

# **CALIFORNIA ENERGY COMMISSION Staff Workshop on Historical Energy Efficiency Estimate and Update to the 2009 California Energy Demand Forecast**

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EE Inc. Associates and consultants to TURN  
May 25, 2011**

**DOCKET**

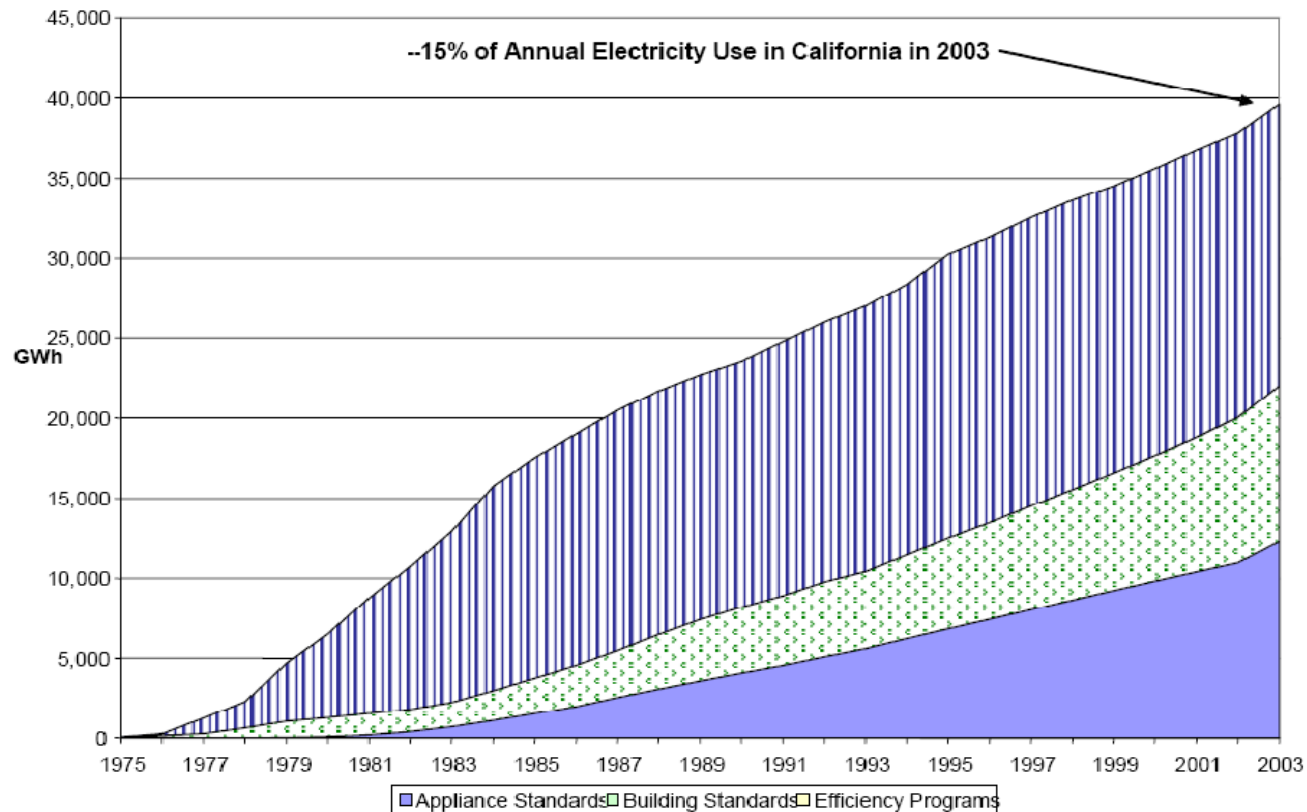
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# CEC 2003 Statement of Historic EE Savings

Figure E-1. Cumulative Efficiency Savings



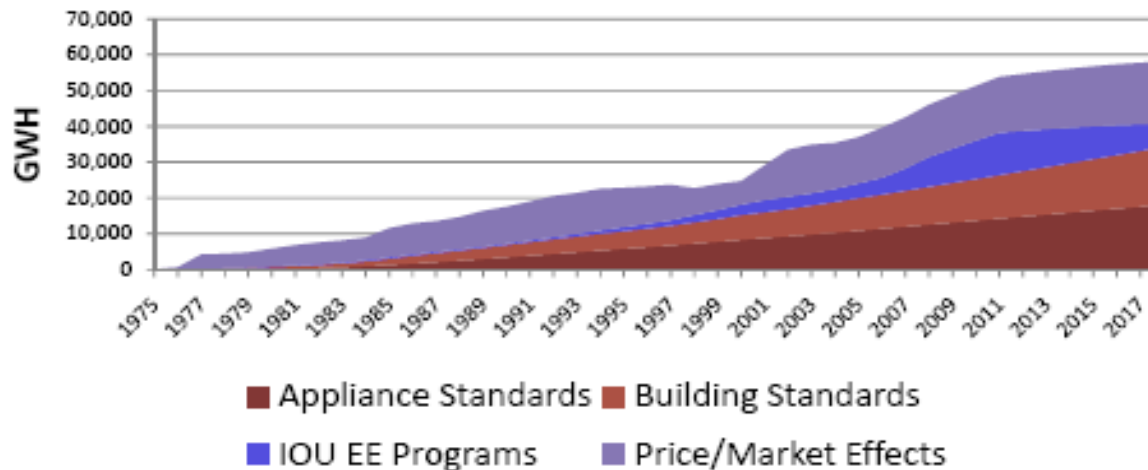
Source: Energy Commission DSM forecast model output

# CEC May 2009 Measurement of EE Program Impacts for the 2009 Preliminary Forecast



## California Energy Commission

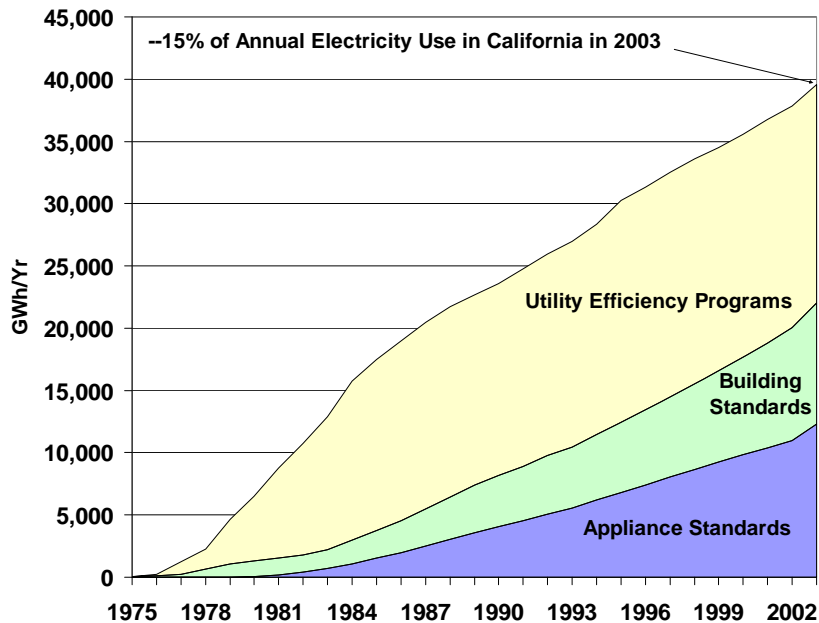
IOU EE Program Impacts Relative to Other Effects



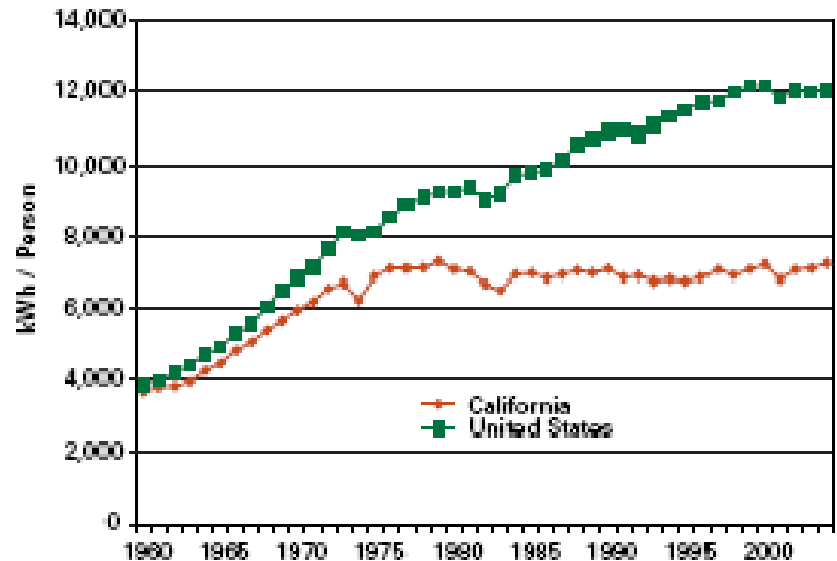
- Standards and Price/Market effect estimates are from 2007 IEPR (excluding impacts for POU planning areas);
- IOU EE Programs show estimates of demand reductions incorporated into 2009 IEPR Preliminary Forecast.

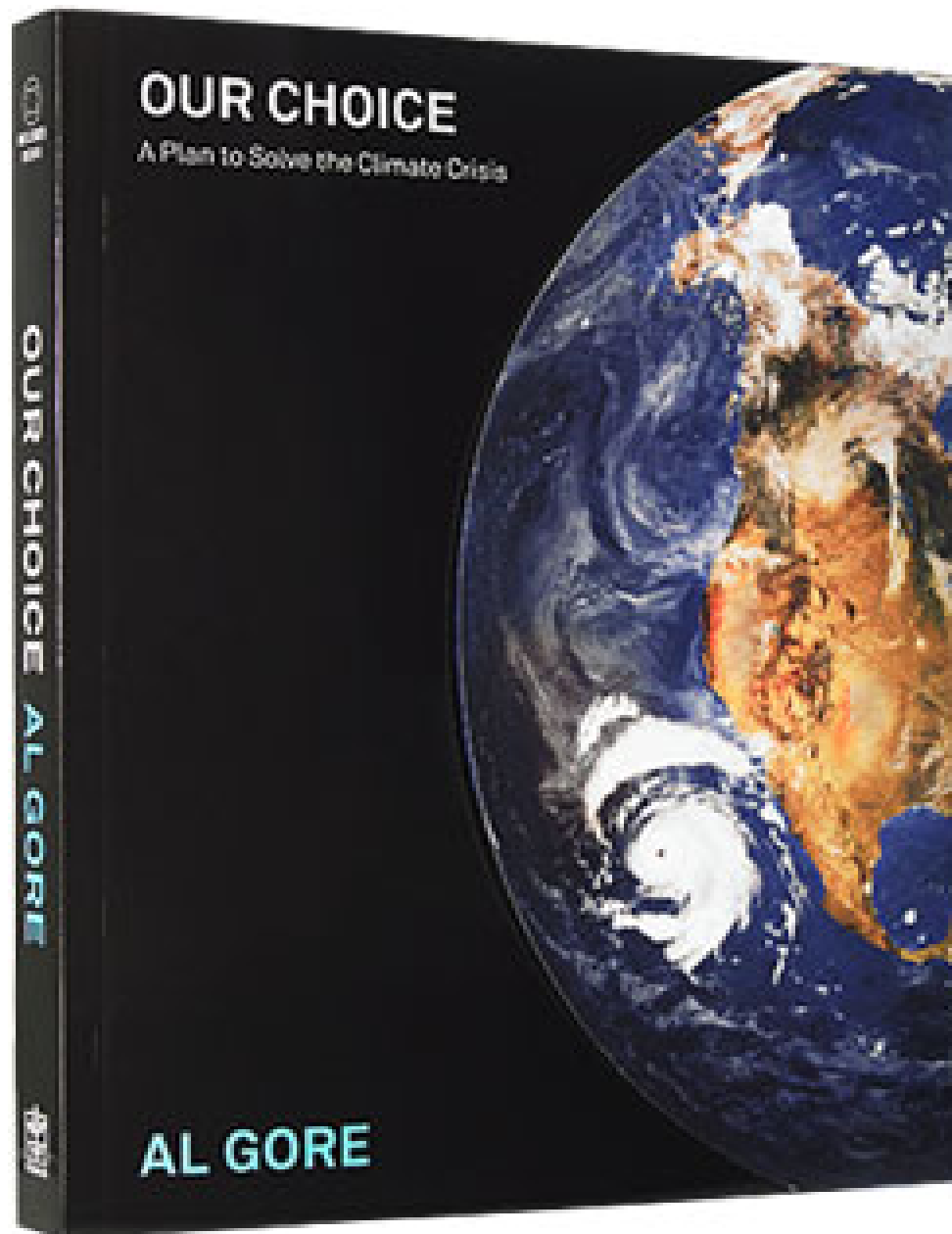
# “Cause and Effect”

## CA Cumulative Energy GWh Savings: Utility EE Programs and Bldg. & Appliance Standards



## Per Capita Electricity Use in the U.S. and CA: 1960-2004





## ***OUR CHOICE:*** California Leads the Way

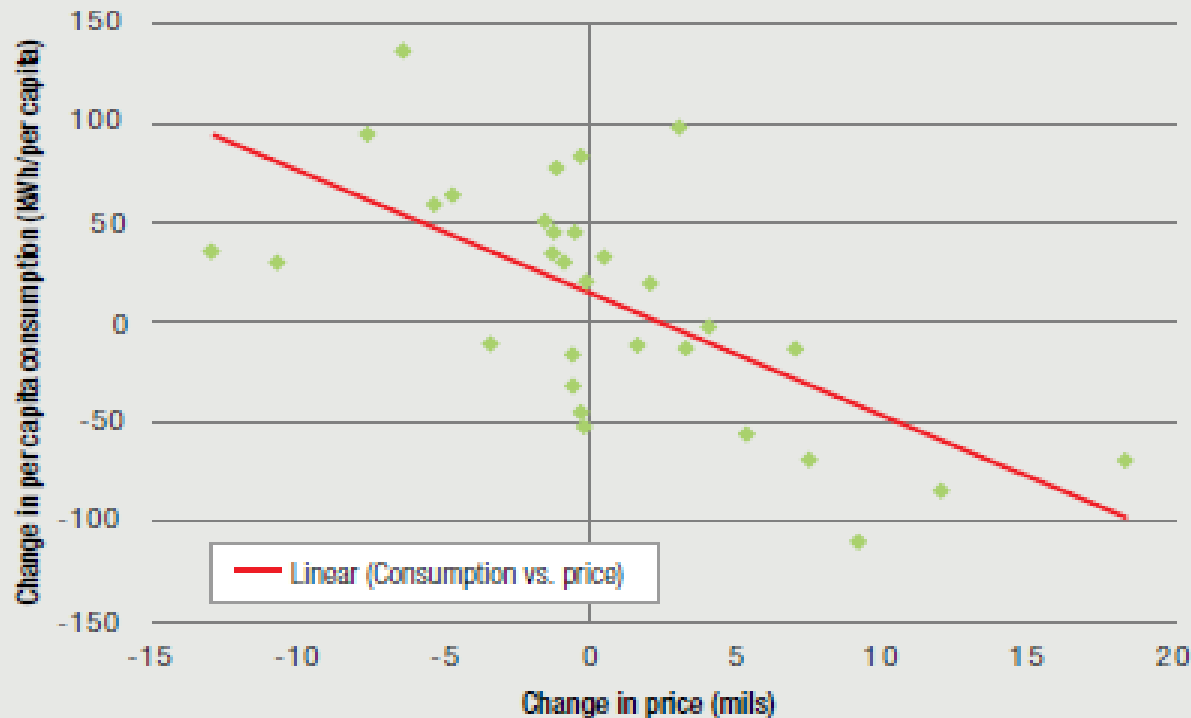
“Since the energy crises of the 1970’s, CA’s laws have encouraged energy efficiency. Over the past 25 years, the state’s per capita electricity use has remained flat, while that of the rest of the U.S. has jumped by 60 percent.”

# Stabilizing California's Demand: The Real Reasons Behind the State's Energy Savings

## Public Utilities Fortnightly March 2009

**FIG. 3**

**CHANGE IN CALIFORNIA PER CAPITA RESIDENTIAL ELECTRICITY CONSUMPTION  
VS. CHANGE IN CALIFORNIA PRICE OF RESIDENTIAL ELECTRICITY  
(CONSTANT 2000 \$): 1970-2005**

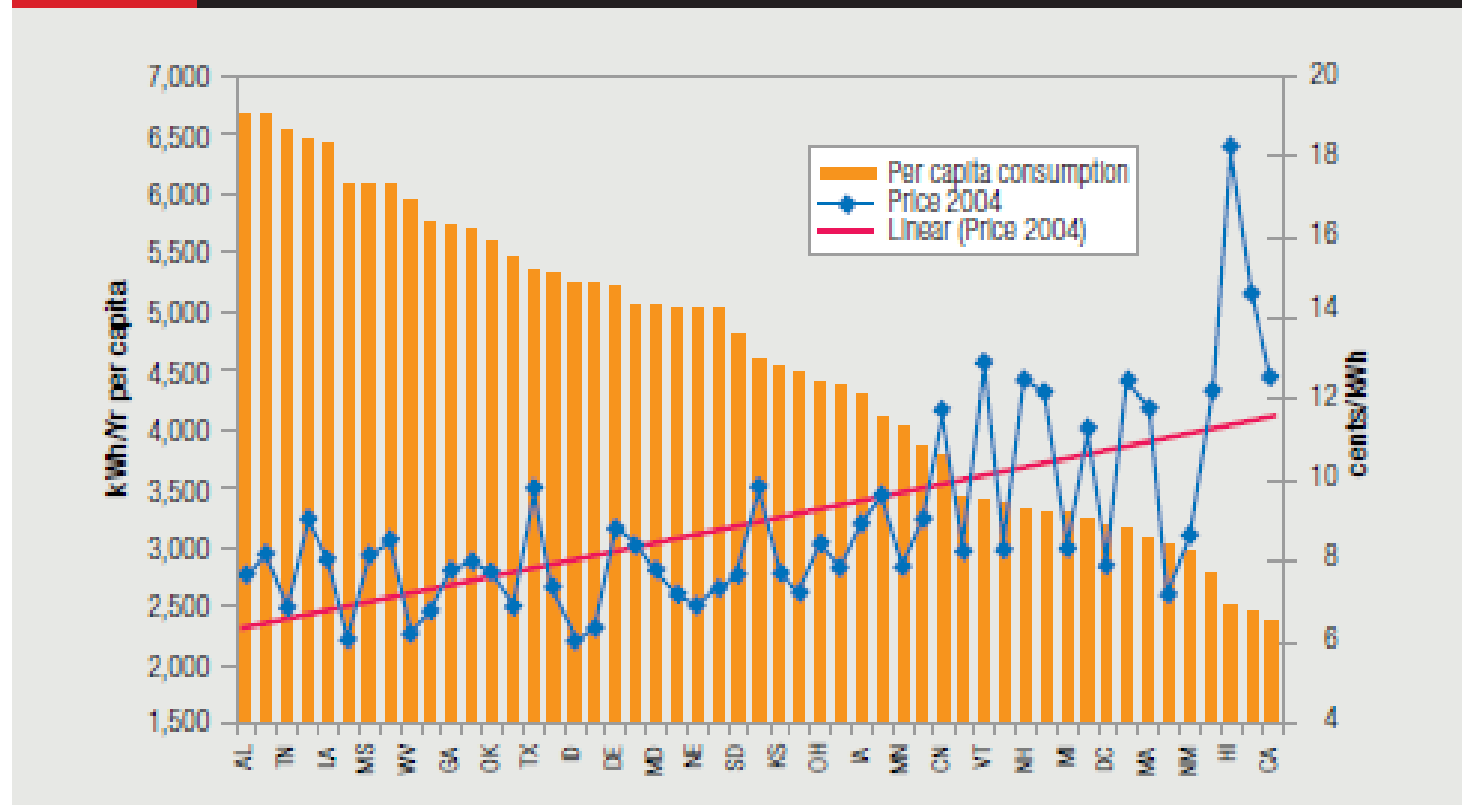


# Stabilizing California's Demand: The Real Reasons Behind the State's Energy Savings

Public Utilities Fortnightly March 2009

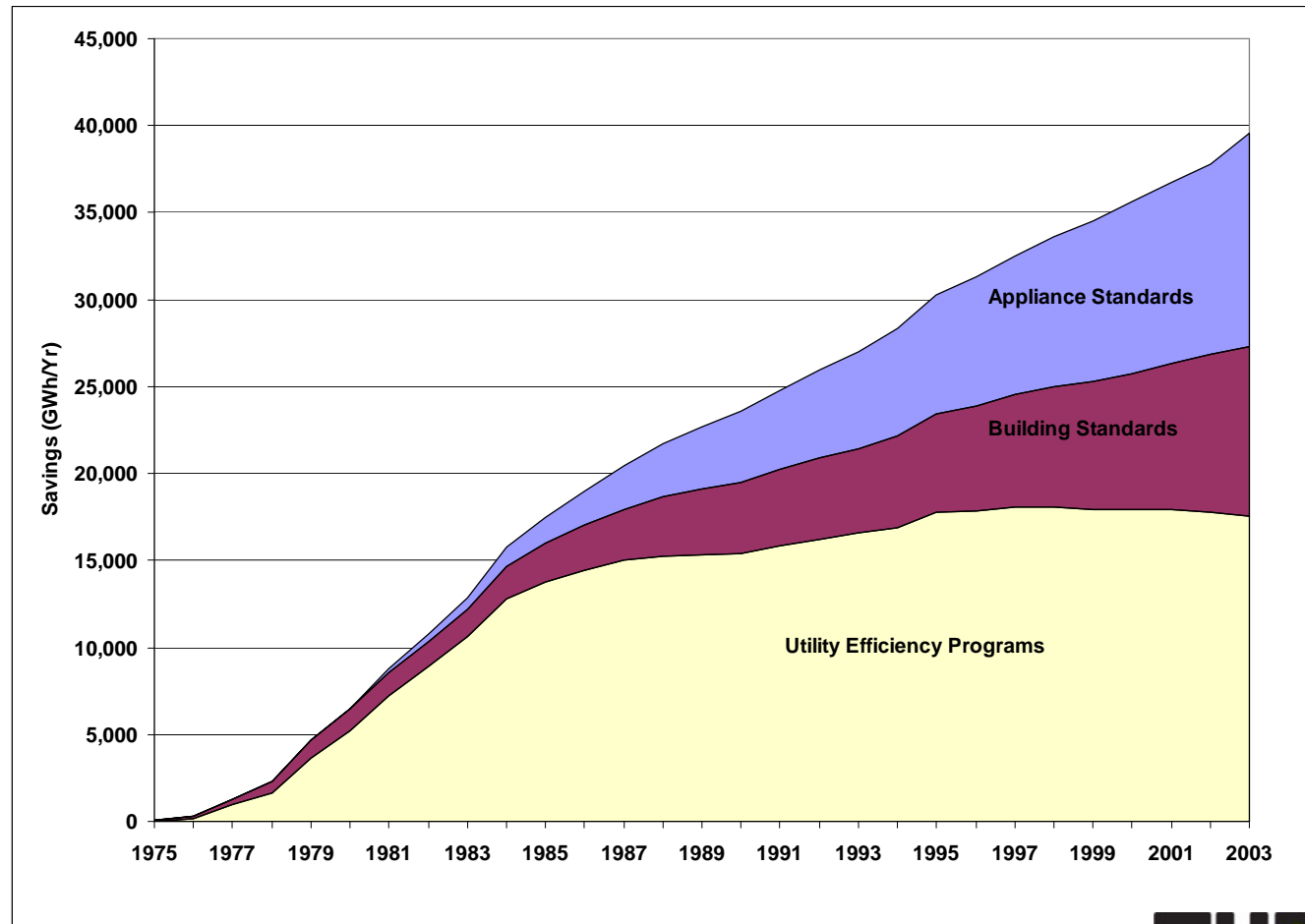
**FIG. 4**

**PER CAPITA RESIDENTIAL ELECTRICITY CONSUMPTION AND  
PRICE OF RESIDENTIAL ELECTRICITY: 2004 BY STATE**

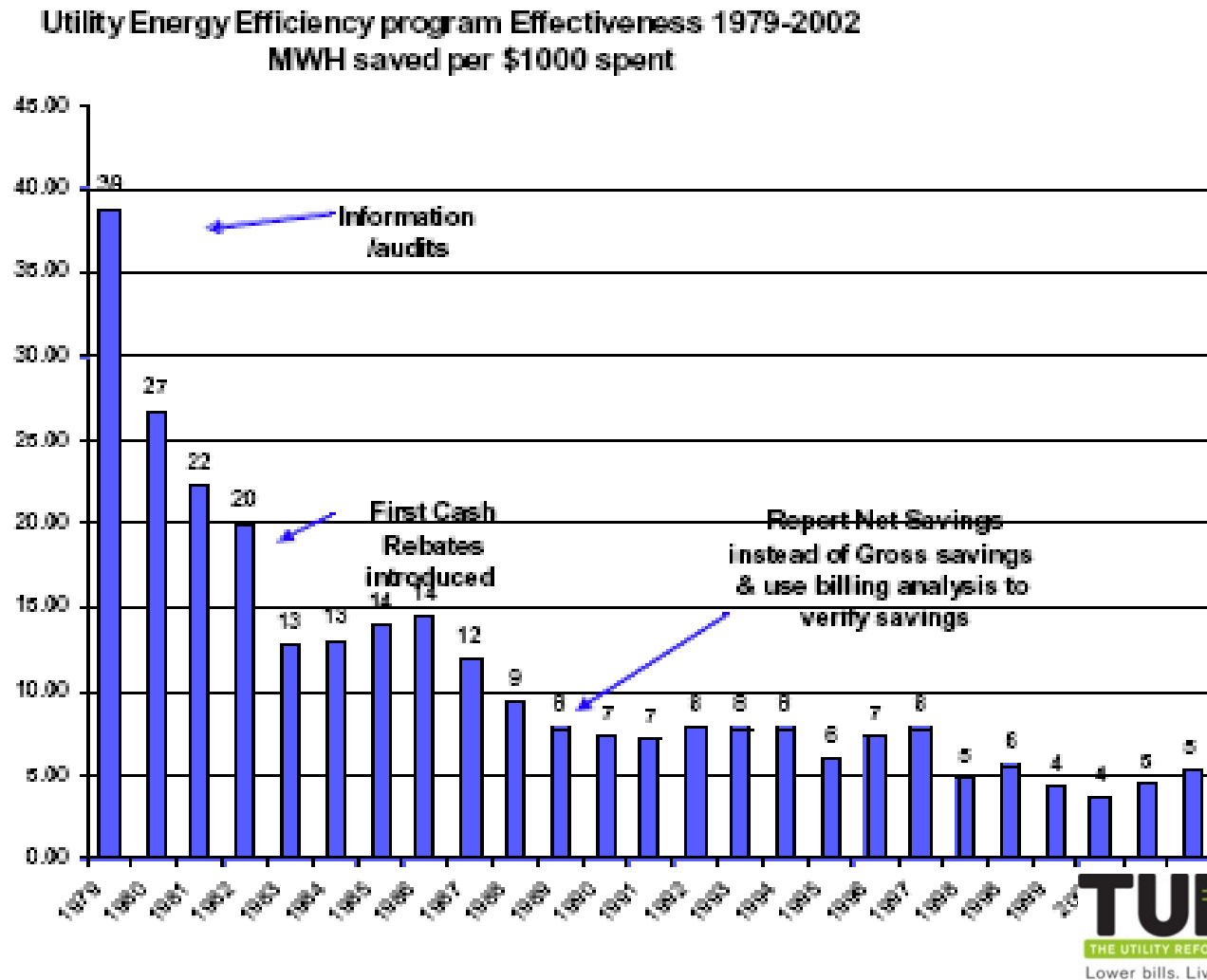




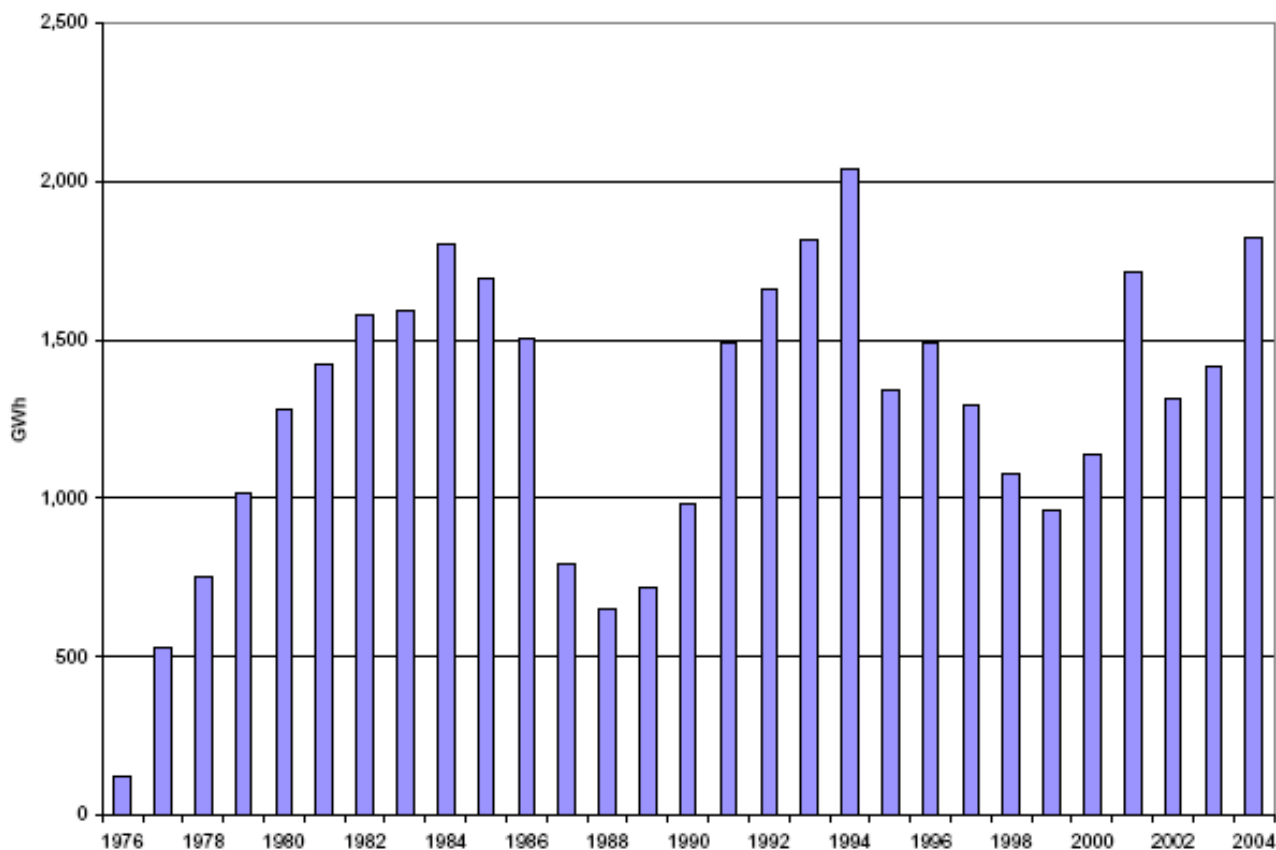
# Re-ordered CA Cumulative Energy GWh Savings: Utility EE Programs and Standards



# Trends in Utility Energy Efficiency Program Effectiveness



# Annual Energy Savings from Utility Efficiency Programs 1975-2004



Source: California Energy Commission DSM history files

# Which came first: reductions in per consumption reductions or utility EE programs?

- 1<sup>st</sup> decade CA EE occurred in a wider context, that likely substantially influenced electricity consumption, prompting consumers to reduce consumption.
- 1973-74 OPEC Oil Embargo & 1979 Iranian Revolution, and Iran-Iraq War of the early 1980's
- CA utility EE programs were just starting in 1975



# CA Energy Consumption Trends post-2005

- Absolute increases in energy consumption can occur even with energy (efficiency) savings
- CA electricity consumption has continued to increase btw 2005 & '08 (+1.7%); slight decline per capita (-0.8%)
- CA natural gas consumption has increased 6.5% btw 2005 & '07; +5.1% per capita

\* [http://www.eia.doe.gov/cneaf/electricity/epm/epm\\_sum.html](http://www.eia.doe.gov/cneaf/electricity/epm/epm_sum.html) &  
<http://quickfacts.census.gov/qfd/states/06000lk.html>

\*\* [http://tonto.eia.doe.gov/dnav/ng/ng\\_cons\\_sum\\_a\\_EPG0\\_VC0\\_mmc\\_f\\_a.htm](http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_a_EPG0_VC0_mmc_f_a.htm)

Deumling, Reuben. 2007. CPUC Energy Division White Paper. *"Separating Means and Ends: Reorienting Energy Efficiency Programs and Policy toward Reducing Energy Consumption in California"*  
[http://www.cpuc.ca.gov/NR/rdonlyres/D5CFAD3F-A4EC-4721-BD79-D4BD6AC72257/0/EDWhitePaper\\_MeansAndEnds\\_090402.pdf](http://www.cpuc.ca.gov/NR/rdonlyres/D5CFAD3F-A4EC-4721-BD79-D4BD6AC72257/0/EDWhitePaper_MeansAndEnds_090402.pdf)

# NRDC Presentation

## Sierra Martinez (p. 9)

Figure 3: Original Graph of Energy Efficiency Savings  
(Published in 2005 in Energy Action Plan)<sup>17</sup>

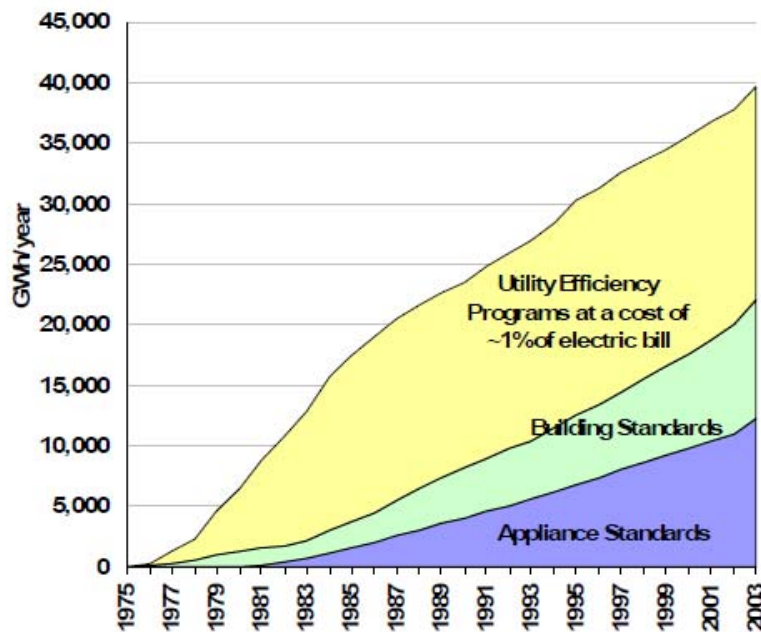
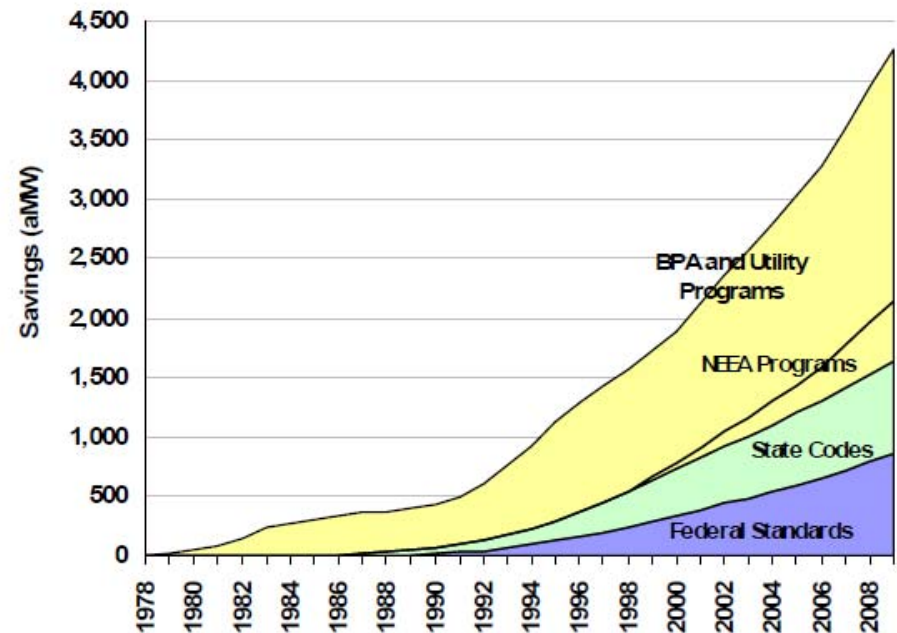
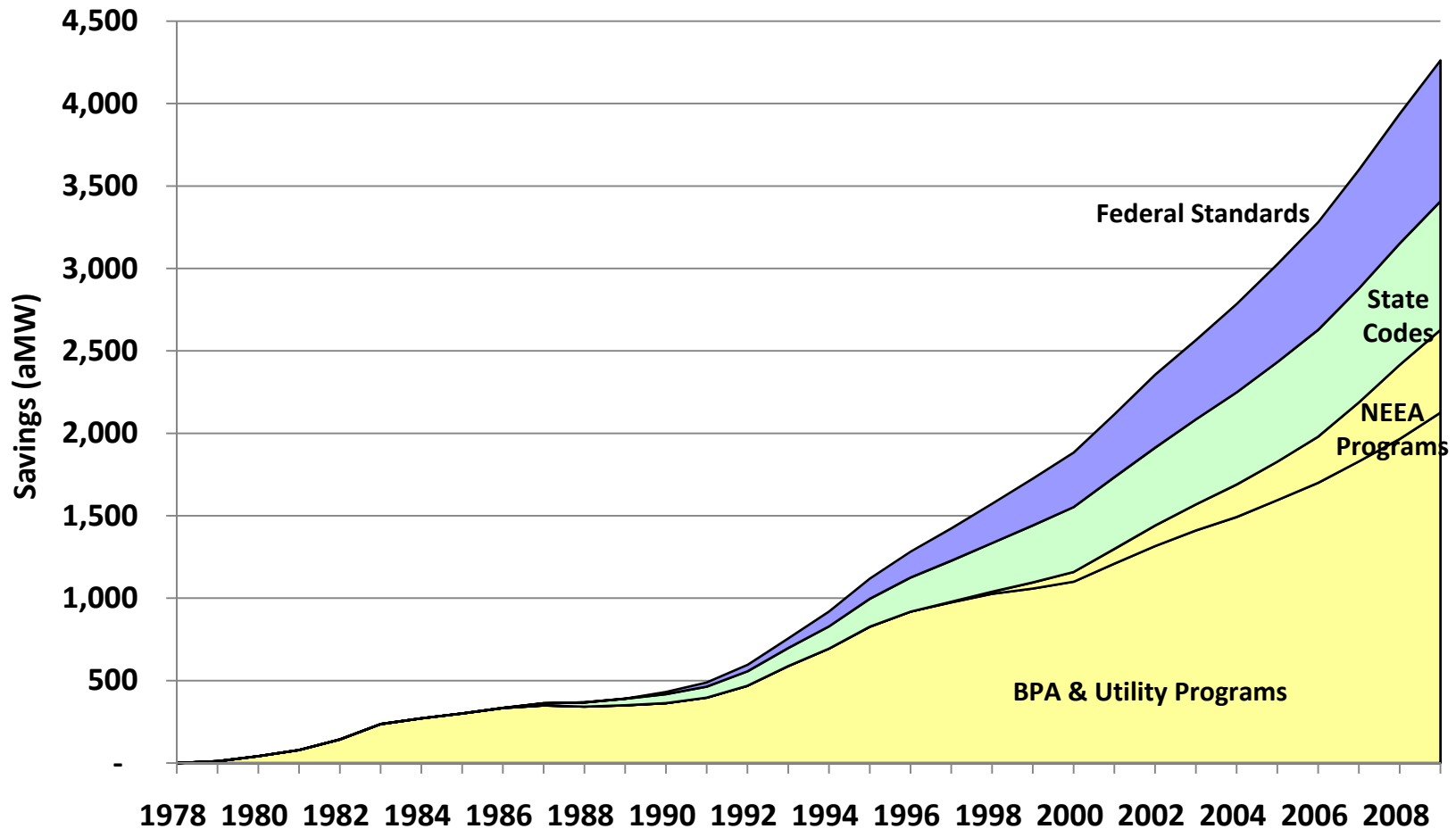


Figure 4: Graph of Energy Efficiency Savings.  
(Published in NPCC's 2010 6th Power Plan)<sup>18</sup>



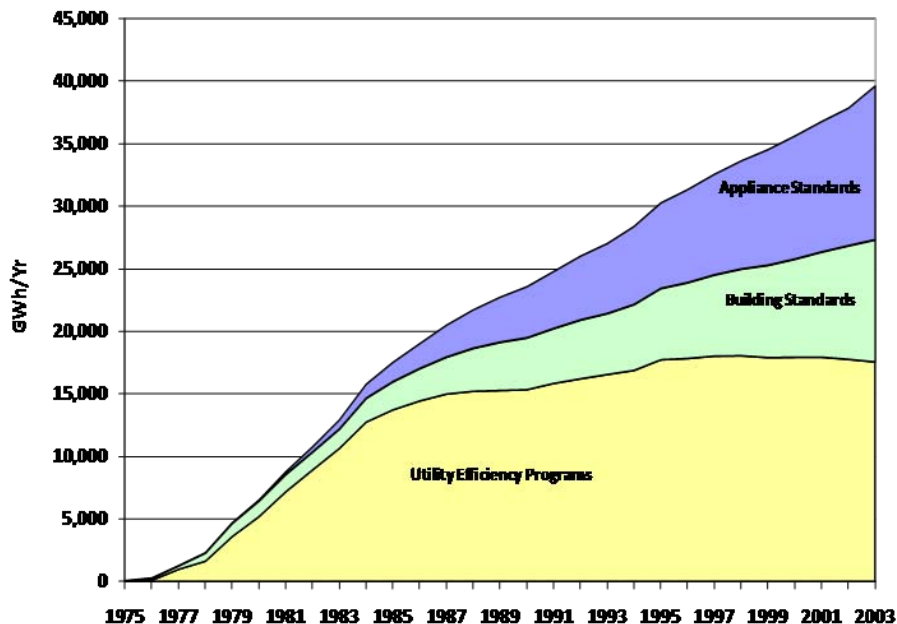
# NPCC Re-ordered Savings



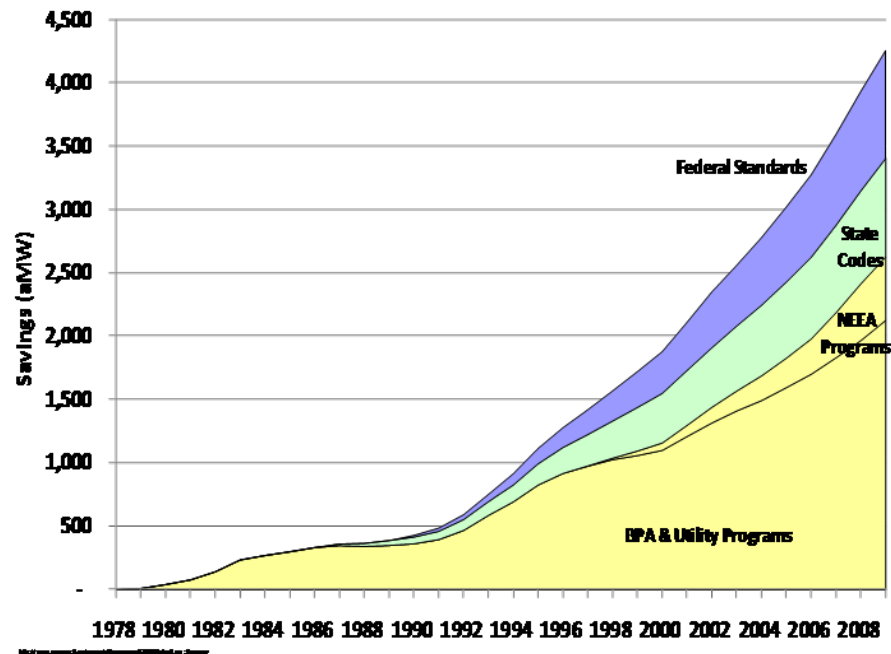
<http://www.nwccouncil.org/energy/rtrf/consreport/2009/Default.asp> ; Summary

# Comparison: California and NPCC Re-ordered Savings

## CA EE Savings 1975-2003

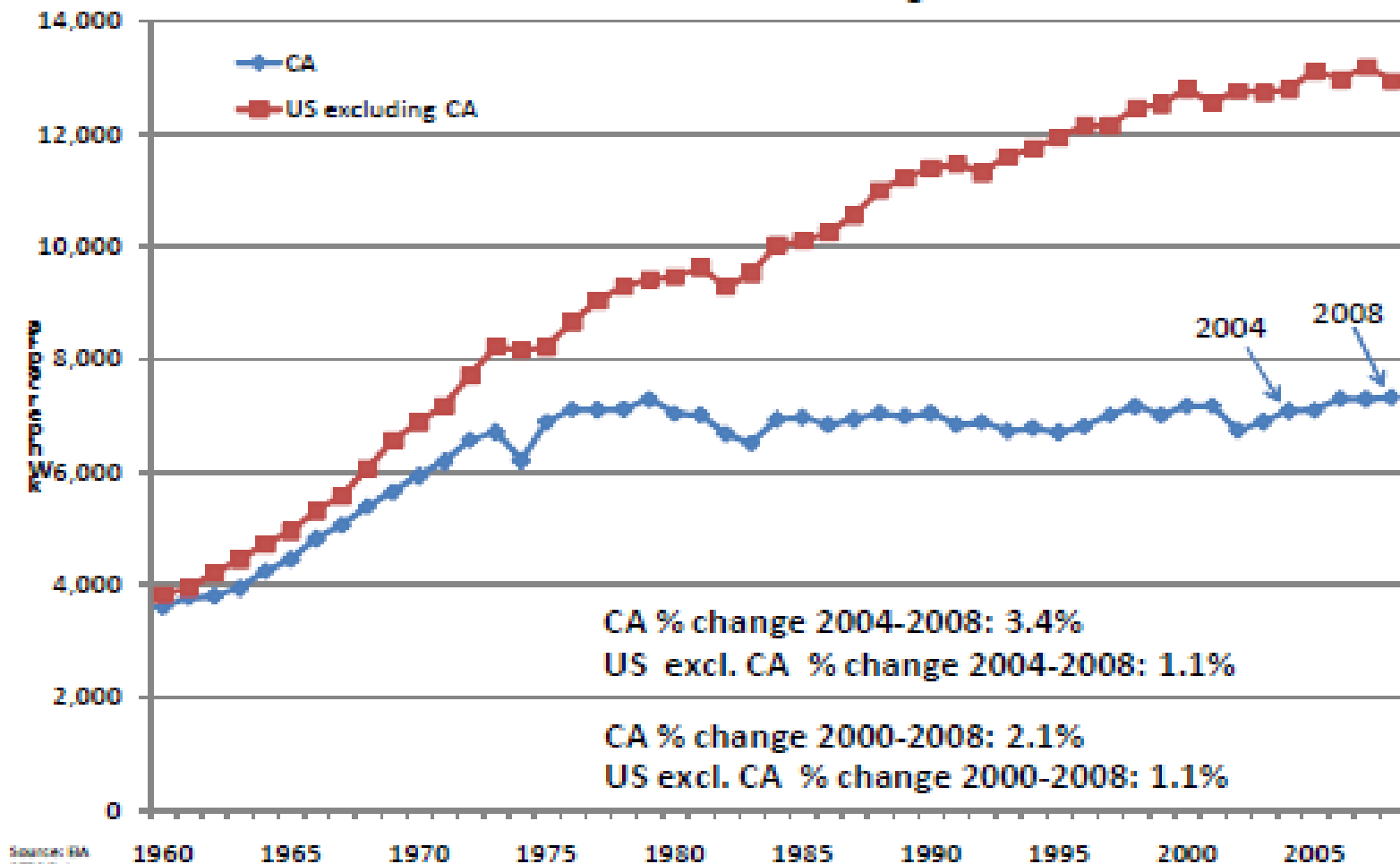


## NPCC EE Savings 1978-2009

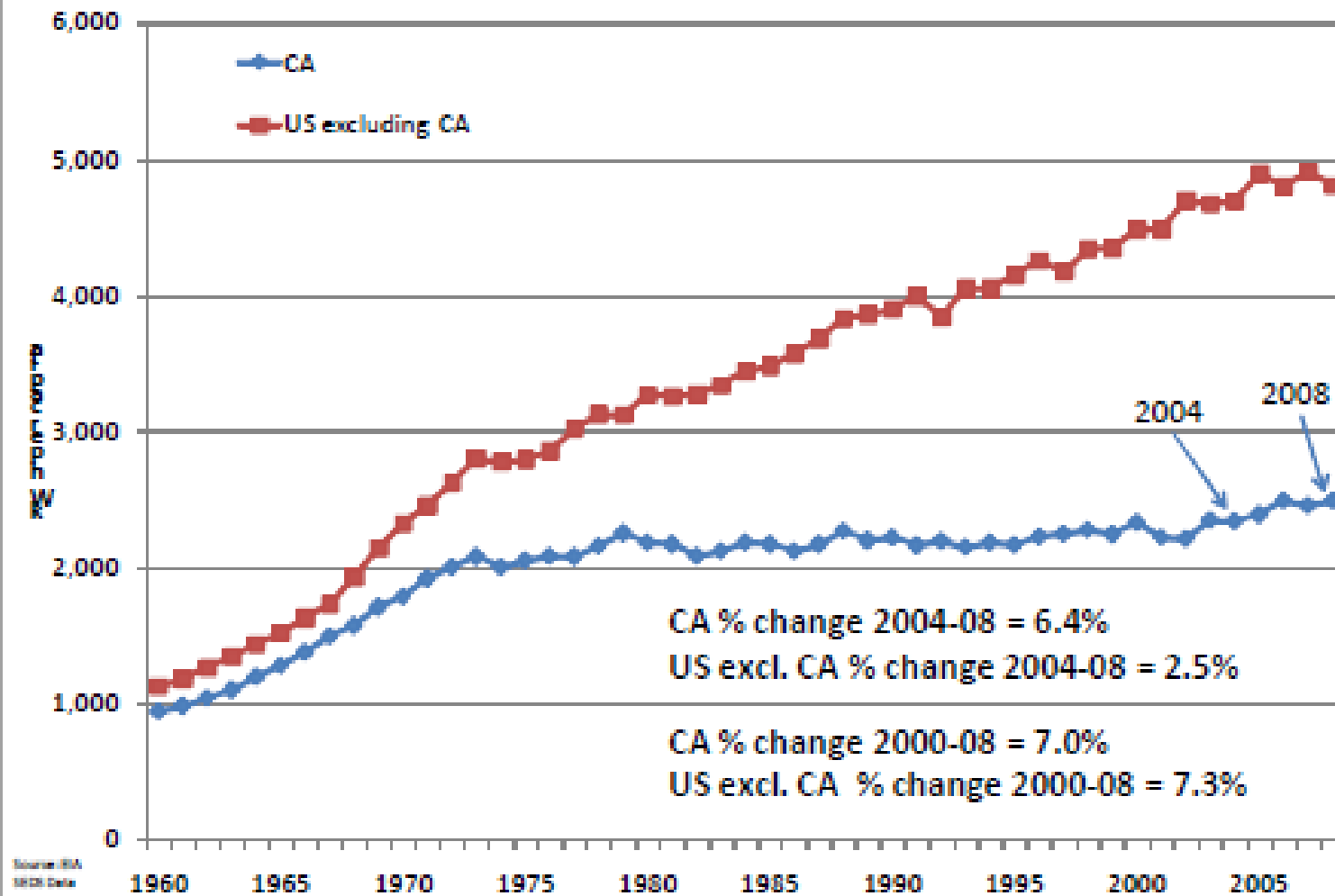




**TURN Figure 1: Per Capita Total Electricity Consumption 1960-2008:  
California and US excluding CA**



TURN Figure 2: Per Capita Residential Electricity Consumption  
1960-2008: California and US excluding CA



**“Facts do not cease to exist because they are ignored.”**

**-Aldous Huxley**

**“Re-define success and still fail”**

**- Anonymous**