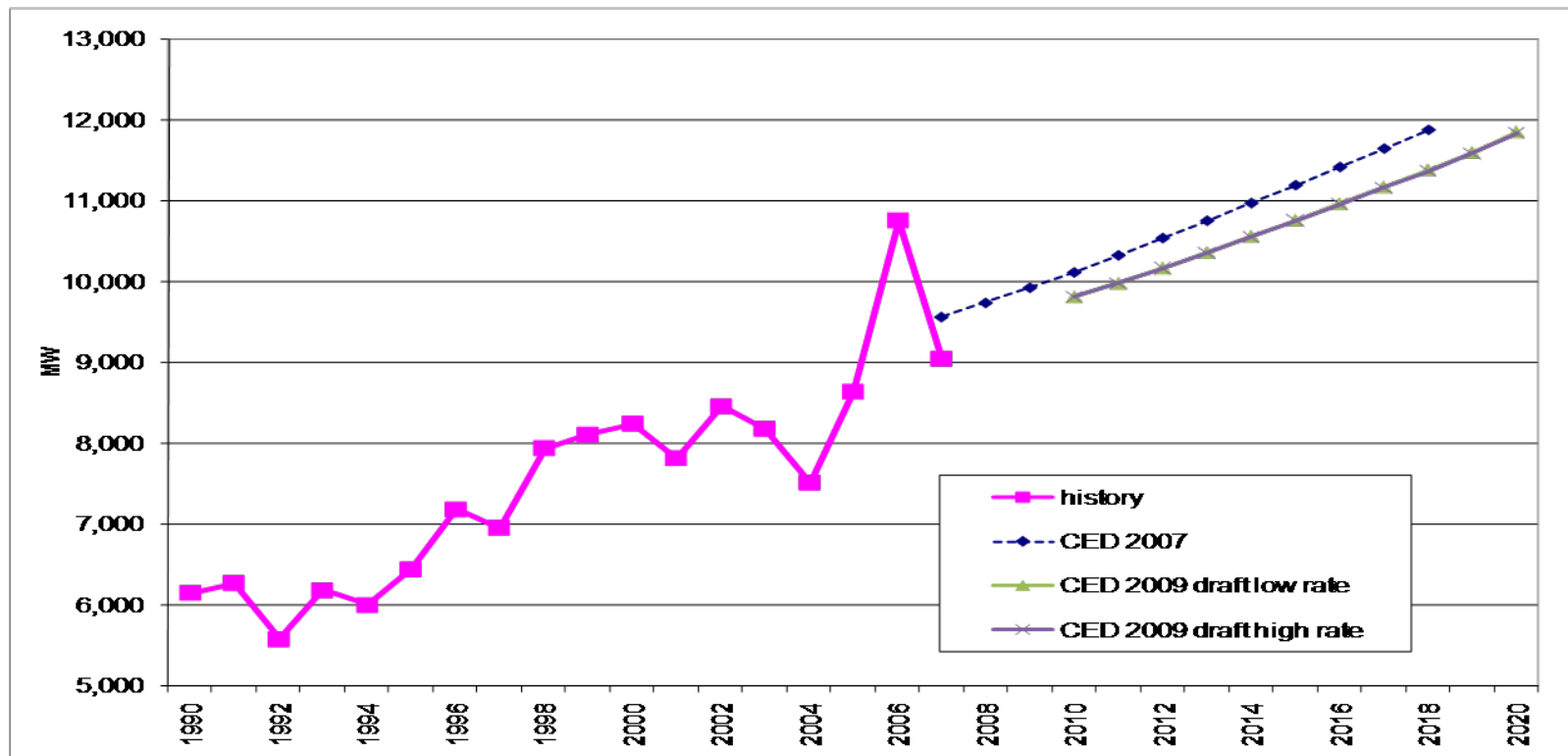




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PG&E Residential Peak

- lower starting point , similar growth

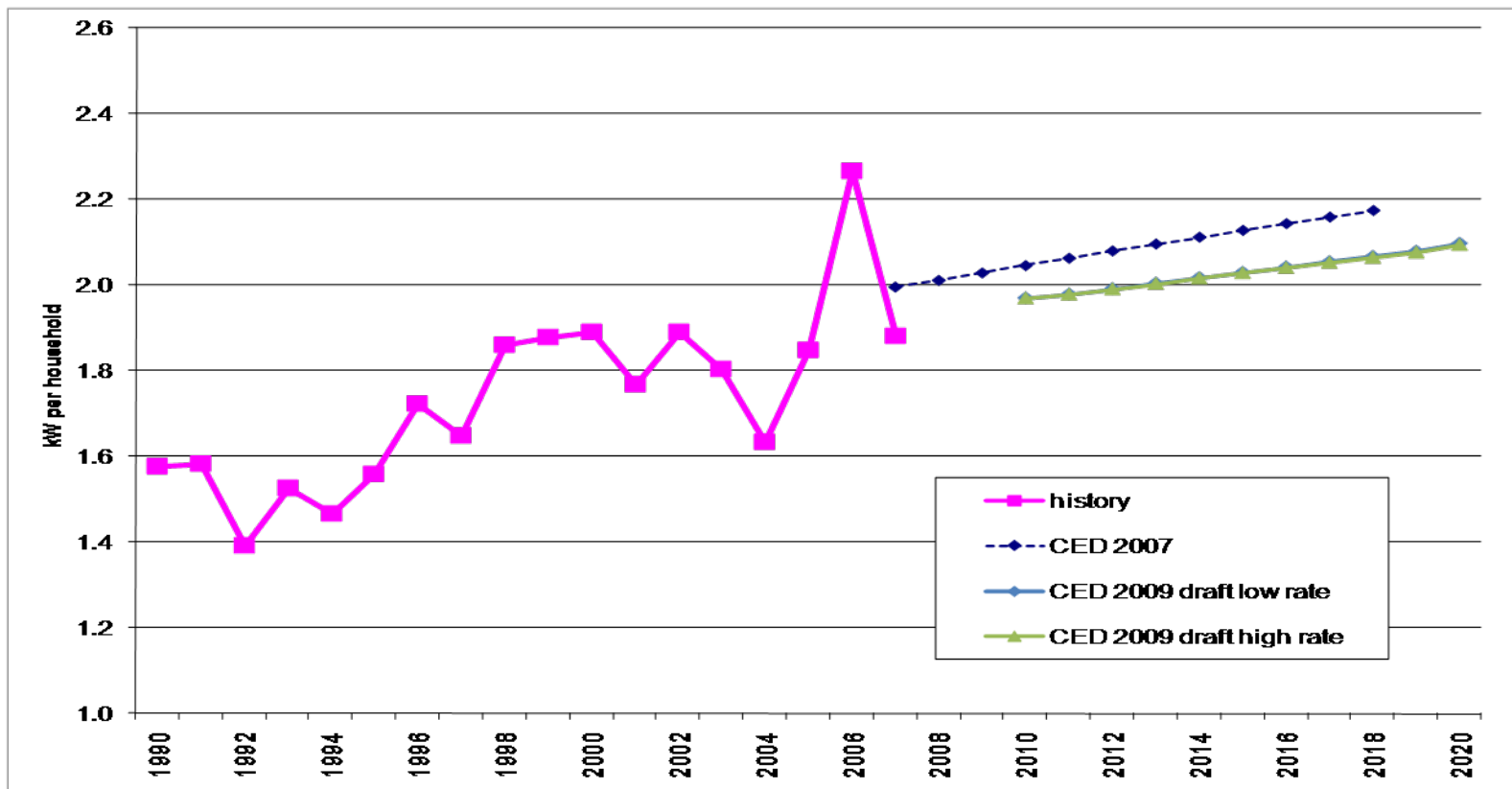




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PG&E Residential Peak Use per Household

- lower starting point and growth





PG&E Commercial Building Sector

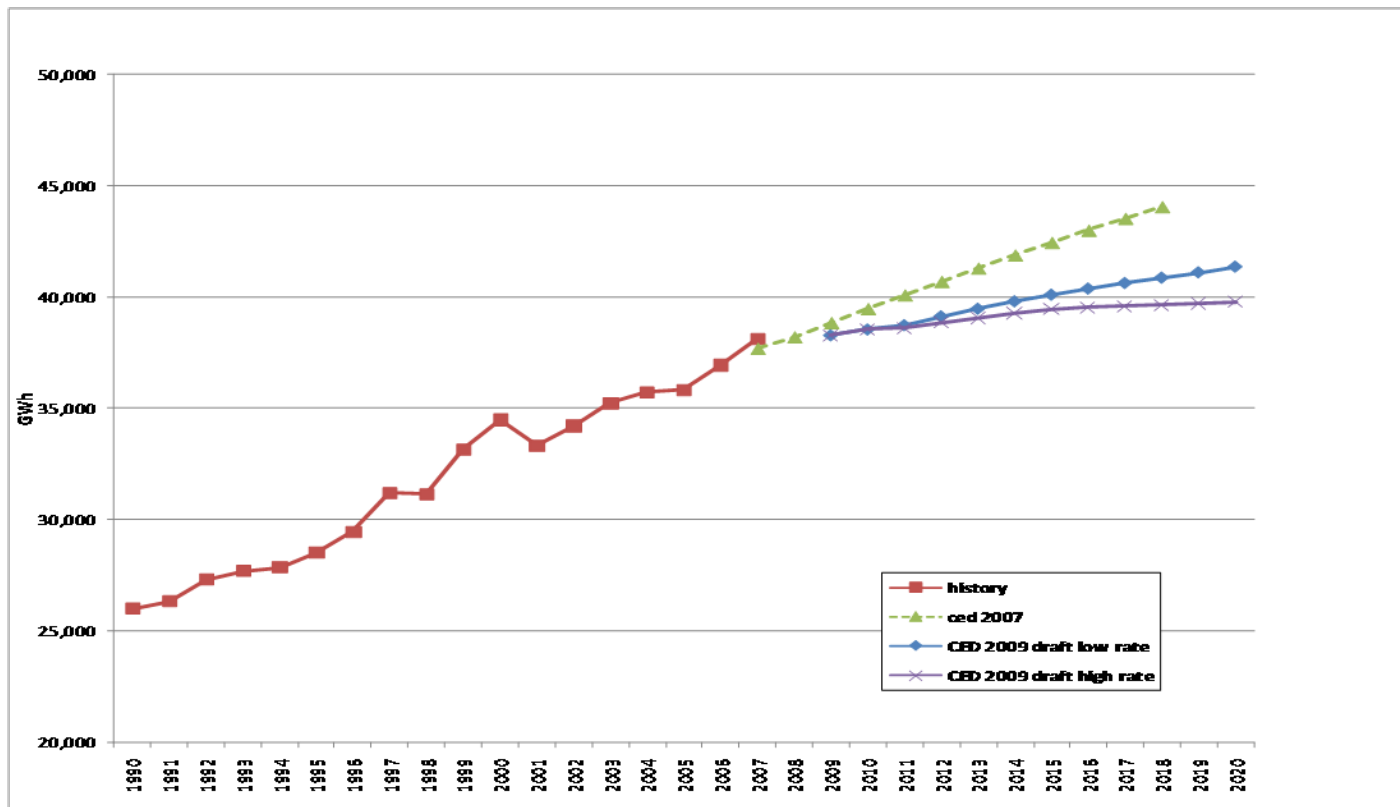
- 2% lower forecast in 2010, difference increases to between 7% (low rate) and 10% (high rate) by 2018
- Less overall projected floor space -4% (2018)
- Increased compliance (75%) with 2005 lighting standards reduces consumption 4% by end of forecast
- Use per square foot declines
- Peak results mirror consumption forecast



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PG&E Commercial Building Consumption

- Lower starting point and growth

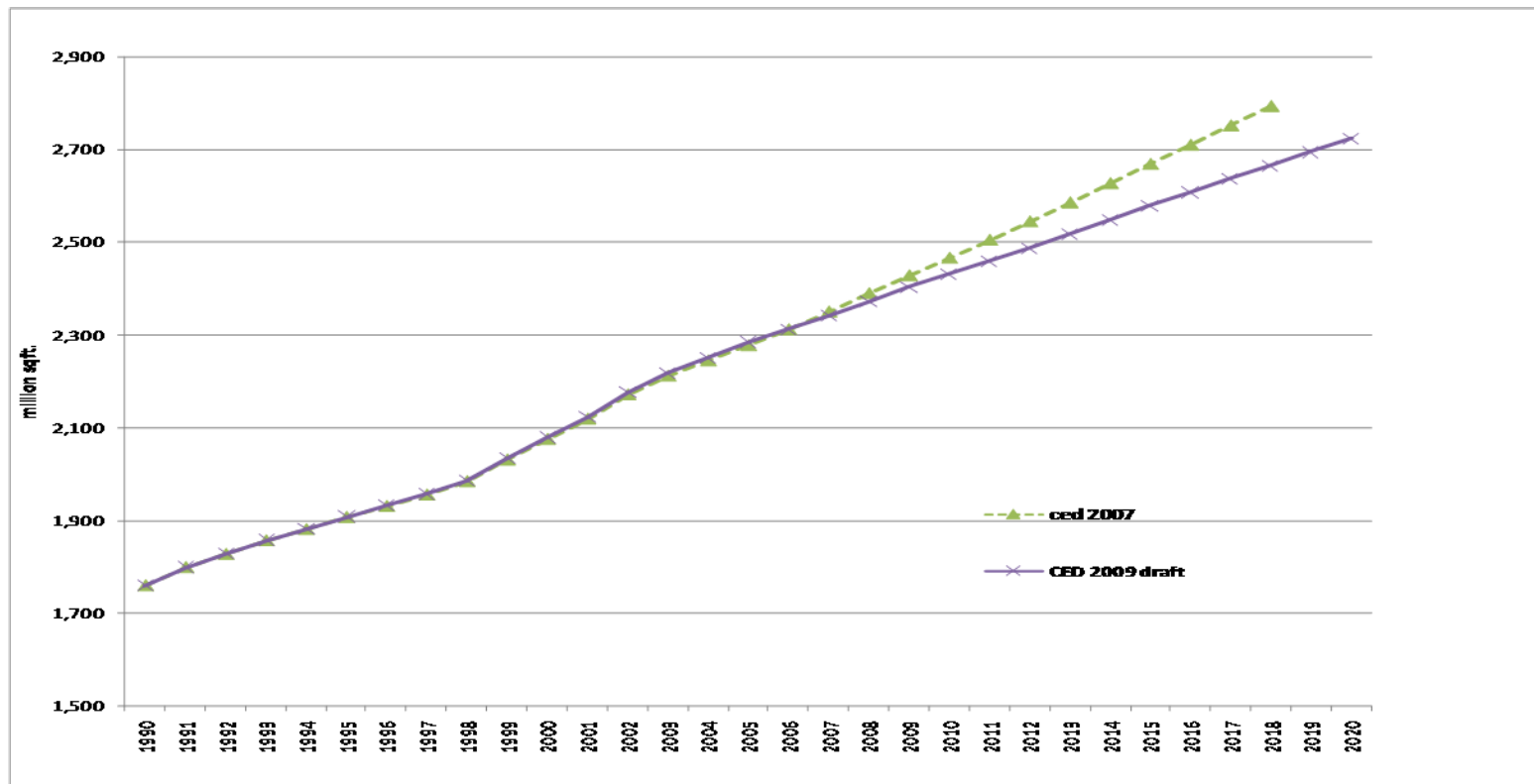




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PG&E Commercial Floor Space

- Lower growth over forecast period

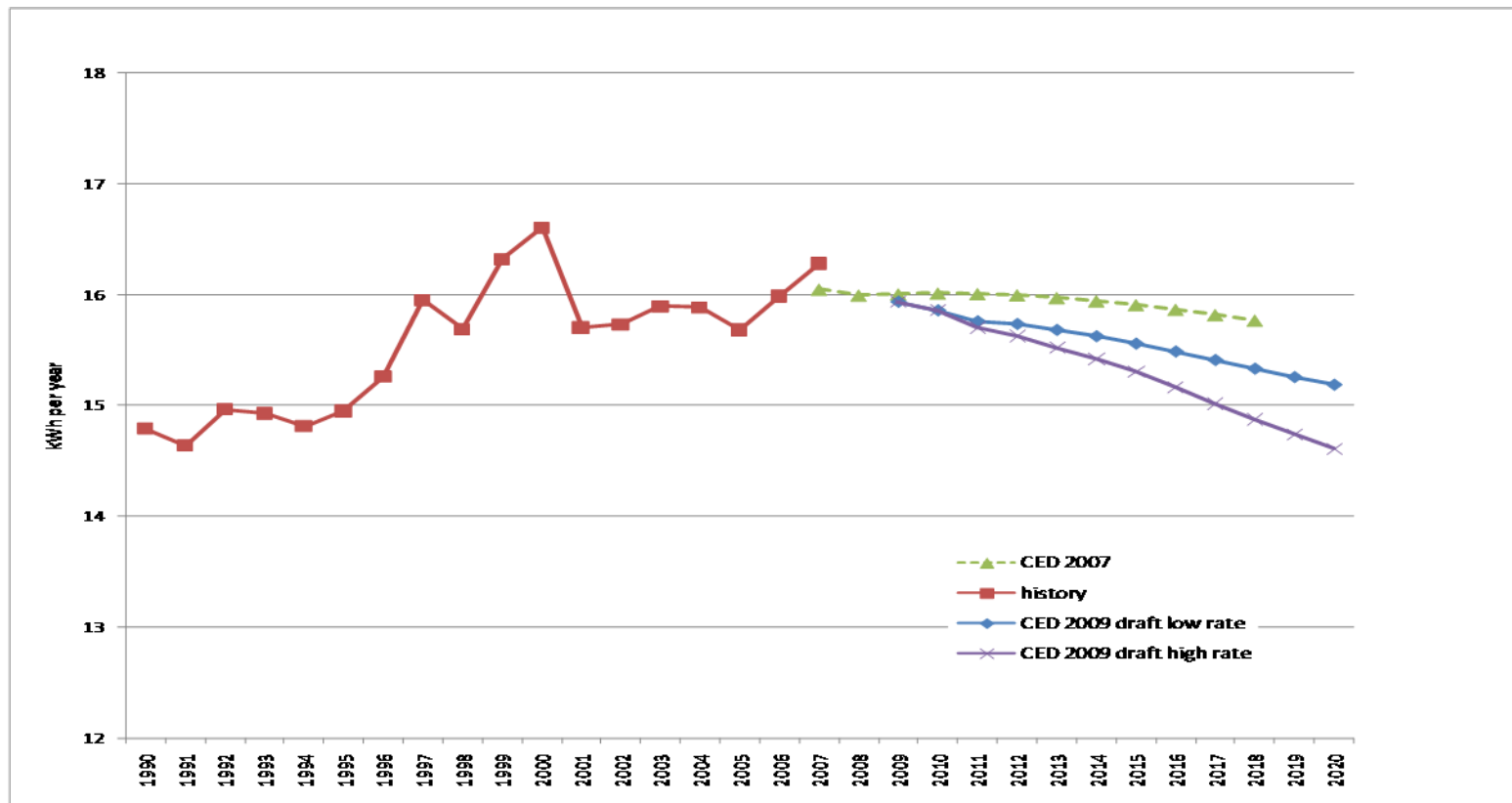




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PG&E Commercial kWh per Square Foot

- declines over forecast period to early 90's levels

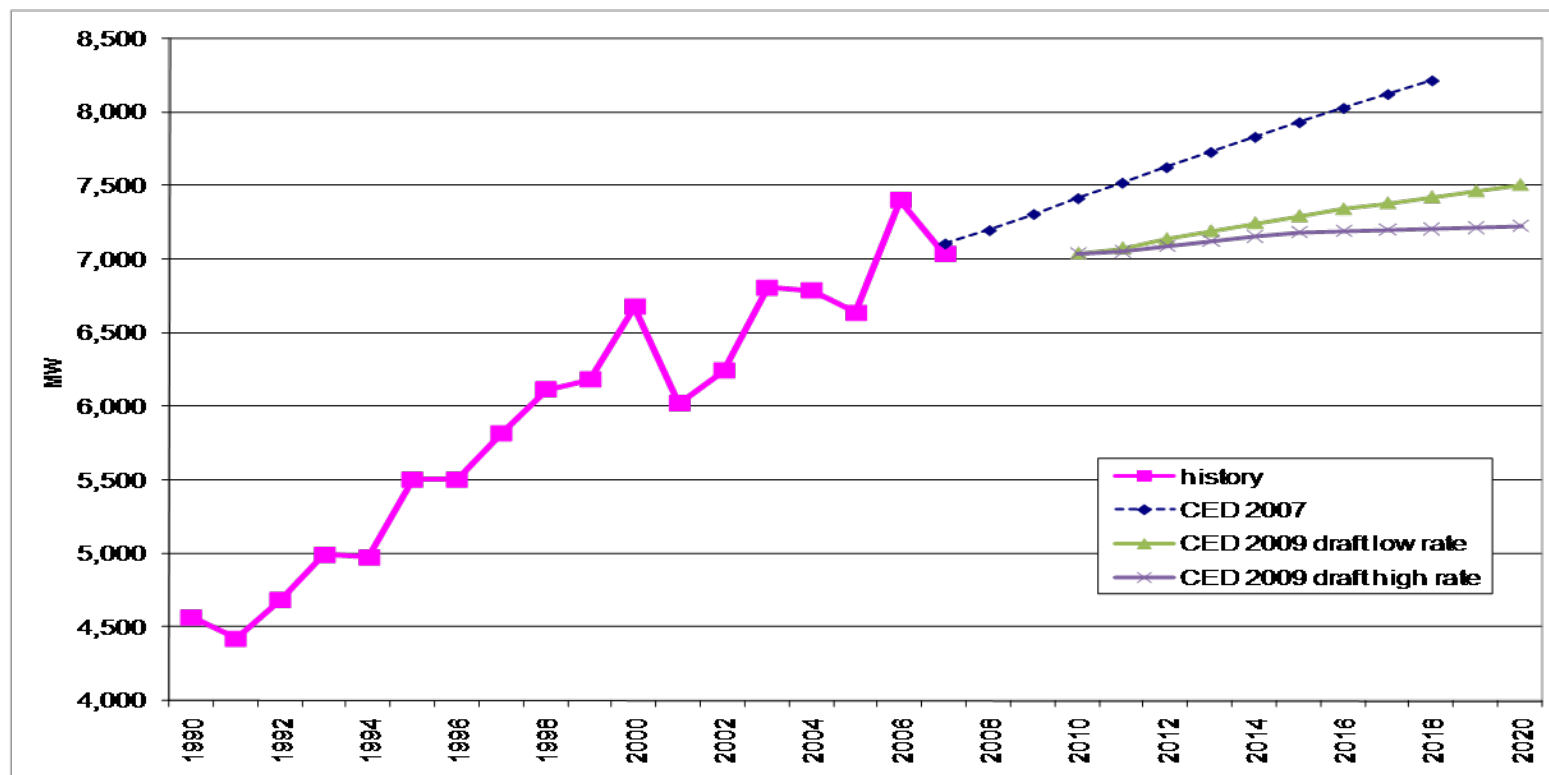




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PG&E Commercial Building Sector Peak

- mirrors consumption forecast result

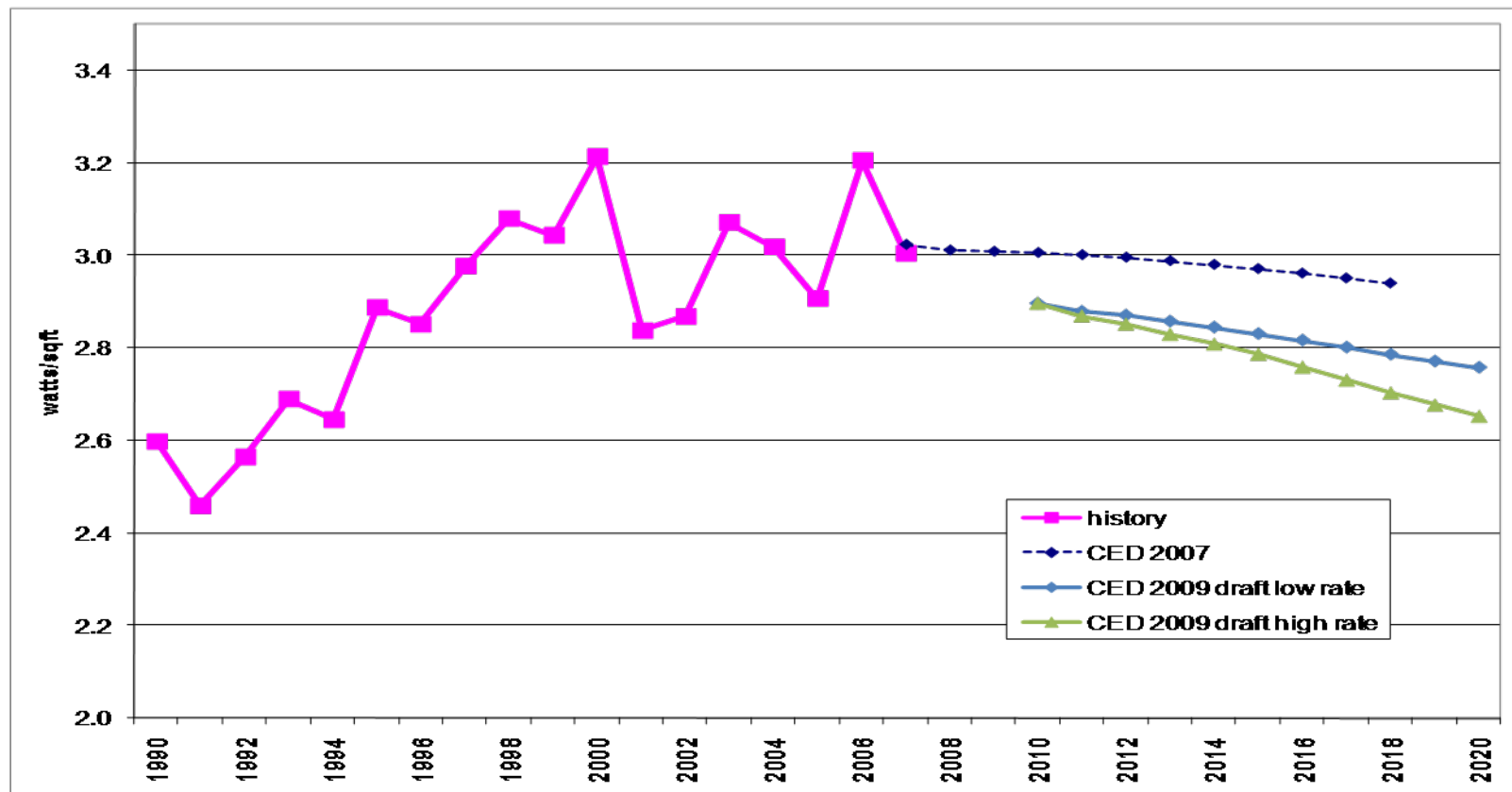




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PG&E Commercial Peak per Square Foot

- mirrors consumption forecast result





PG&E Industrial Sector

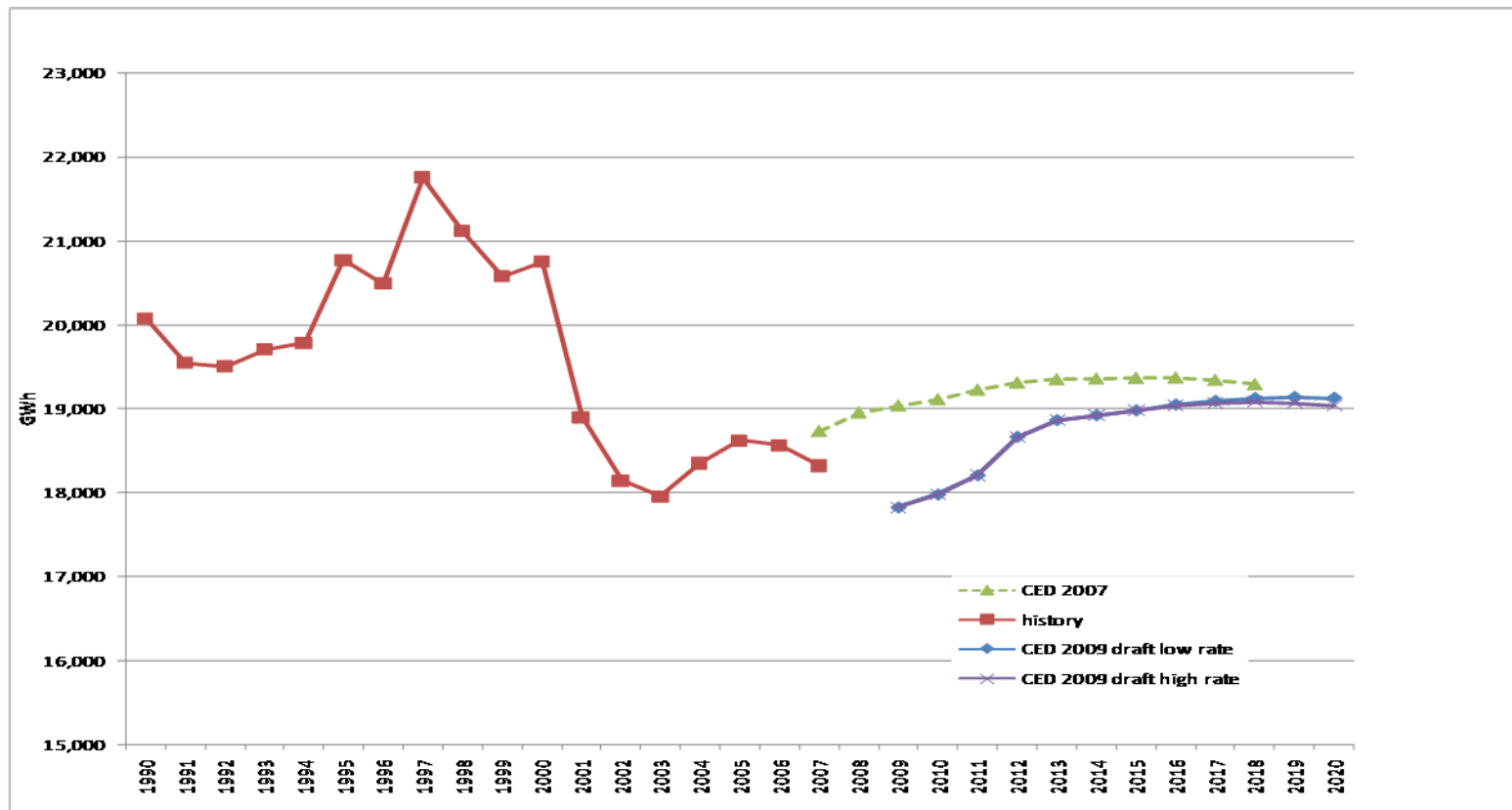
- Lower short term forecast -6% (2010)
- More rapid recovery than other sectors
- Peak forecast higher



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PG&E Industrial Sector Consumption

- lower starting point , greater recovery

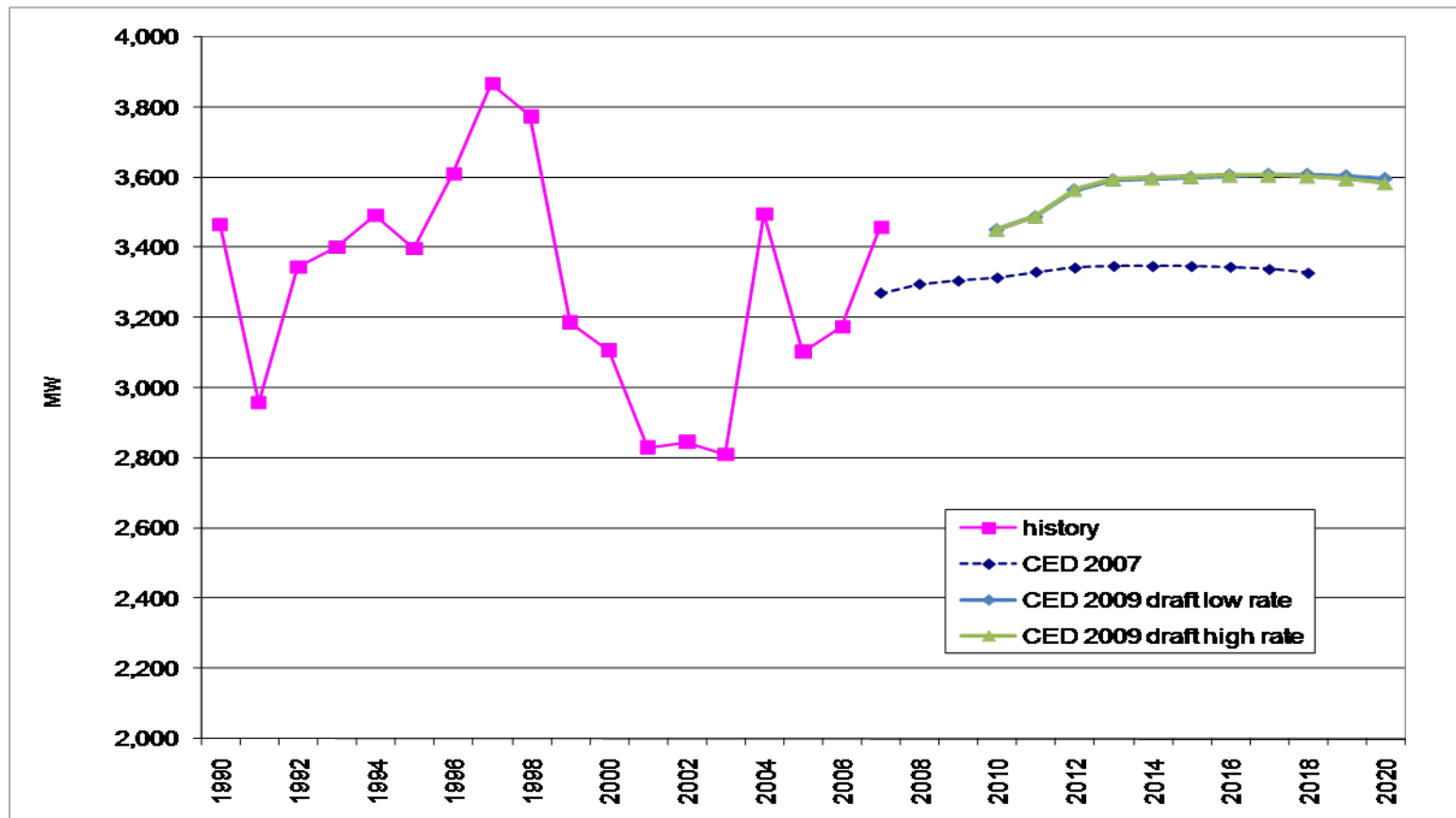




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PG&E Industrial Sector Peak

- higher forecast caused by starting value





PG&E Other Sectors

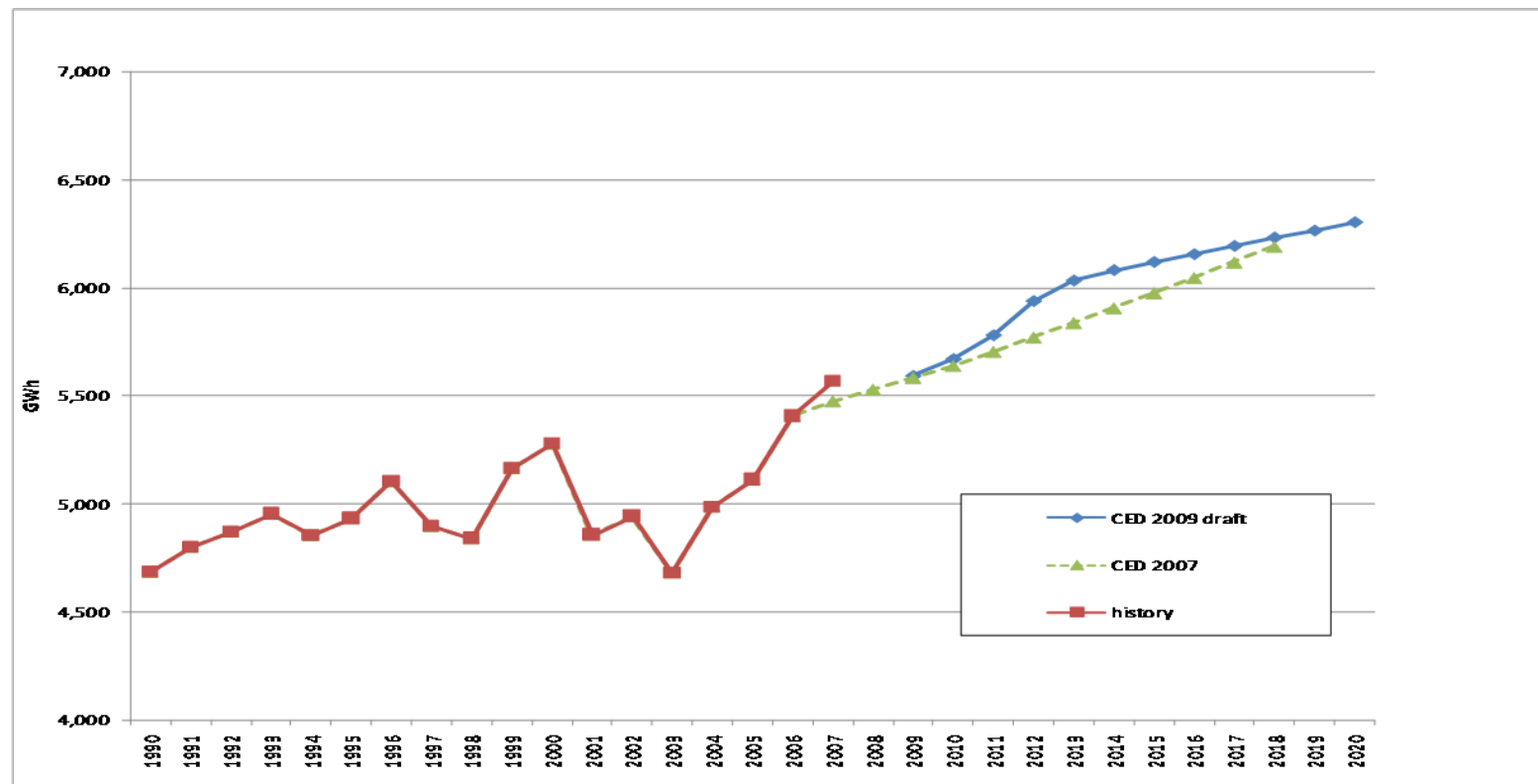
- Remaining sectors comprise 15% of total consumption:
 - 5% Transportation, communications and utilities (lower starting point)
 - 6% Agriculture and Water Pumping
 - 3% Mining, Oil Extraction and Construction
 - 1% Streetlighting
- Other sectors comprise only 4% of peak.



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PG&E Transportation, Communications and Utilities Sector Consumption

- higher mid term, flatter long term

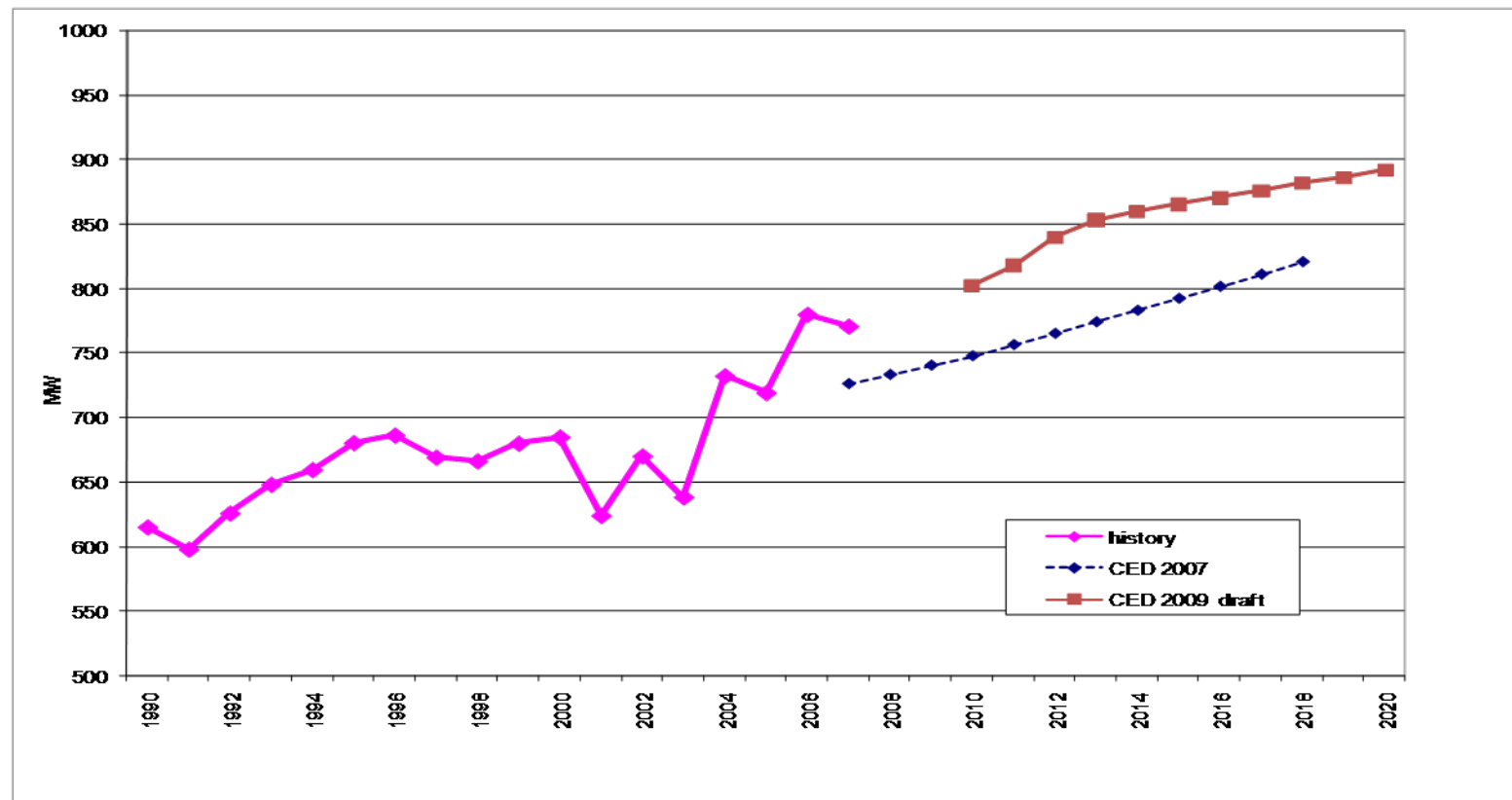




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PG&E Other Sectors Peak

- higher starting point , flatter long term growth





Efficiency Savings and Self Generation

- Efficiency savings are presented by program
- 2009-2011 utility program estimates are based on current CPUC filings
- Self generation forecast is based on recent installation patterns
- Some irregularities in historic reporting of peak results



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PG&E Savings Estimates by Program Category

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

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.



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PG&E Peak Savings Estimates by Program Category

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

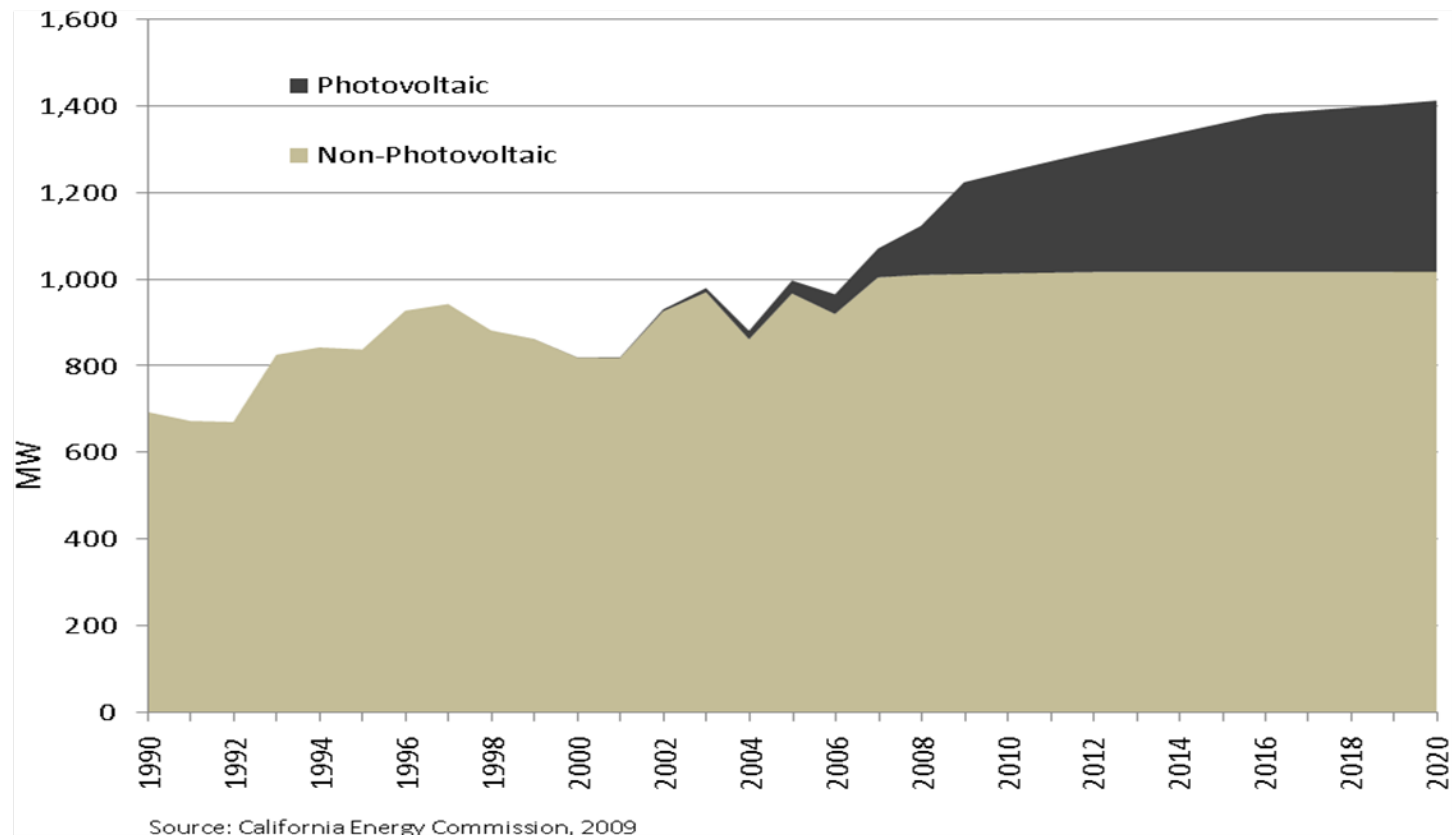
Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings



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PG&E Self Generation Peak Estimates





Comparison to PG&E Forecast

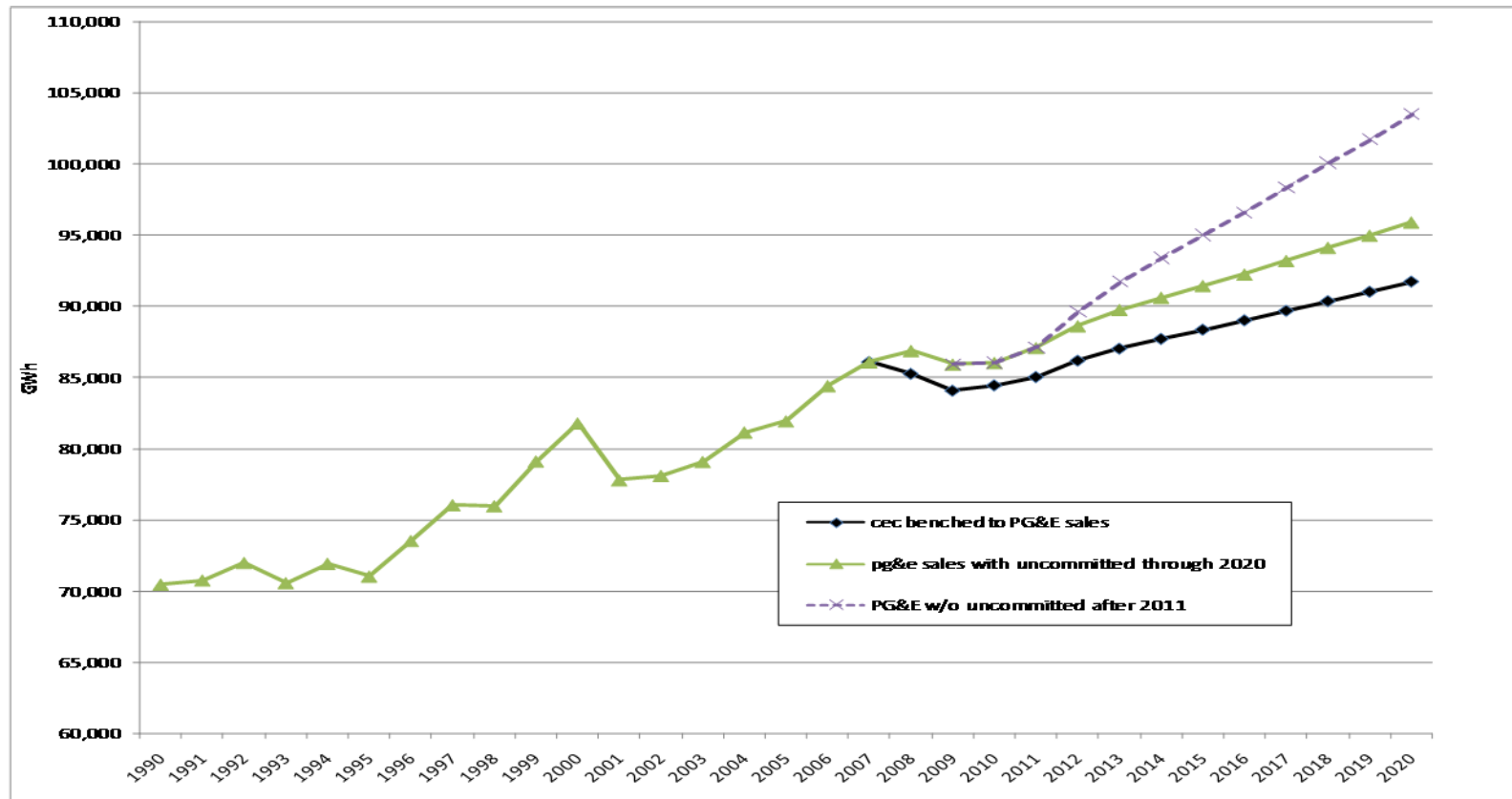
- PG&E sales are 1.8% higher in 2010 than CEC forecast
- PG&E managed (including uncommitted efficiency) sales forecast is 3.4% higher by 2015 and 4.4% by 2020
- PG&E unmanaged (excluding uncommitted efficiency after 2011) sales is 7% higher by 2015 and 11% higher by 2020
- Major differences are in short term commercial and total industrial growth
- PG&E managed peak is 4% higher in 2015 and 5% higher in 2020
- PG&E unmanaged peak is 9% higher in 2015 and 15% higher in 2020
- Unmanaged peak grows faster than recent history (1990-2007)



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PG&E Forecast Comparison

- much higher growth in unmanaged forecast

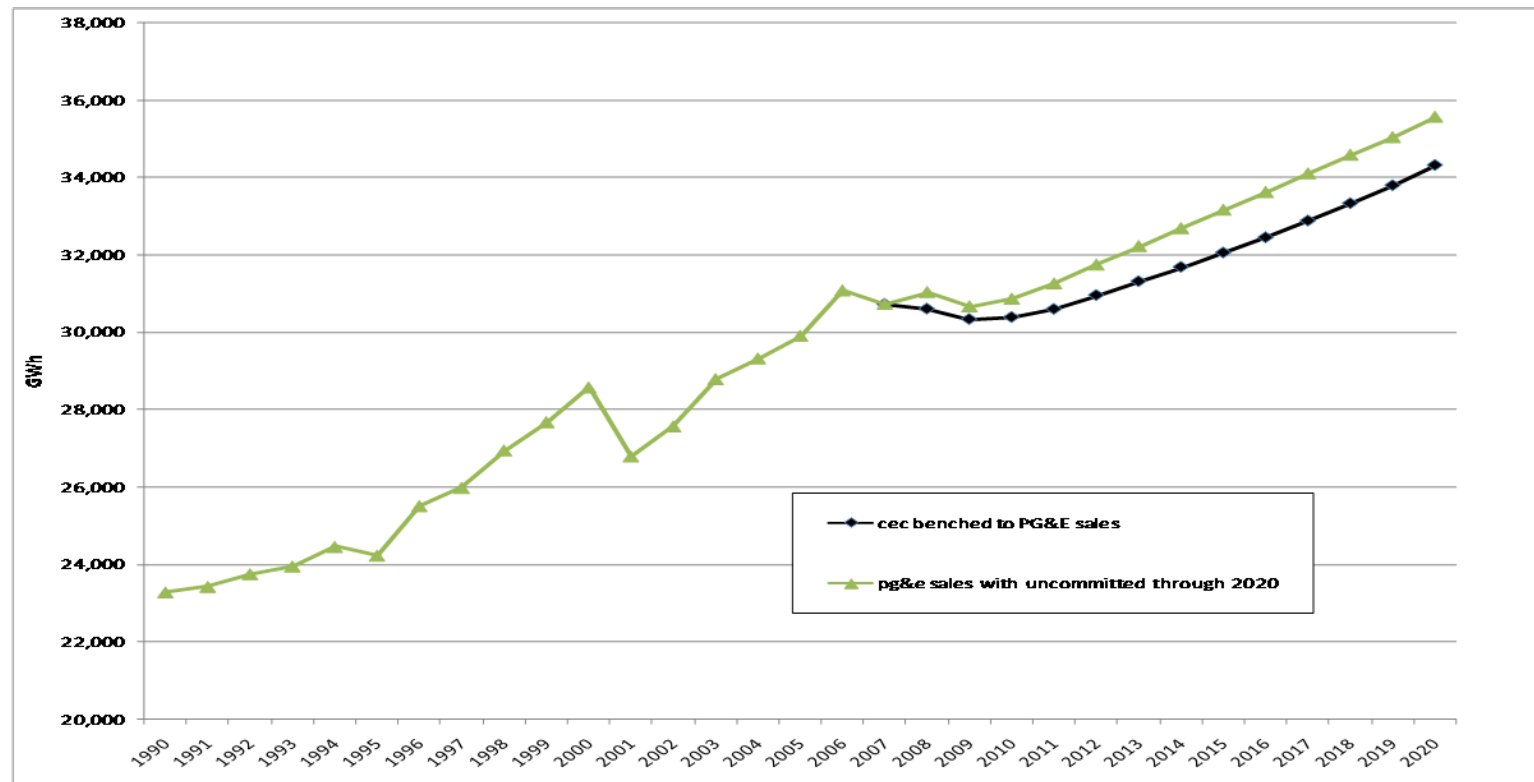




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PG&E Residential Forecast Comparison

- similar growth if adjusted for 2008 difference

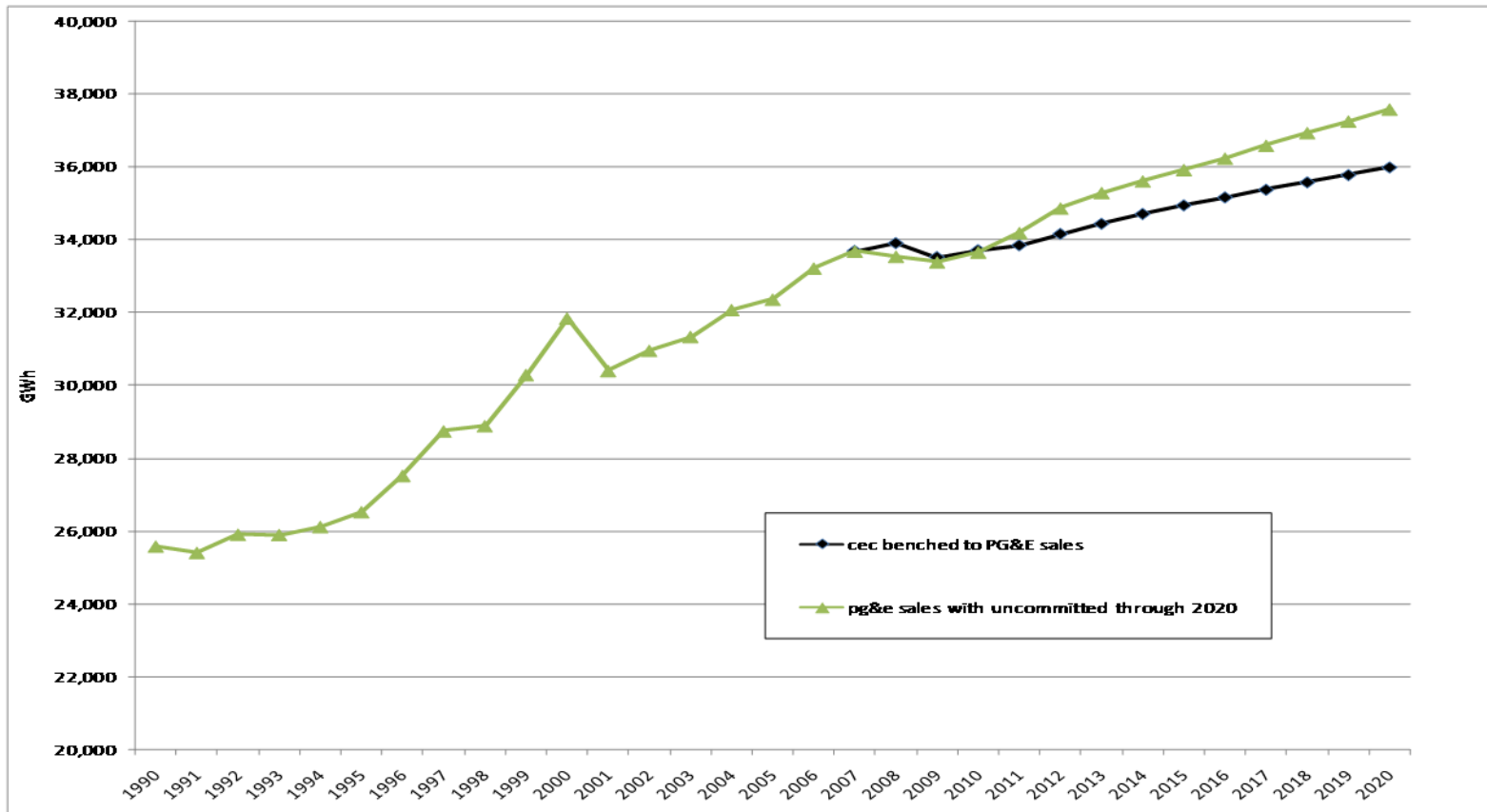




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PG&E Commercial Forecast Comparison

- PG&E has higher short term growth

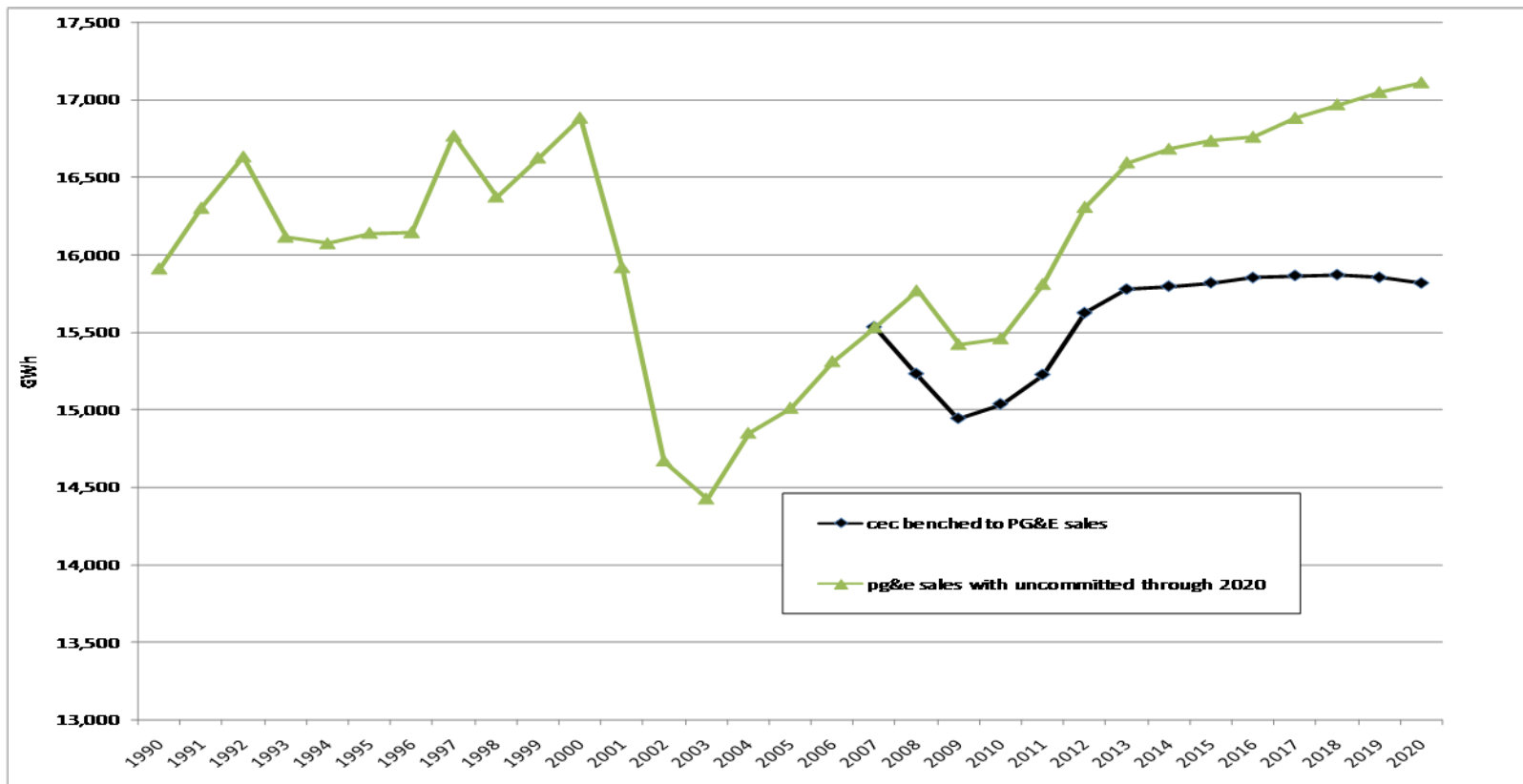




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PG&E Industrial Forecast Comparison

- PG&E has greater energy recovery from recession





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PG&E Peak Forecast Comparison

- unmanaged peak grows faster than historic period

