California Energy Commission

Committee Workshop on 2010-2020 Peak Demand and Energy Forecasts

SCE Planning Area Forecast

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SCE Forecast Overview

- 2010 consumption forecast is 9.5% lower growing to over 12% lower by 2018
  - Residential -11% (2010) : -17% (2018)
  - Commercial Buildings -11% (2010) : -15% (2018)
  - Industrial Sector -6% (2010) : -3% (2018)
- 2010 Peak forecast is 5% lower growing to over 6% lower by 2018
- Per capita consumption and peak now decline
- Load factor continues recent decline

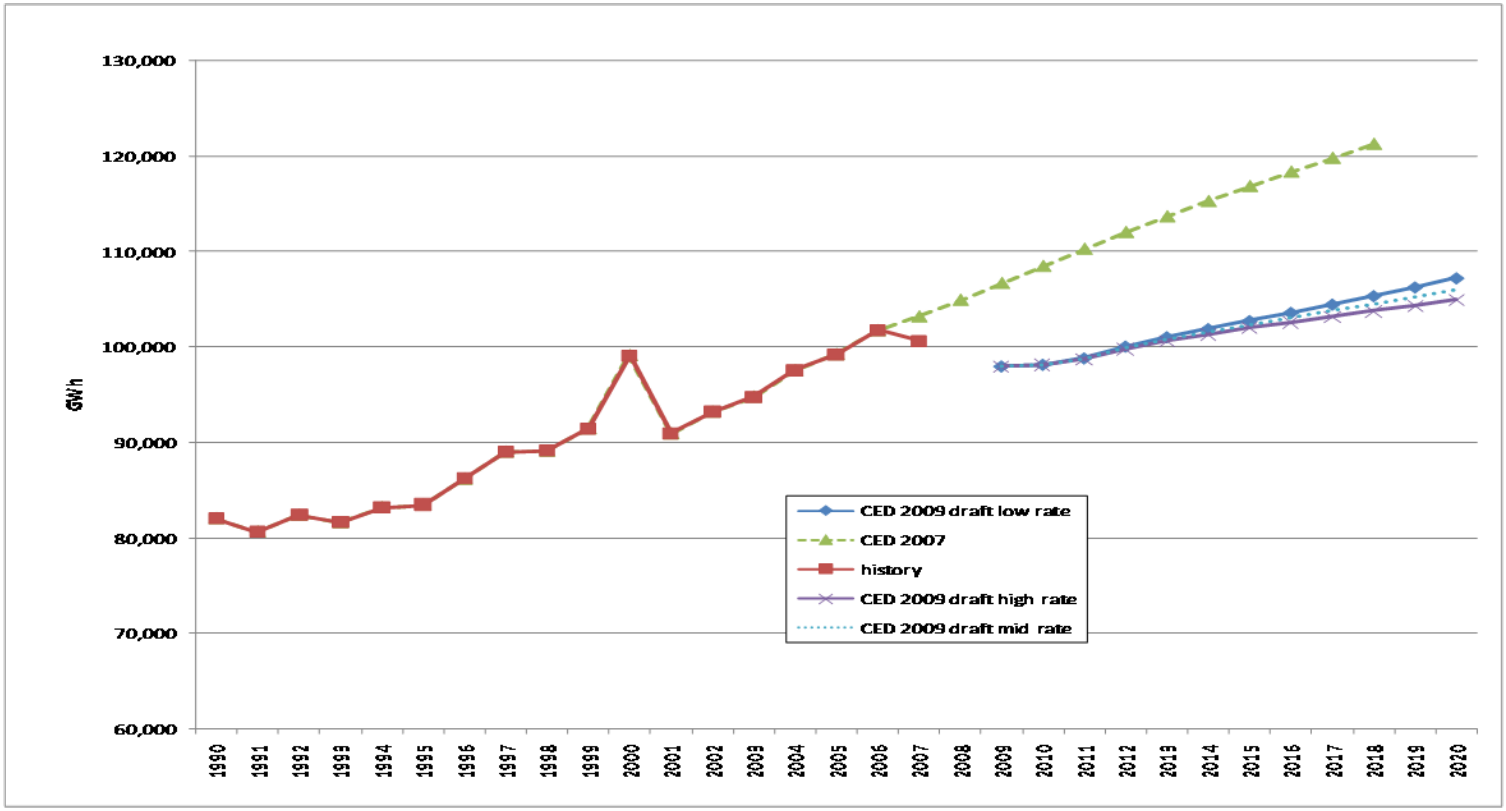
SCE Planning Area Forecast Results

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	82,069	82,069	82,069	0.00%	0.00%
2000	99,146	99,146	99,146	0.00%	0.00%
2007	103,214	100,636	100,636	-2.50%	-2.50%
2010	108,503	98,190	98,190	-9.50%	-9.50%
2015	116,872	102,761	102,040	-12.07%	-12.69%
2018	121,298	105,372	103,768	-13.13%	-14.45%
Average Annual Growth Rates					
1990-2000	1.91%	1.91%	1.91%		
2000-2007	0.58%	0.30%	0.30%		
2007-2010	1.68%	-0.82%	-0.82%		
2010-2018	1.40%	0.89%	0.69%		

Peak (MW)					
	CED 2007	CED 2009 Staff Draft Low Rate	CED 2009 Staff Draft High Rate	Percent Difference Staff Low Rate/CED 2007	Percent Difference Staff High Rate/CED 2007
1990	17,635	17,647	17,647	0.07%	0.07%
2000	19,408	19,506	19,506	0.50%	0.50%
2007	22,876	23,111	23,111	1.03%	1.03%
2010	24,082	22,898	22,898	-4.92%	-4.92%
2015	26,013	24,379	24,221	-6.28%	-6.89%
2018	27,112	25,290	24,944	-6.72%	-8.00%
Average Annual Growth Rates					
1990-2000	0.96%	1.01%	1.01%		
2000-2007	3.34%	3.45%	3.45%		
2007-2010	1.73%	-0.31%	-0.31%		
2010-2018	1.49%	1.25%	1.08%		
Historic values are shaded					

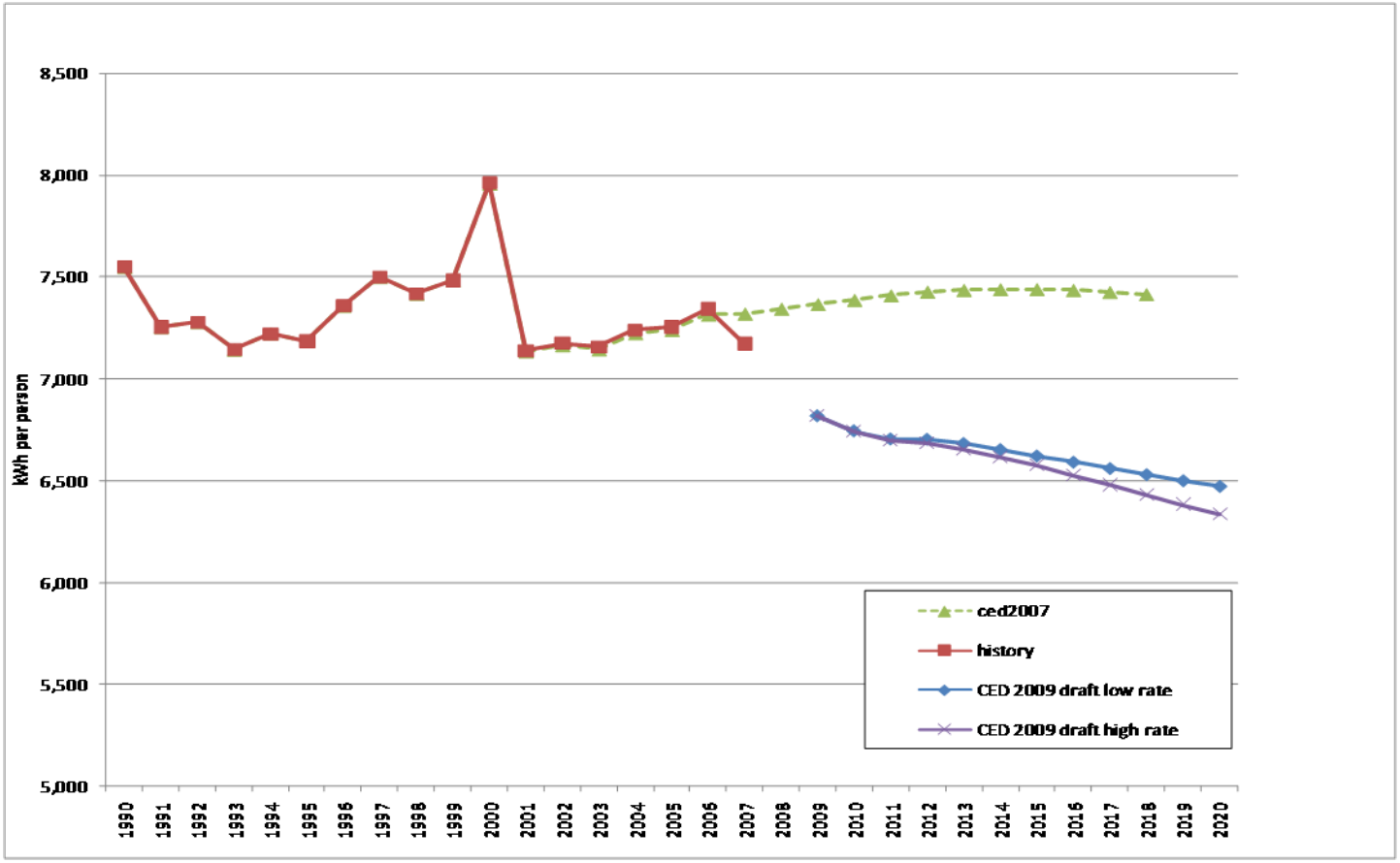
SCE Electricity Consumption Forecast

- Lower starting point and growth



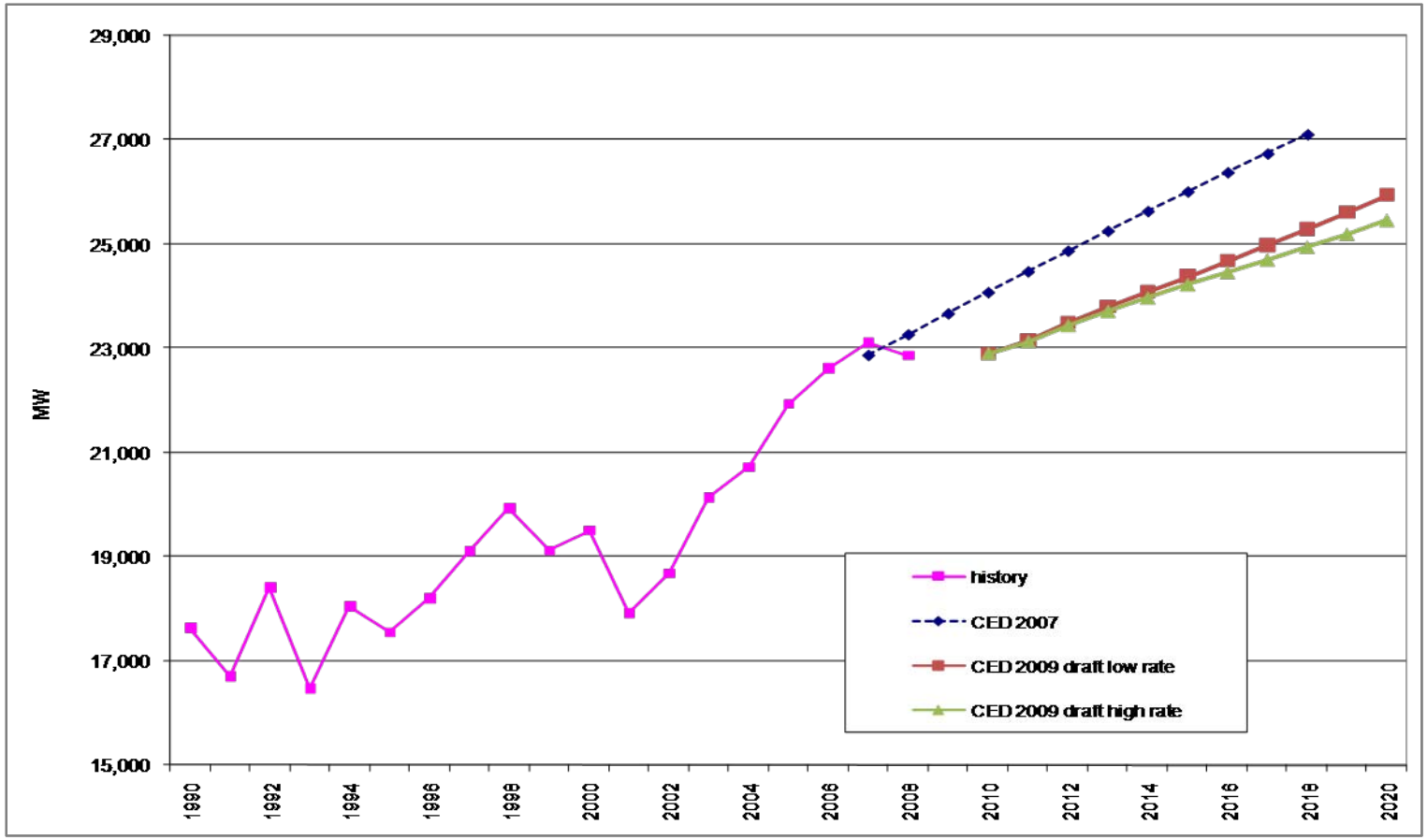
SCE per Capita Consumption

- Declines throughout forecast



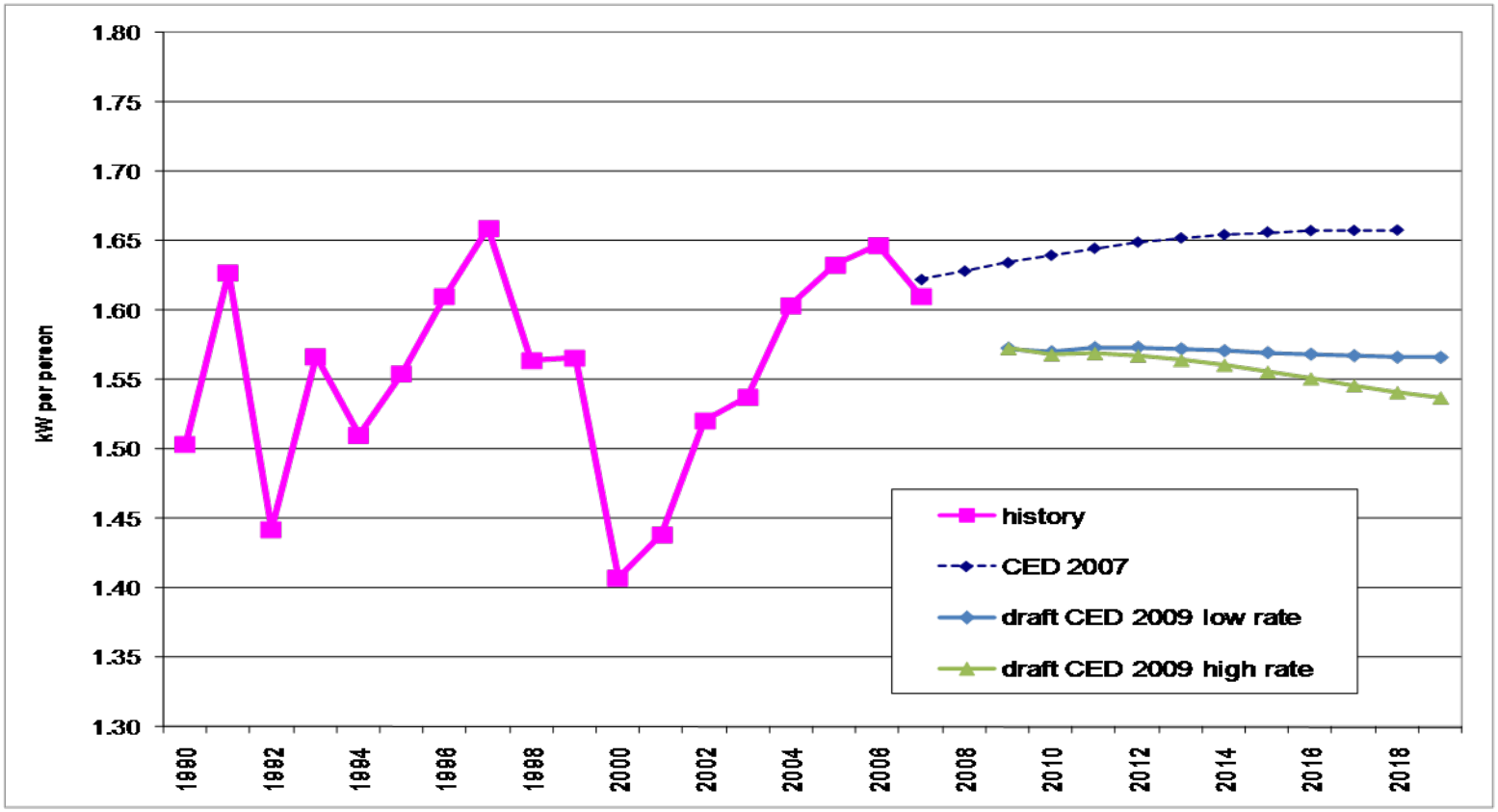
SCE Planning Area Peak Forecast

- Lower starting point, similar growth rate



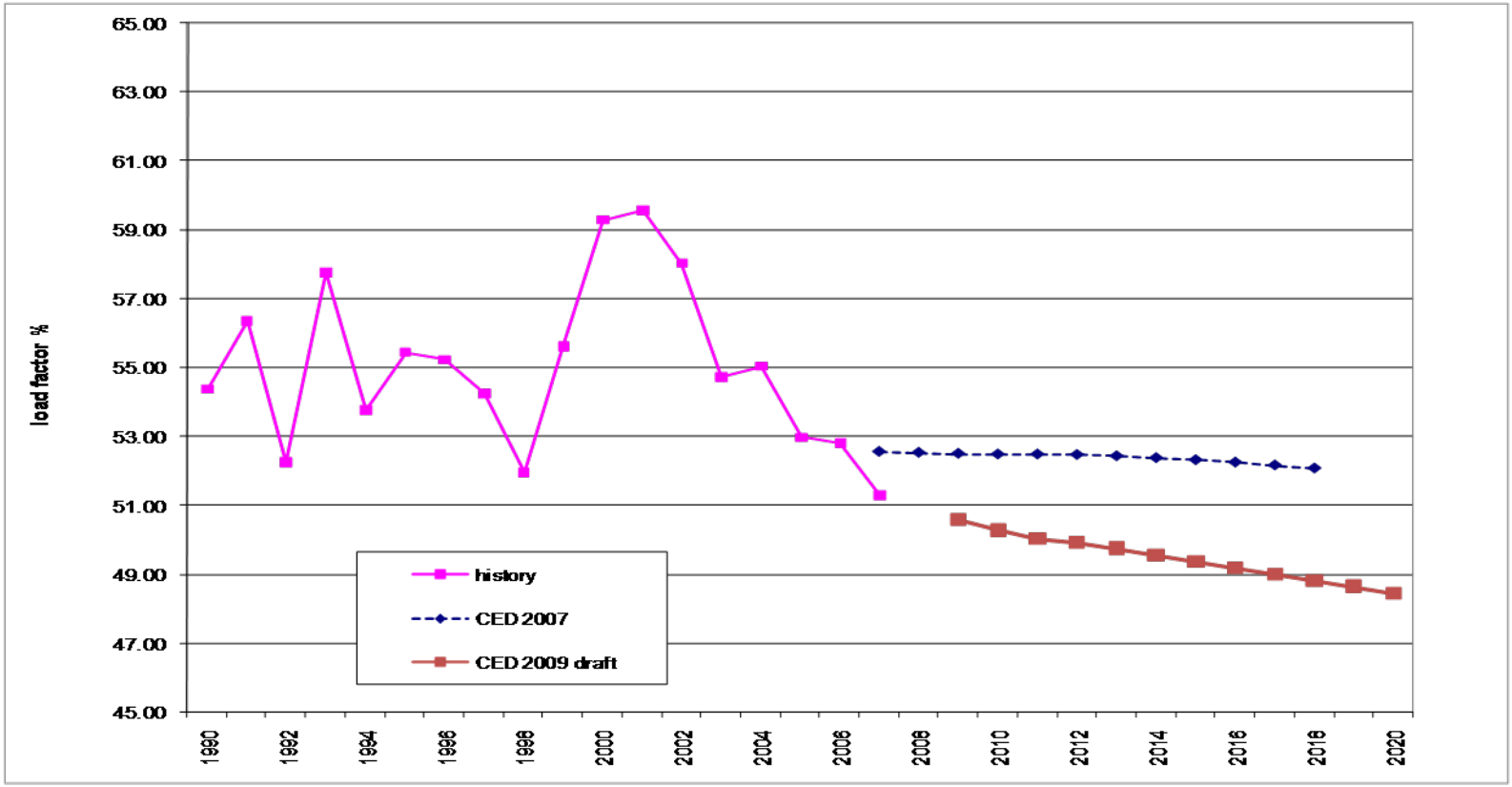
SCE per Capita Peak

- Lower starting point, flat to declining growth



SCE Planning Area Load Factor

- Continues recent decline

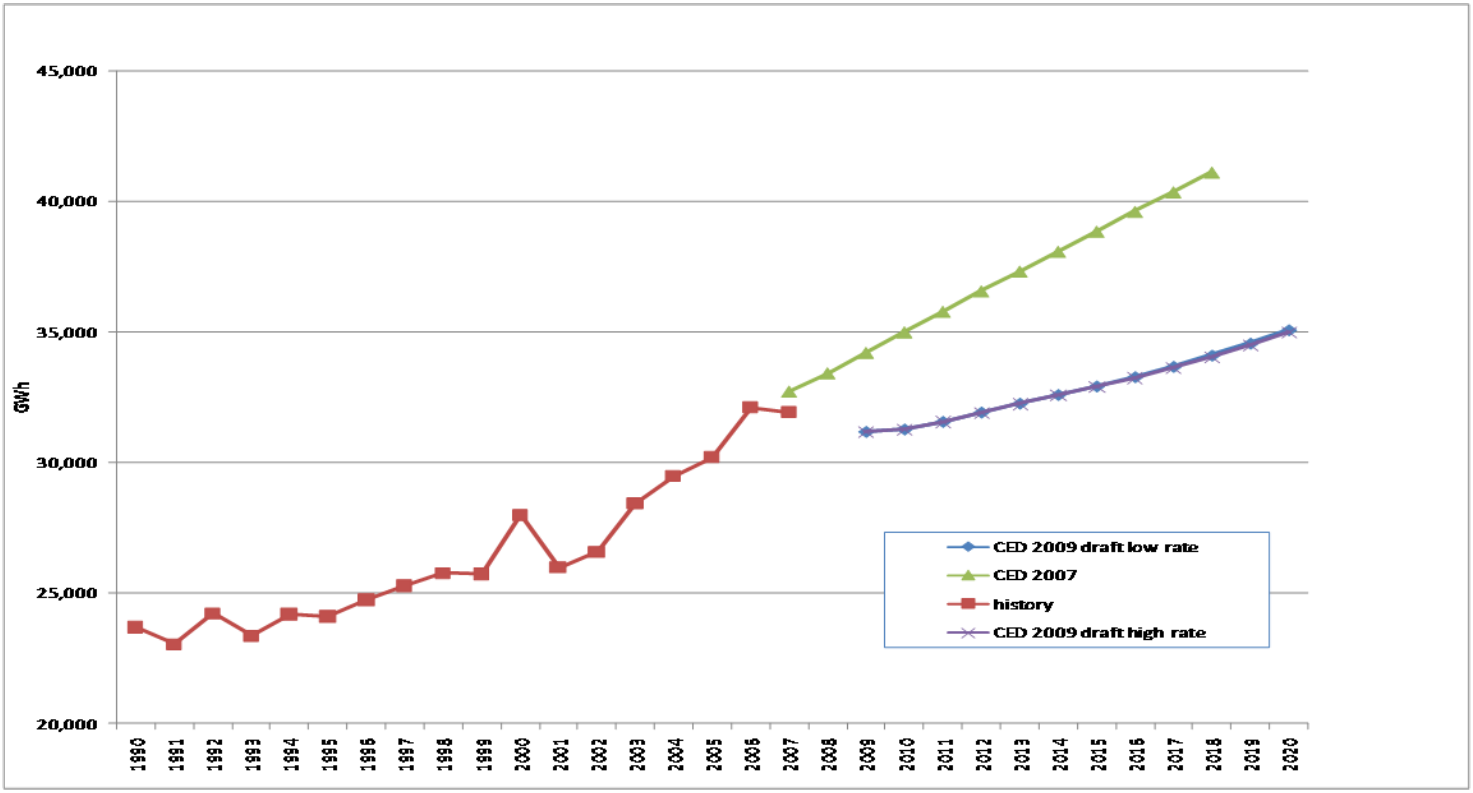


SCE Residential

- Consumption starts from lower point; grows at lower rate
  -11% (2010) : -17% (2018)
- Use per Household flat
- Lower household income -8% (2010) : -10% (2020)
- Committed CFL savings lowers use per household 6%
- Additional lighting savings reductions above 2011 levels will be treated as uncommitted savings
- Peak 5% lower throughout forecast

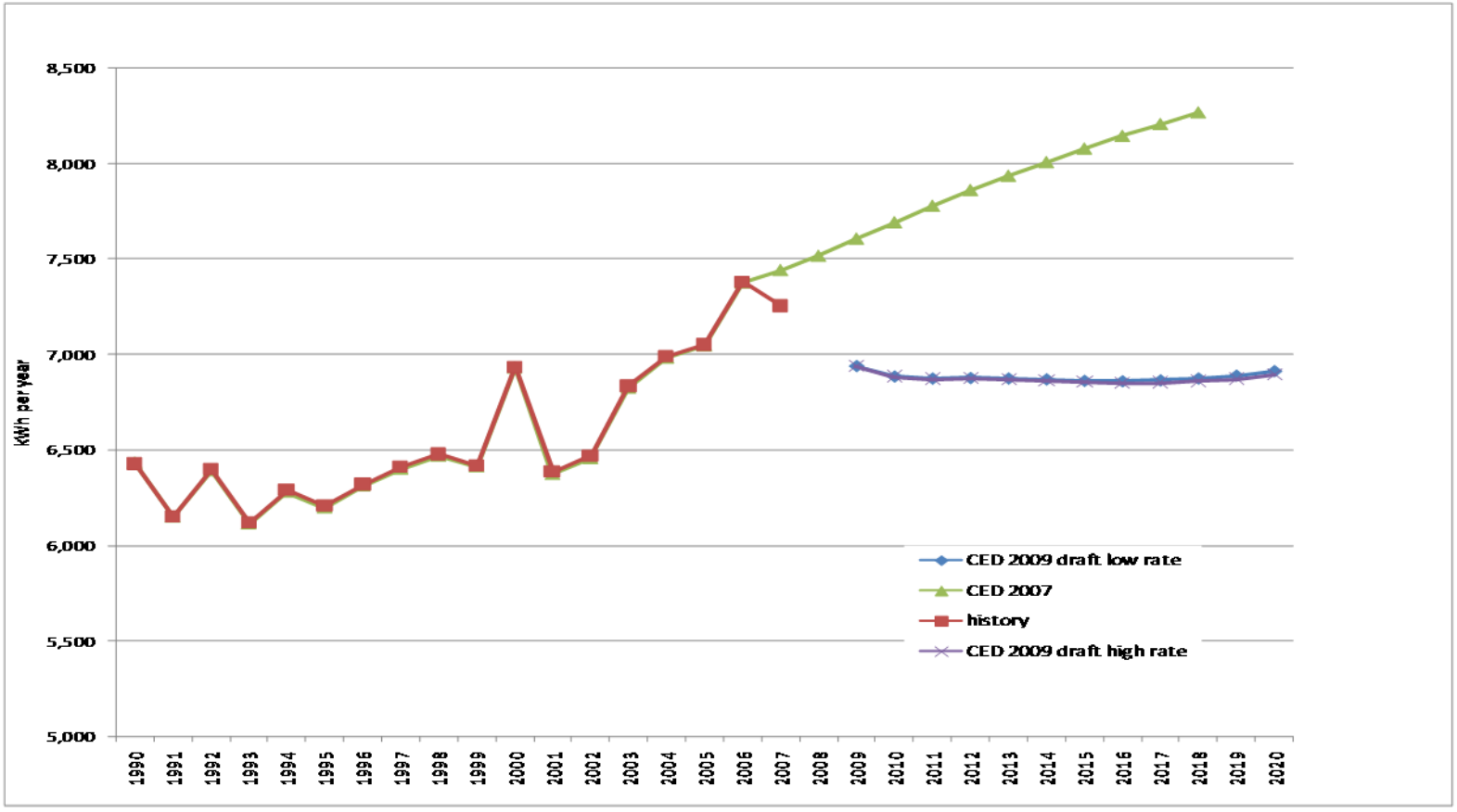
SCE Residential Consumption

- From lower initial value, grows at rate of early 90's



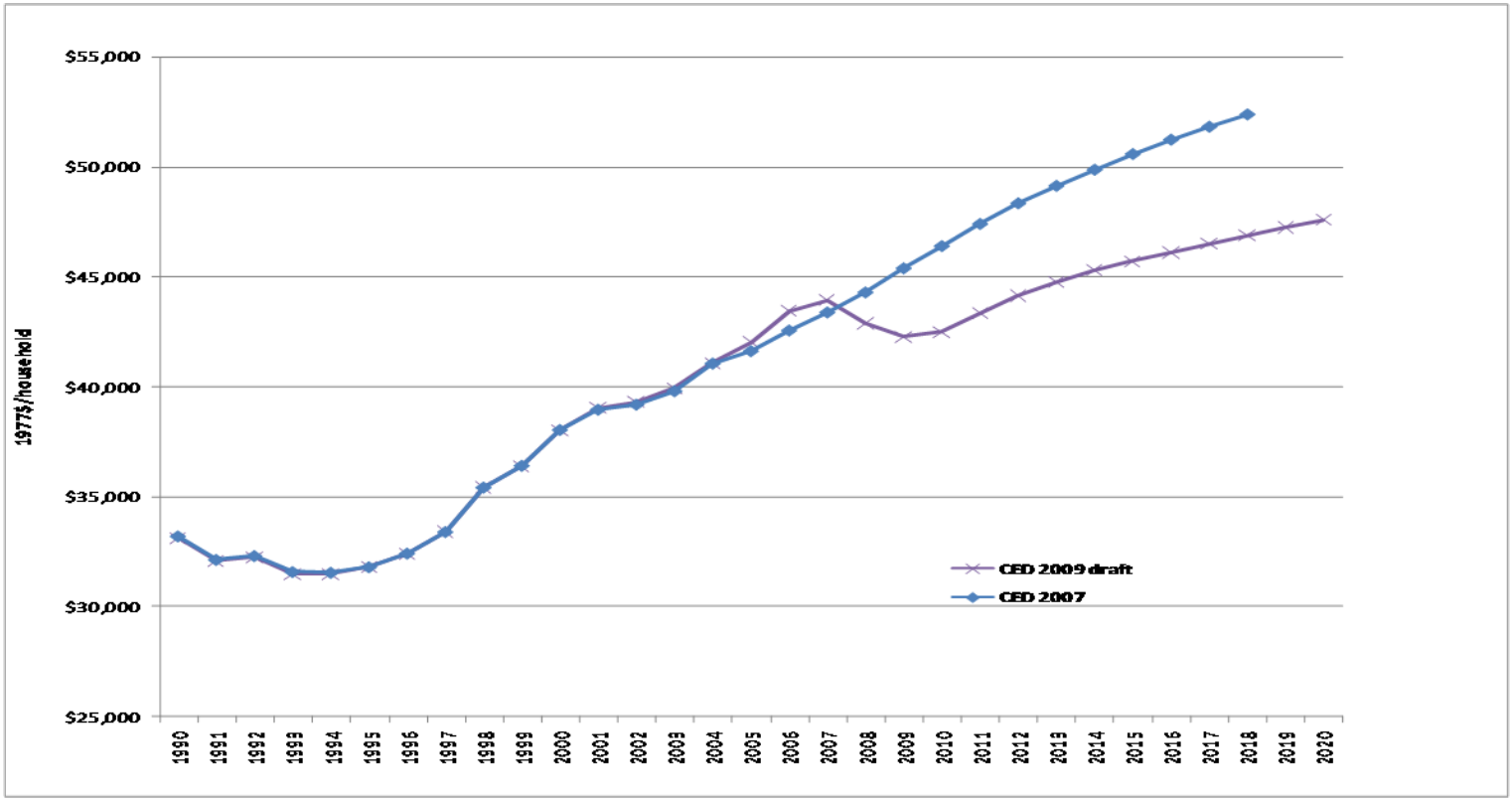
SCE Residential Use per Household

- Remains flat



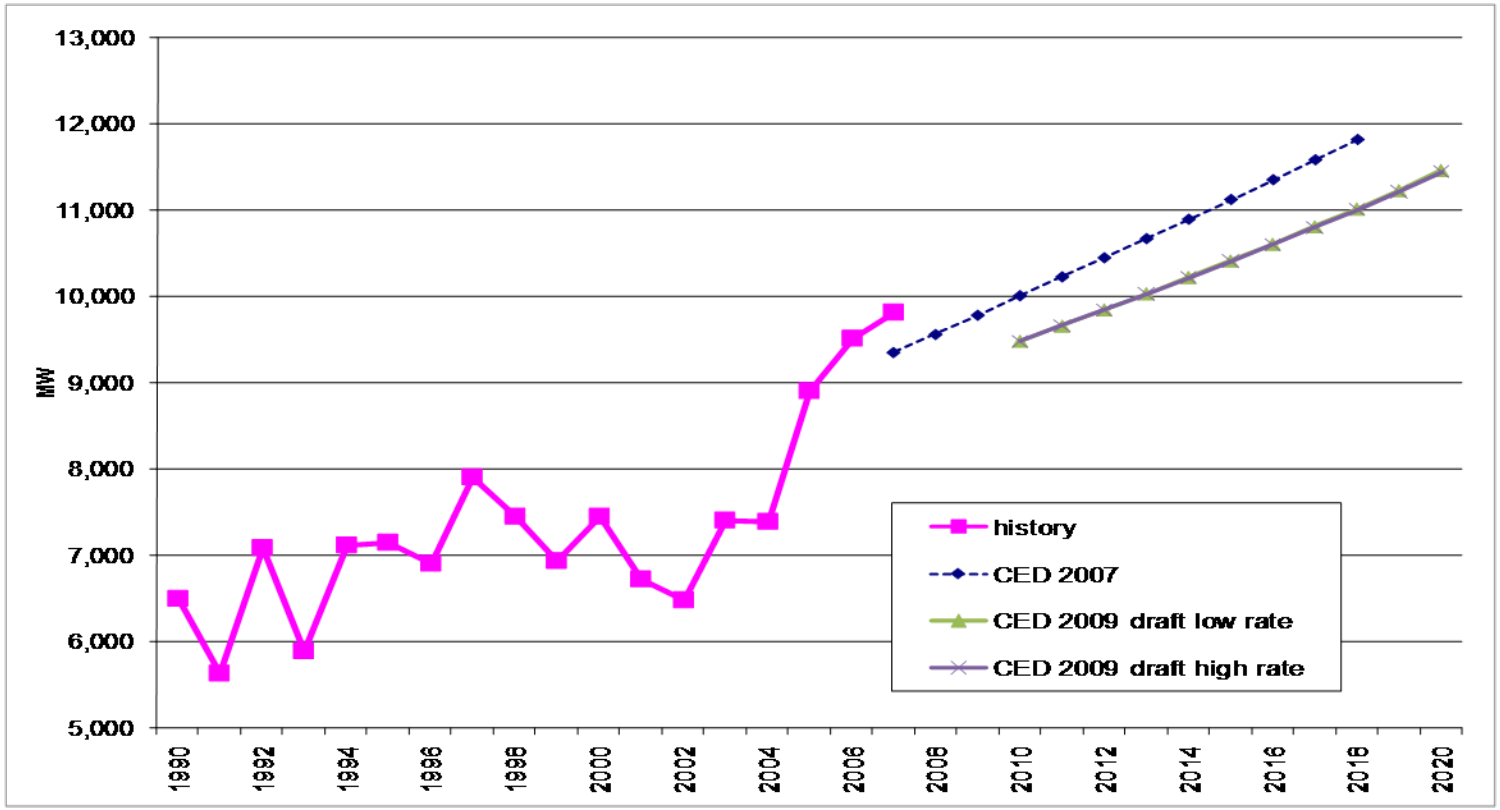
SCE Household Income

- Recovers at lower rate



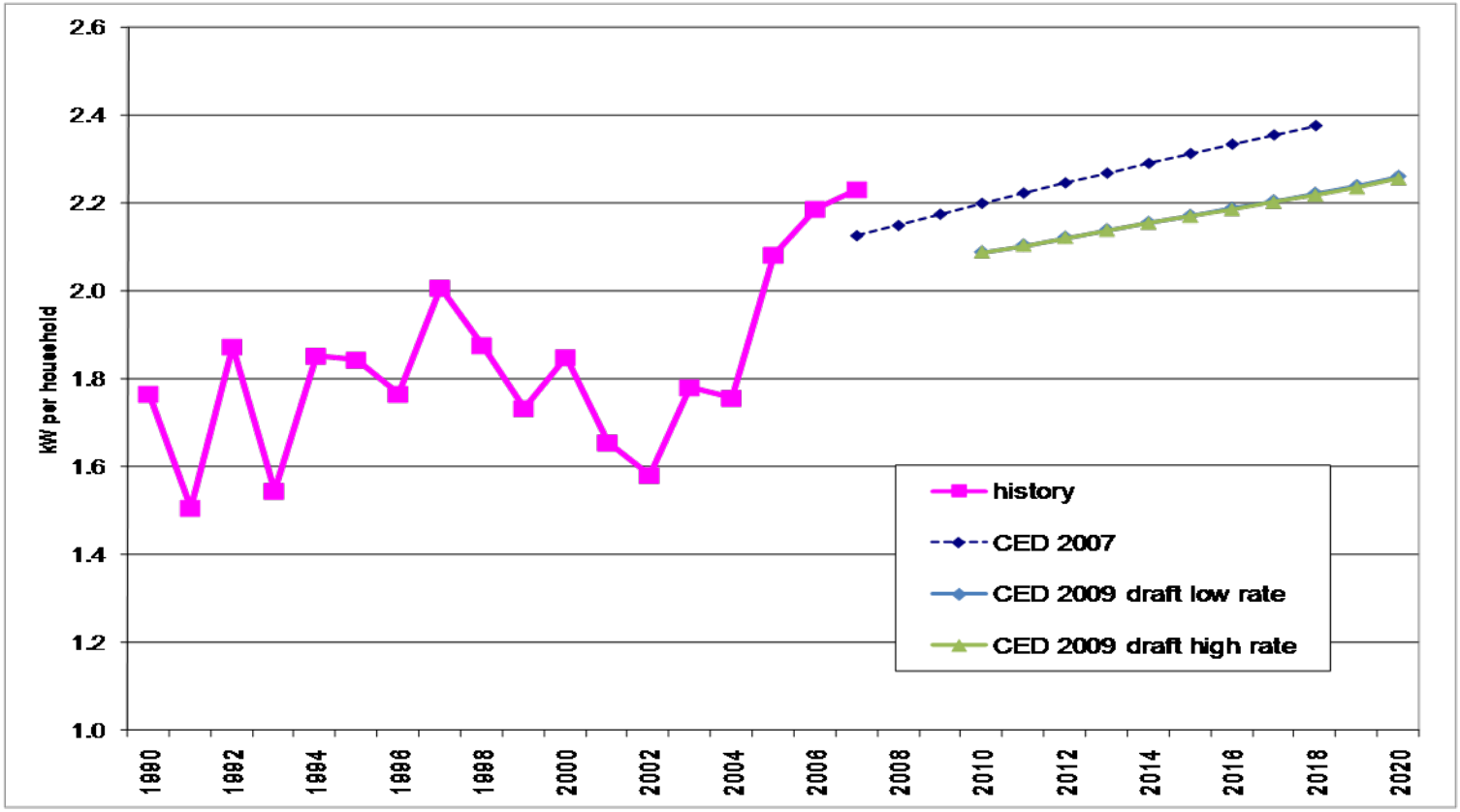
SCE Residential Peak

- Grows at similar rate from lower initial value



SCE Residential Peak Use per Household

- Grows at similar rate from lower initial value

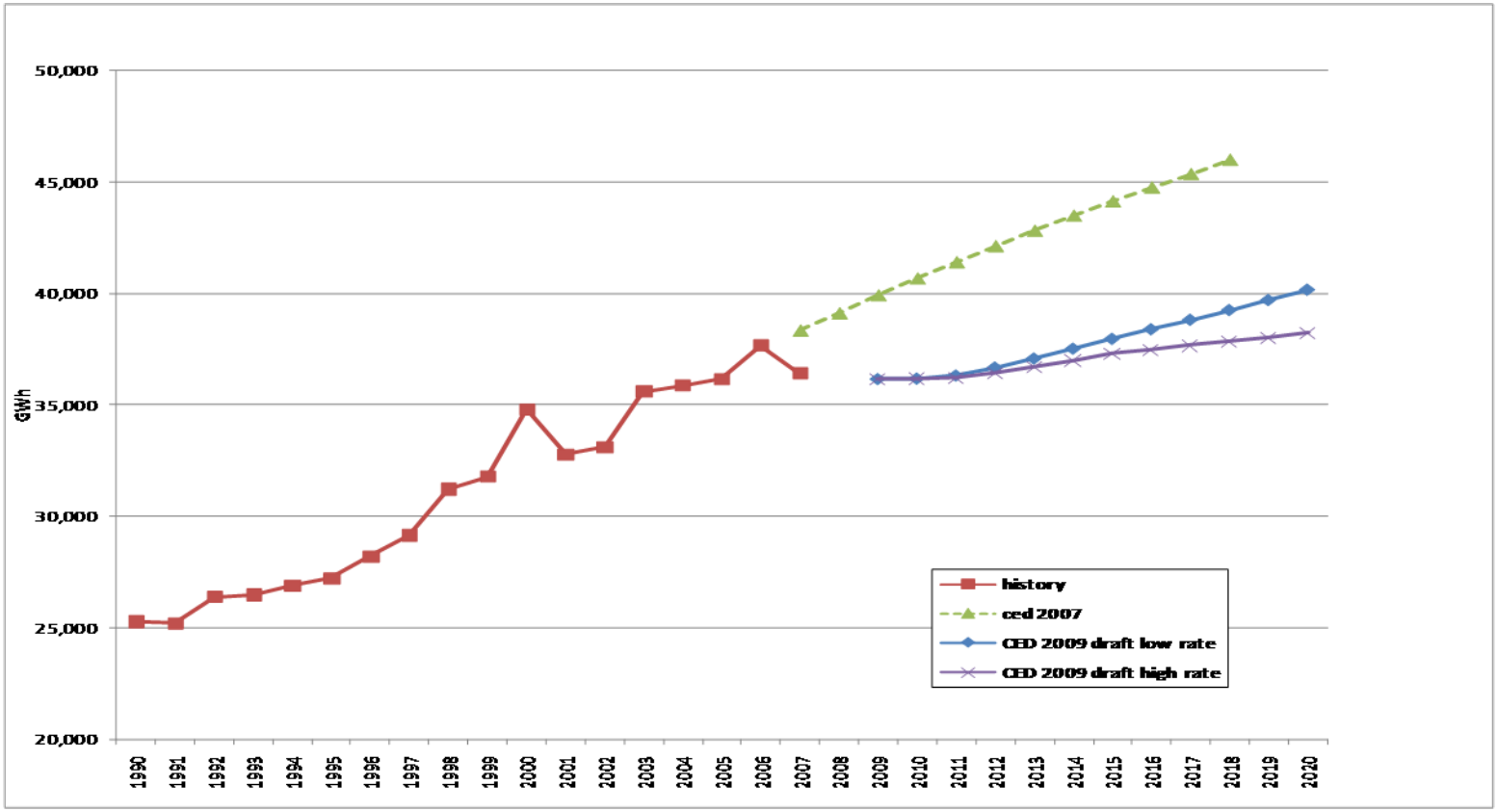


SCE Commercial Building Sector

- Consumption starts from lower point; grows at lower rate
  -11% (2010) : -15% (2018 low rate) -18% (2018 high rate)
- Lower starting point than CED 2007
- Less projected floor space: -2% (2010) : -3% (2018)
- Increased compliance (75%) with 2005 lighting standards reduces consumption 4% by end of forecast
- Use per square foot continues decline
- Peak forecast results mirror consumption forecast

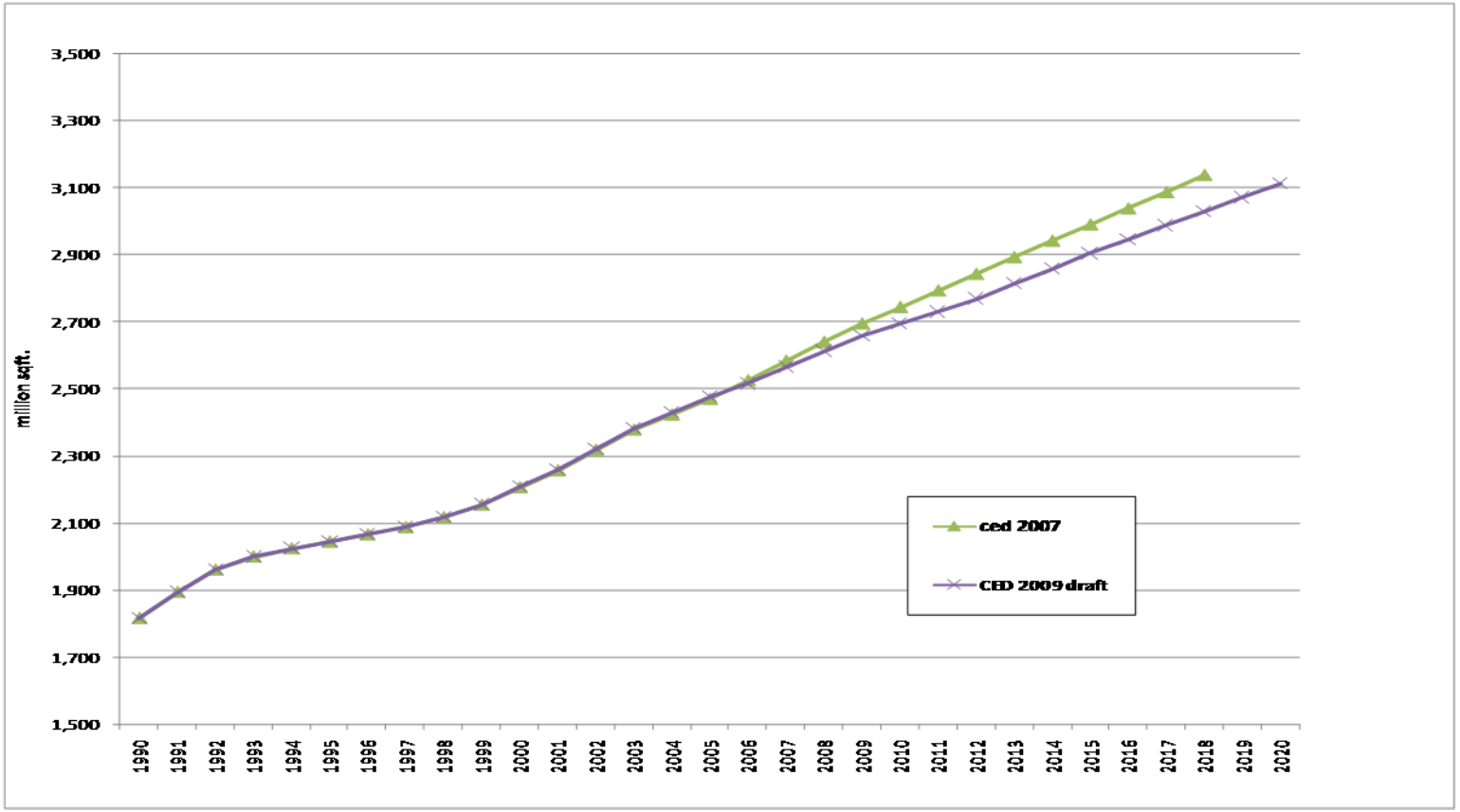
SCE Commercial Building Consumption

- Lower starting point and midterm growth



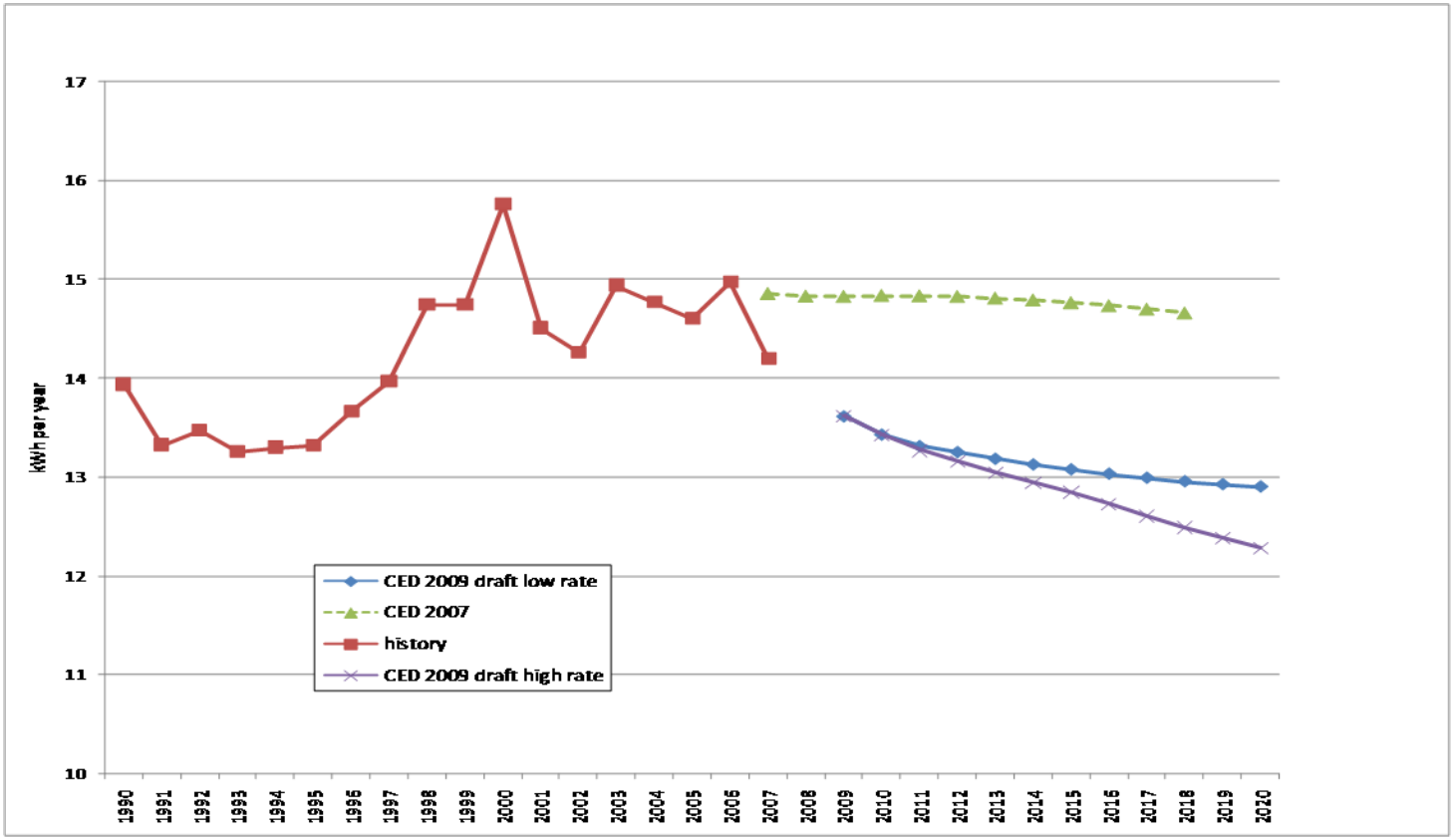
SCE Commercial Floor Space

- Lower growth over forecast period

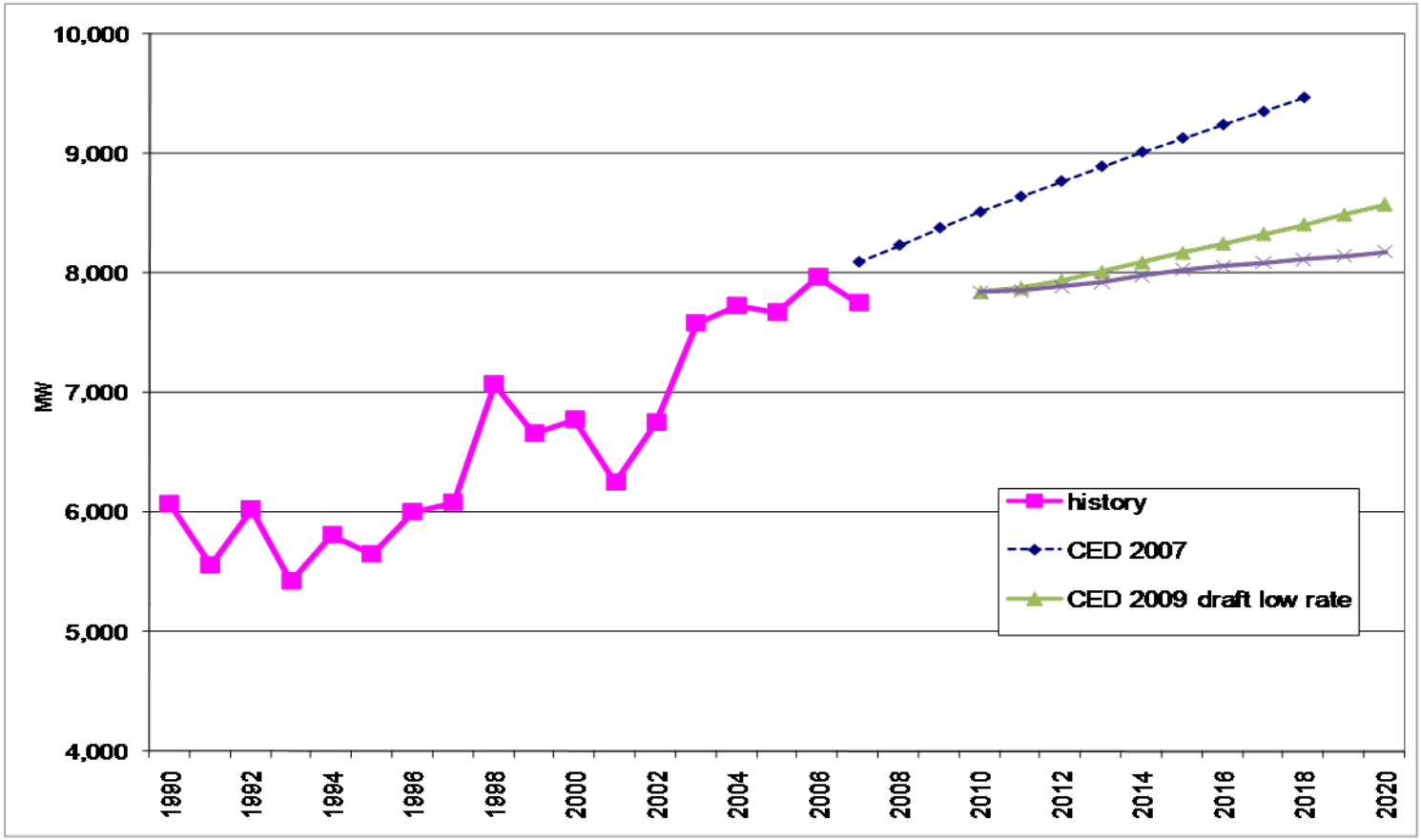


SCE Commercial kWh per Square Foot

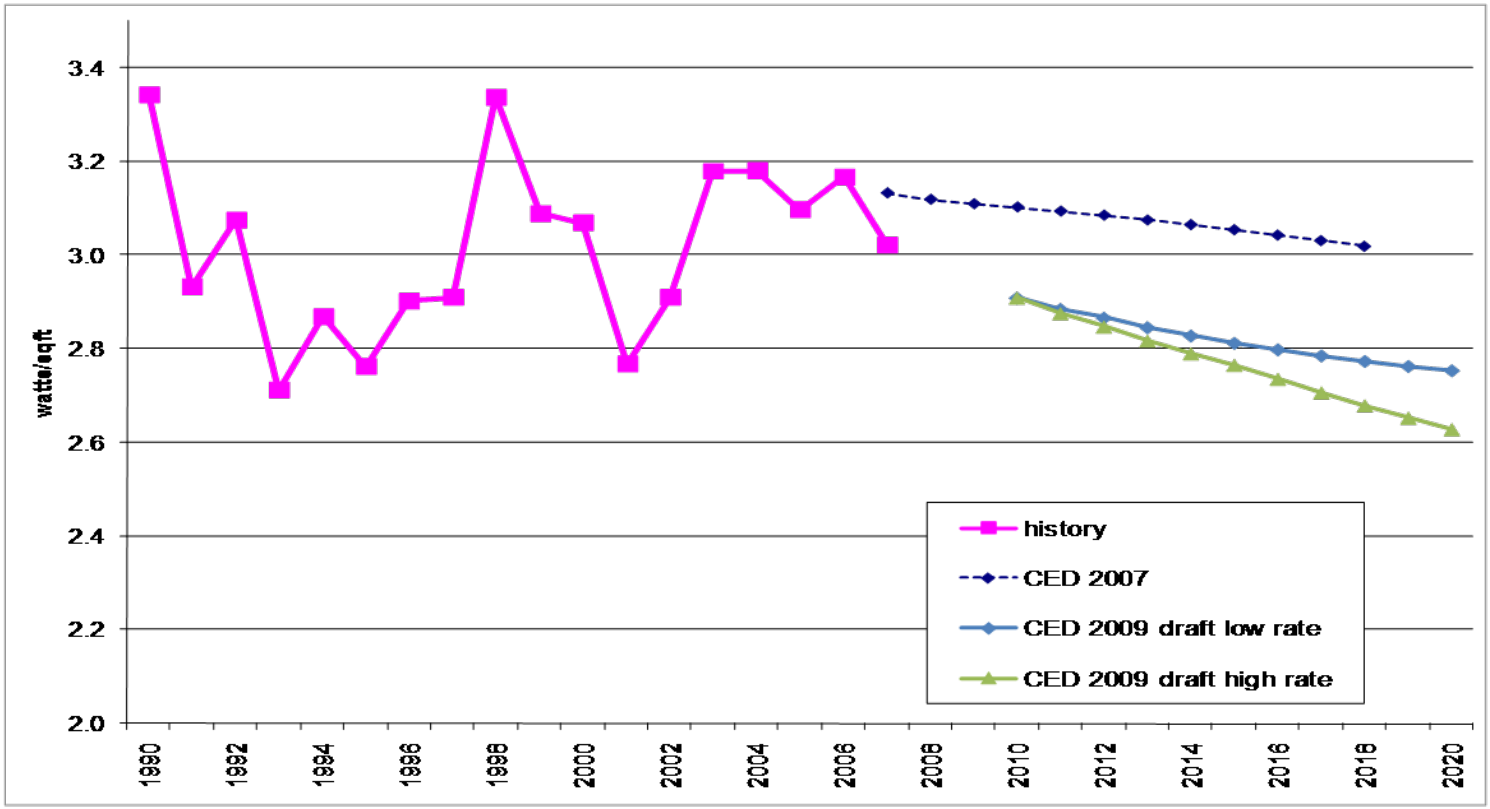
- Future decline due to more efficient equipment and buildings



SCE Commercial Building Sector Peak



SCE Commercial Peak per Square Foot

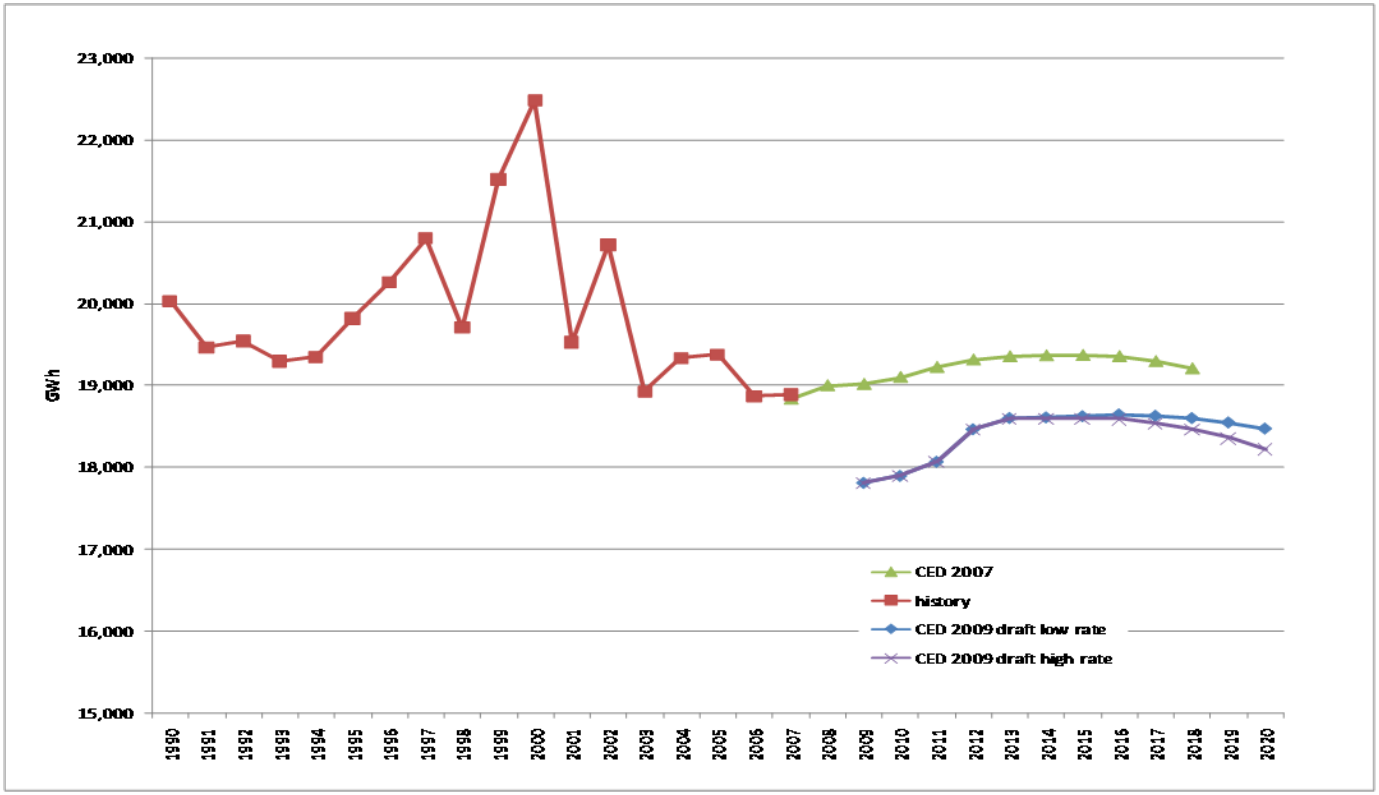


SCE Industrial Sector

- Consumption starts lower -6%
- Increases in early years
- Levels out to 3% lower by 2018
- Peak follows similar pattern

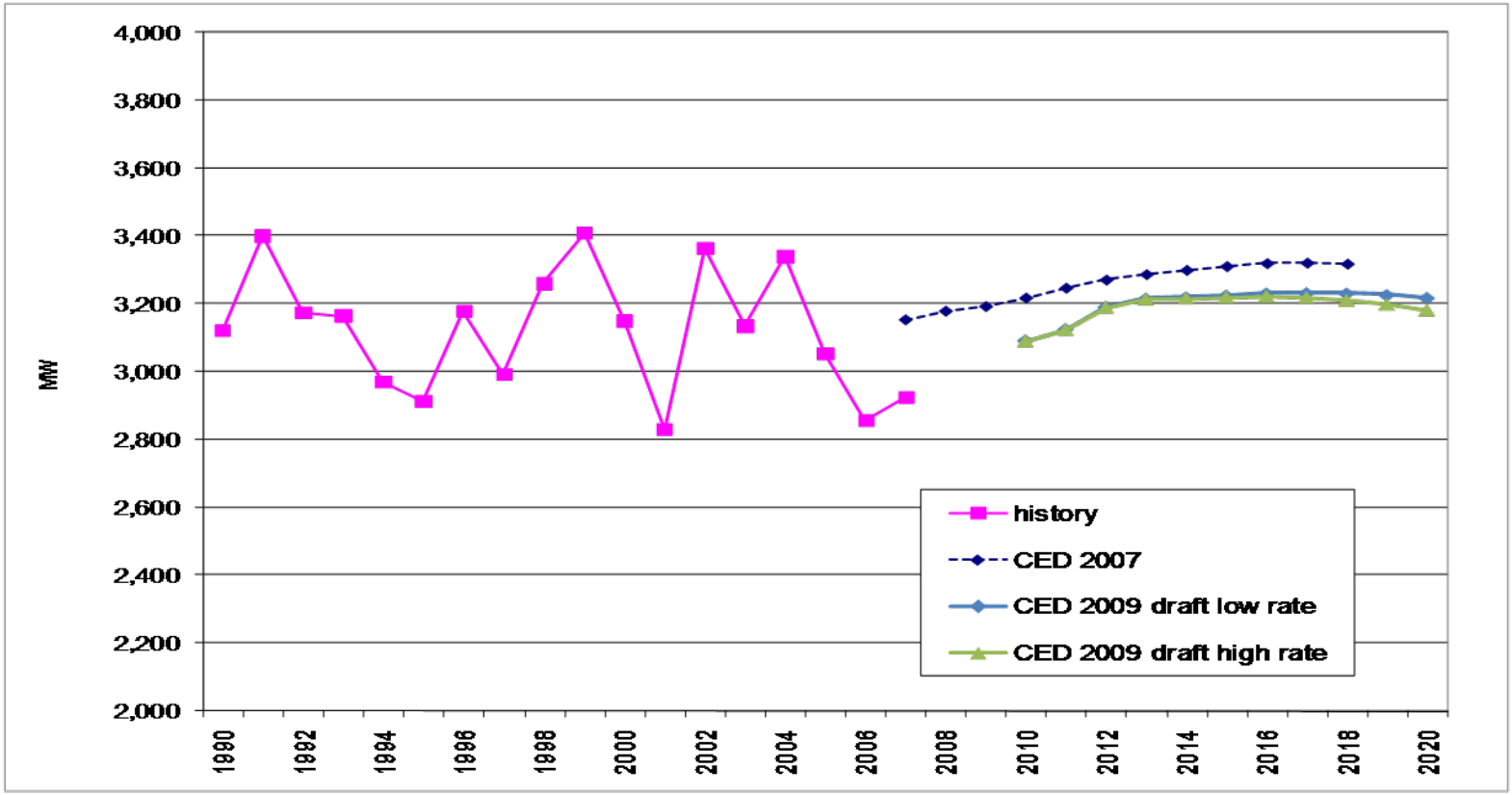
SCE Industrial Sector Consumption

- Lower starting point & midterm recovery



SDG&E Industrial Sector Peak

- Smaller difference than consumption forecasts

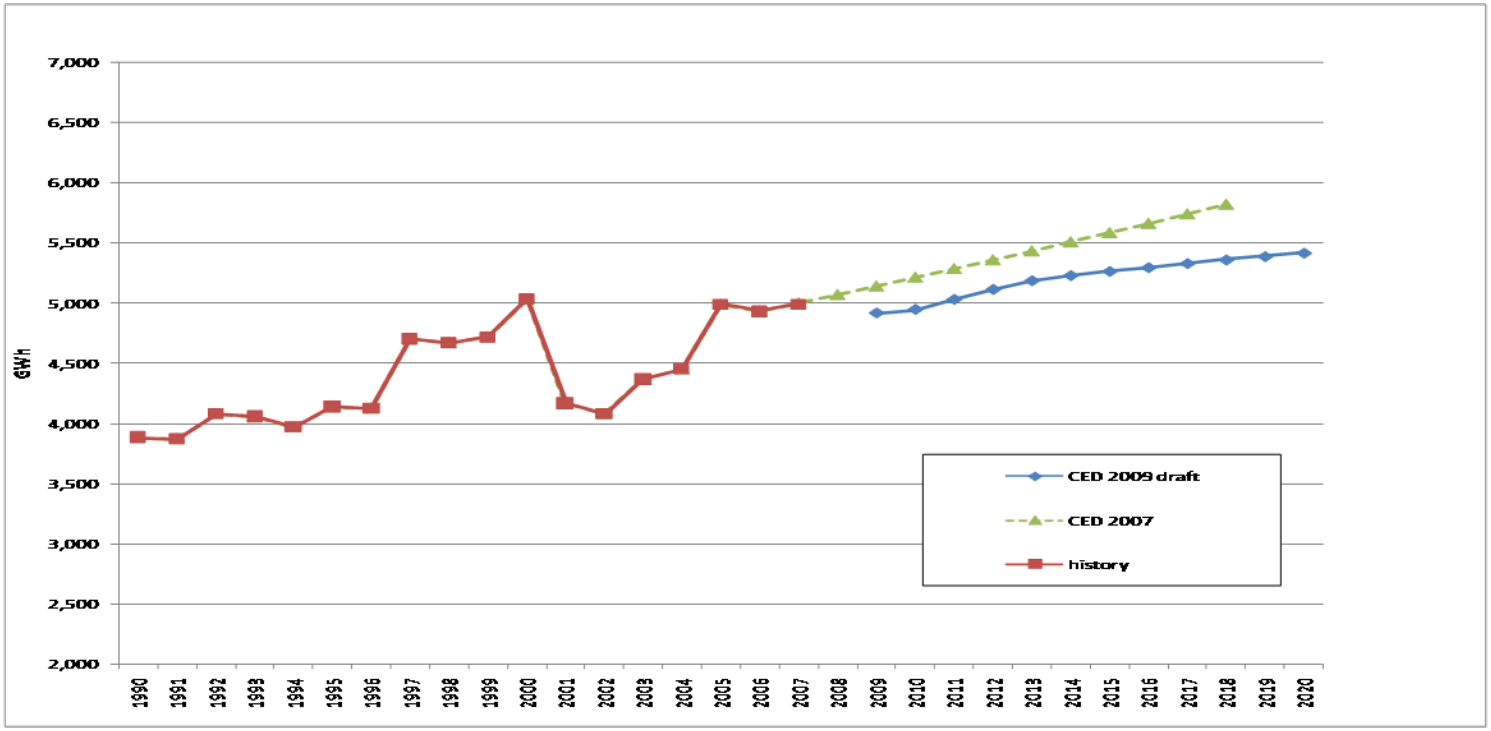


SCE Other Sectors

- Remaining sectors comprise 13% of total consumption:
  - 5% Transportation, communications and utilities (lower starting point and economic drivers)
  - 4% Agriculture and Water Pumping (little change from CED 2007)
  - 3% Mining, Oil Extraction and Construction (lower because of starting point and economic drivers)
  - 1% Streetlighting
- Other sectors comprise only 7% of peak

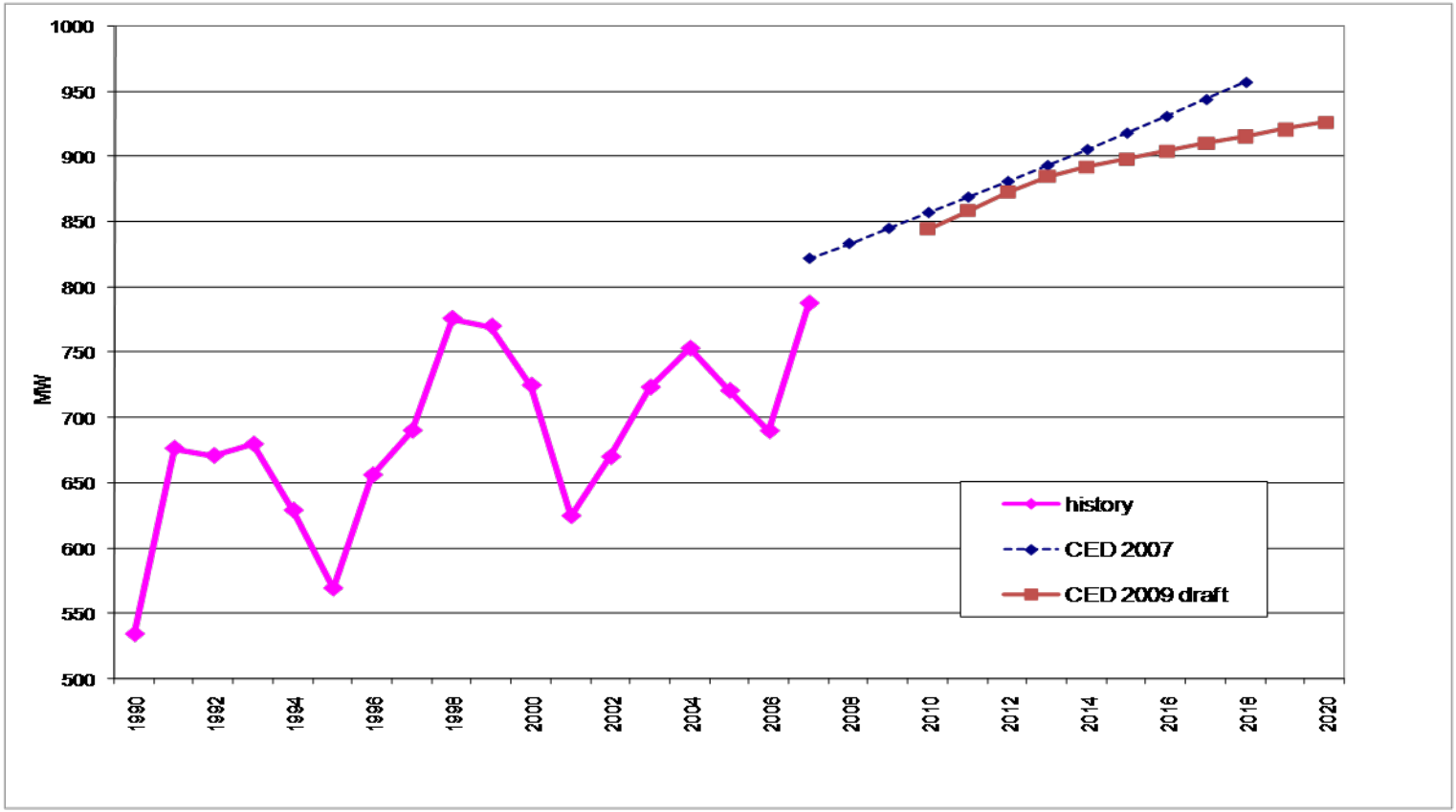
SCE Transportation, Communications and Utilities Sector Consumption

- Lower starting and long term economic drivers



SCE Other Sectors Peak

- Mimics TCU consumption forecast



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

SCE Consumption Savings Estimates by Program Category

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

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

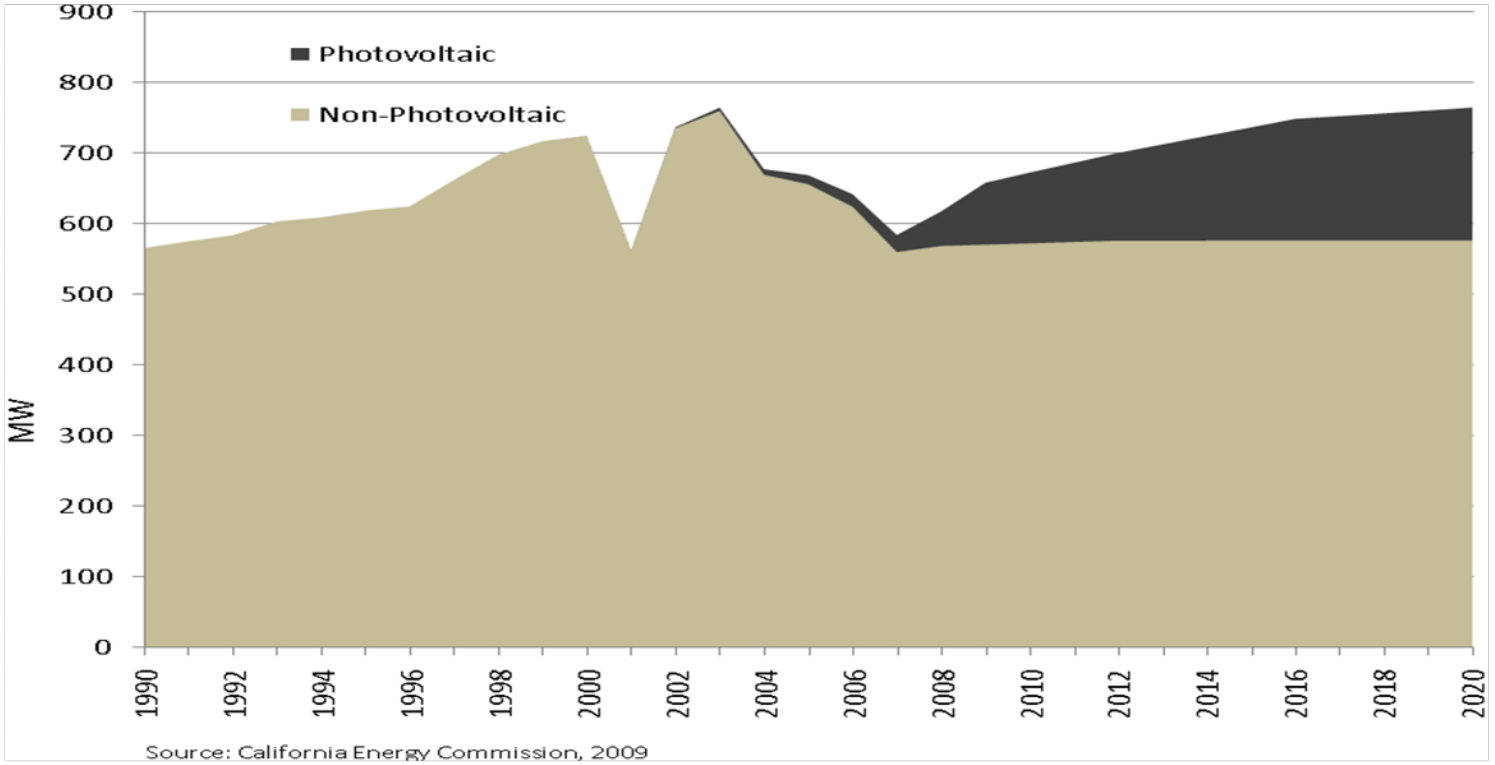
SCE Peak Savings Estimates by Program Category

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

Source: California Energy Commission, 2009

*Commercial programs also include agricultural program savings.

SCE Self Generation Peak Estimates

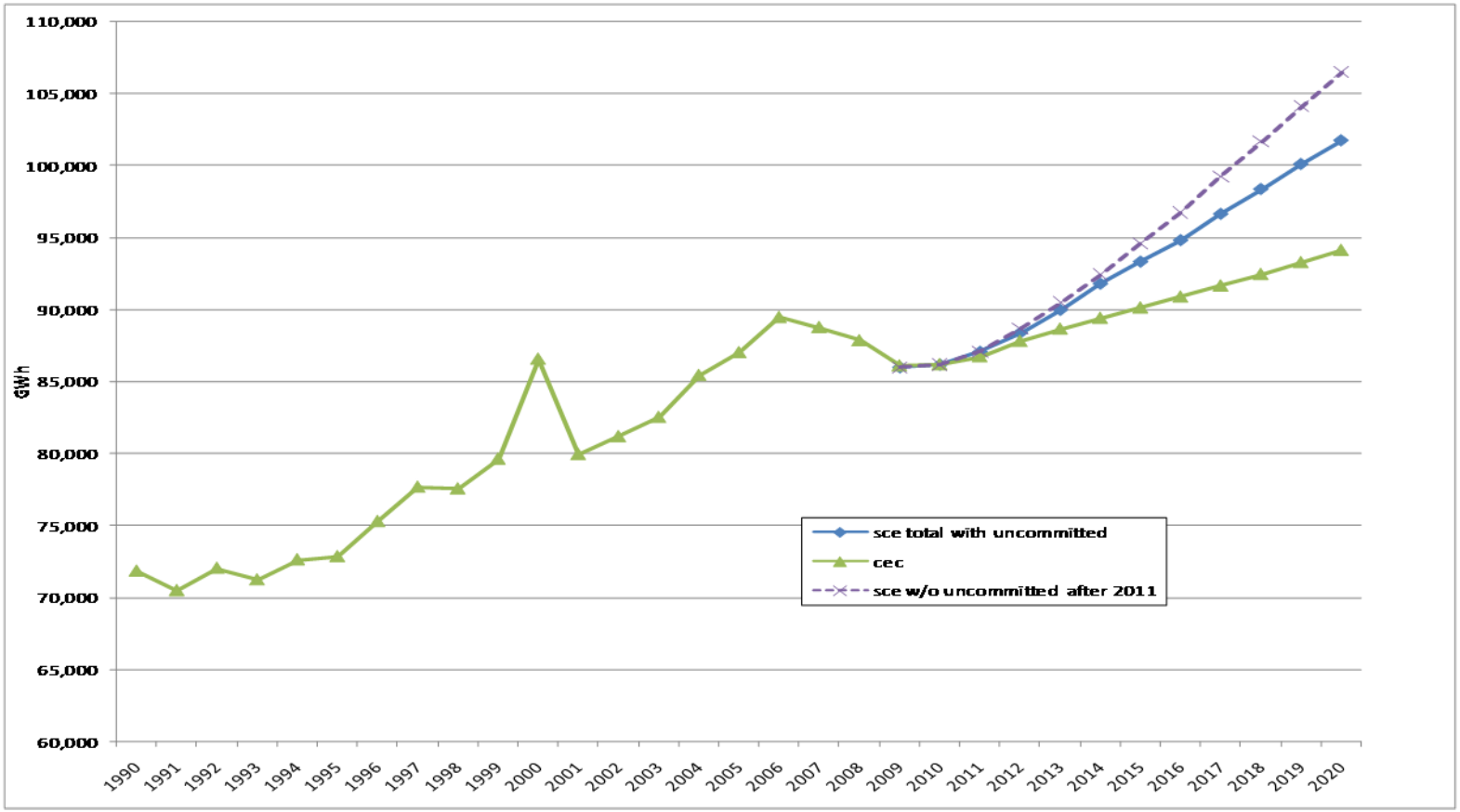


Comparison to SCE Forecast

- SCE forecasts are adjusted for 2009-2011 program savings
  - (now counted as committed)
- SCE forecast grows faster after 2013
  - 8% higher by 2020 for managed forecast
  - 13% higher for unmanaged forecast (no uncommitted DSM after 2011)
- Majority of difference is in commercial sector
  - SCE forecast 20% higher by 2020
  - SCE projects commercial sales to return to post energy crisis growth
- Peak differences are smaller
  - SCE 3.5% higher for managed forecast
  - 8% higher for unmanaged forecast

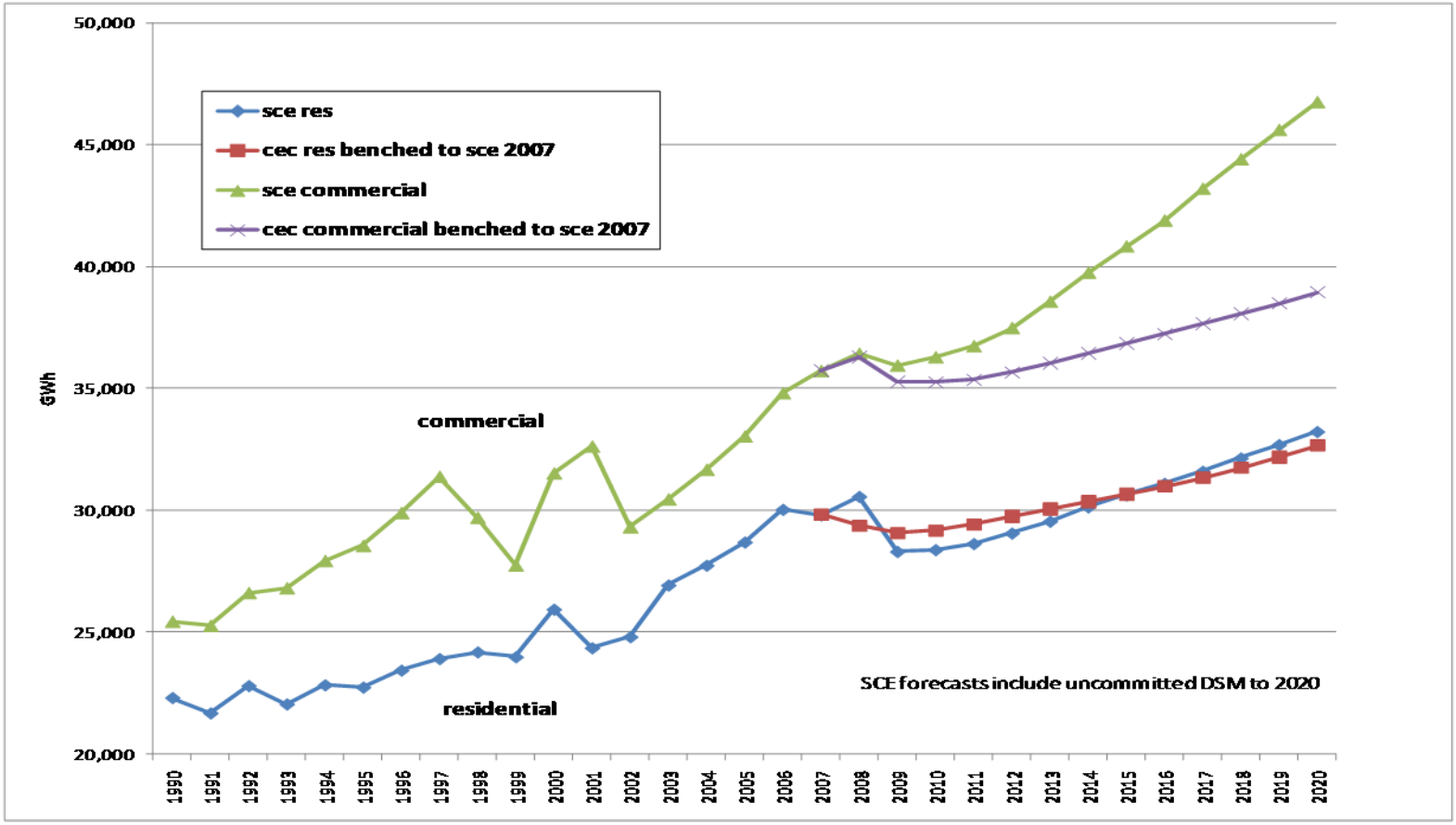
SCE Energy Forecast Comparison

- Both SCE scenarios higher after 2011



SCE Sector Forecast Comparison

- Difference is in commercial sector



SCE Peak Forecast Comparison

- Both SCE scenarios higher after 2014