

# Promoting Energy Efficiency in California

State EE/RE Technical Forum

*Call #8 – Decoupling Energy Sales from Revenues  
and Other Approaches to Encourage Utility  
Investment in Efficiency*

*May 18, 2005*



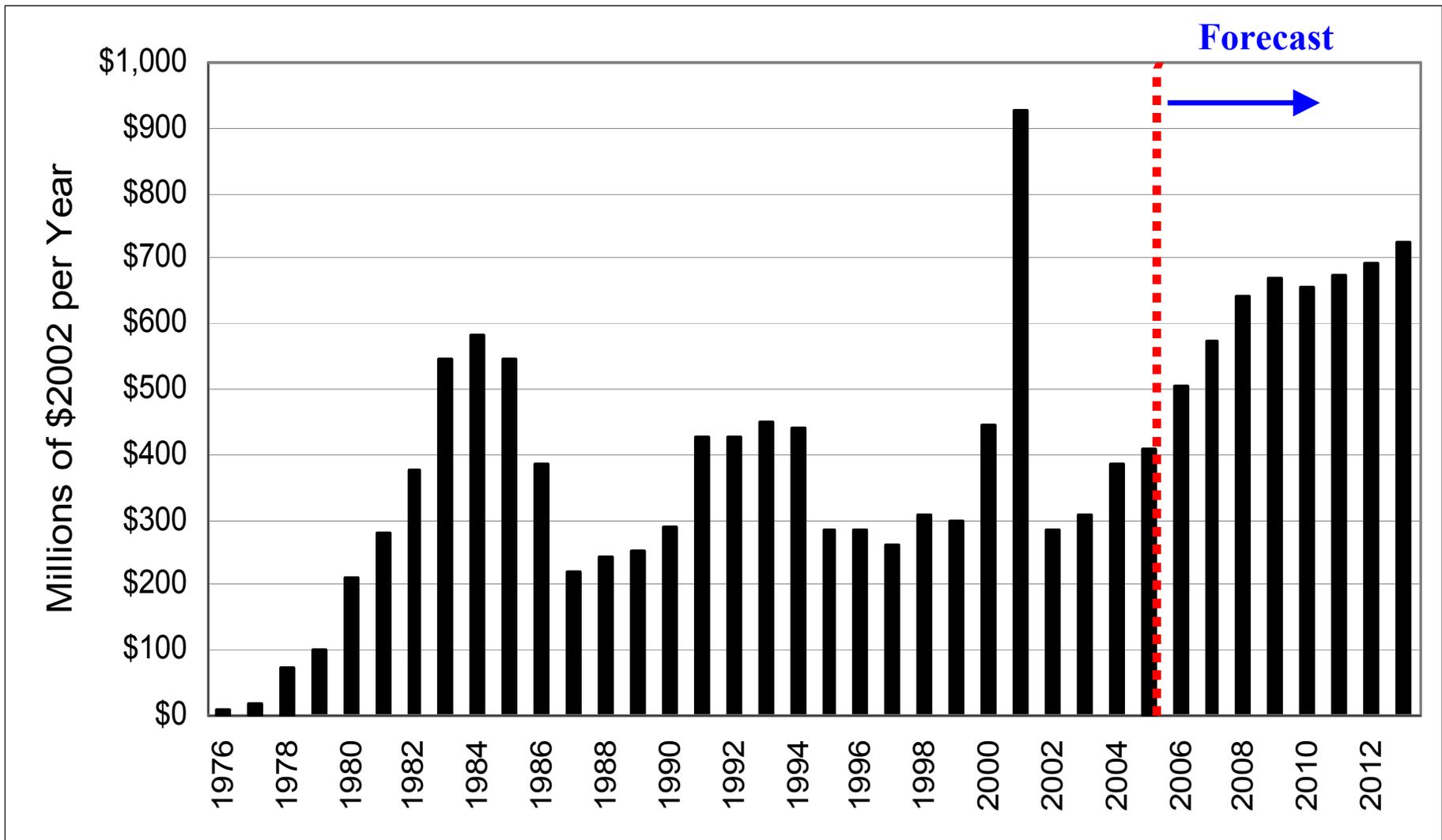
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# Outline

- ERAM - California's History with Decoupling
- Restructuring - How California Made The Wrong Choice for Energy Efficiency
- The New Era of Decoupling
- Utility-Specific Examples
- California's Move Towards Resource-Specific Performance Incentives
- Additional Barriers to Energy Efficiency Investments

# California's Energy Efficiency Investment Trend



# The History of Decoupling

## *Electric Revenue Adjustment Mechanism*

- In 1982, the CPUC Adopted ERAM to:
  - Decouple utility revenue from sales
  - Remove disincentives for energy efficiency and conservation
- Required utilities to track difference between actual and forecasted base rate revenues
  - Overcollections refunded to ratepayers
  - Undercollections recovered from ratepayer
- Allowed utilities to recover revenue requirement independent of actual sales

# Results of ERAM

- True-ups related to ERAM balances account for only a small proportion of the total change in utility revenue requirements from 1982 - 1992<sup>1</sup>

<sup>1</sup>J. Eto, S. Stoft, T. Belden, *The Theory and Practice of Decoupling*, Lawrence Berkeley National Laboratory, Berkeley, California., LBL - 34555, 1994

# Elimination of ERAM - 1996

- “Introduction of competition for generation will render ineffective the CPUC’s past approach of supporting Demand Side Management by using ERAM to counter the utility’s economic incentive to increase sales.”<sup>2</sup>
- General belief that there was no reason to worry about utilities’ energy efficiency incentives since they would transfer their resource management responsibilities to unregulated participants in wholesale and retail electricity markets.

<sup>2</sup>CPUC, D.96-12-077

# Post-Restructuring - 2001

- Energy crisis reaffirmed need to have utilities play a role in portfolio management
- The Legislature, through AB29X, made the CPUC “ensure that errors in estimates of demand elasticity or sales do not result in material over or undercollections of the electrical corporations.”<sup>3</sup>
  - Ruled out any rate indexing that tied earnings to sales fluctuations
  - Provided utilities with assurance of cost recovery for authorized revenue requirements

<sup>3</sup>Public Utilities Code Section 739.10

# Common Themes for Decoupling

- Use of balancing accounts for annual true-ups in rates protects utilities from fluctuations in revenues caused from fluctuations in sales.
- Rate cases determine initial revenue requirements.
  - Attrition mechanisms escalate revenue requirement by inflation minus a productivity offset every year, and adds a factor to account for customer growth; **or**
  - Inflation adjustment (CPI) escalates revenue requirement each year, bounded by a minimum and maximum.
- Keep chipping away at the block...

# Southern California Gas

- *Almost Completely Decoupled*
- Not at-risk for fluctuations in natural gas throughput for transmission revenues (~\$1.5 Billion annually)
- At-risk for non-core storage service revenues (~\$23 Million annually)
- Gas costs are passed through but must meet performance benchmarks
- “Cost of Service” determined in rate cases and adjusted by CPI - 2% min/4% max

# San Diego Gas & Electric

- 2004 - Switched from rate indexing with no decoupling to decoupling
- Performance-based ratemaking framework with a term of four years
- “Cost of Service” adjusted annually for inflation (CPI), subject to minimum and maximum levels
  - ~\$1 Billion worth of revenues decoupled on distribution side
  - ~\$340 Million worth of revenues decoupled on transmission side

# Southern California Edison

- Distribution and generation decoupled
- Performance-based ratemaking, which provides for an attrition mechanism that escalates the revenue requirement by inflation minus a productivity offset every year, and adds a factor to account for customer growth.

# Pacific Gas and Electric

- *Moving closer to full decoupling*
- **Electric** - In 2004, CPUC approved revenue adjustment mechanisms similar to those of SDG&E
- **Gas** - Current decoupling structure in place since 1997
  - ~\$1.05 Billion of base gas revenues decoupled (88%)
  - ~\$149 Million of base gas revenues at-risk (12%)
- At-risk revenues found in non-core customer services - transmission and storage

# How are Earnings Determined?

- Incentive Mechanisms
- Management of Costs
- Strong Productivity Growth (a.k.a customer growth)
- Bounded by Earnings Sharing Mechanisms

# Moving Towards Incentives

- CPUC is currently undergoing massive revisions to establish a common performance basis for energy efficiency programs that defer more costly supply-side investments (resource programs)
- Once this is accomplished, we will work on establishing “performance incentives” for energy efficiency programs.



# **Additional Barriers to**

## Additional Information...

- Please see next few slides...
- Article: *Do Portfolio Managers Have an Inherent Conflict of Interest with Energy Efficiency?* - D. Bachrach, S. Carter and S. Jaffe (NRDC), The Electricity Journal, Oct. 2004
- Brian Prusnek - [bcp@cpuc.ca.gov](mailto:bcp@cpuc.ca.gov)

# Energy Action Plan

Unprecedented Collaboration by CA Energy Agencies  
(CPUC, CEC, CPA, ISO, Resources, BTH)

## **GOALS:**

- Meet California's energy growth needs while optimizing energy conservation
- Decrease per capita energy use and reduce toxic emissions and greenhouse
- Loading Order for energy resources:  
Conservation & Efficiency, Renewable & Distributed Generation, Clean Fossil Fuels & Transmission

# Integrated Resource Planning

Post-Crisis: IOUs resume full responsibility for procurement and obligation to serve

Utilities must integrate all cost-effective Energy Efficiency into overall procurement forecasts and resource acquisition

- Demand-side Resources
- Renewable Energy
- Distributed and Self-generation,
- Conventional Generation & Transmission

# EAP Energy Efficiency Goals:

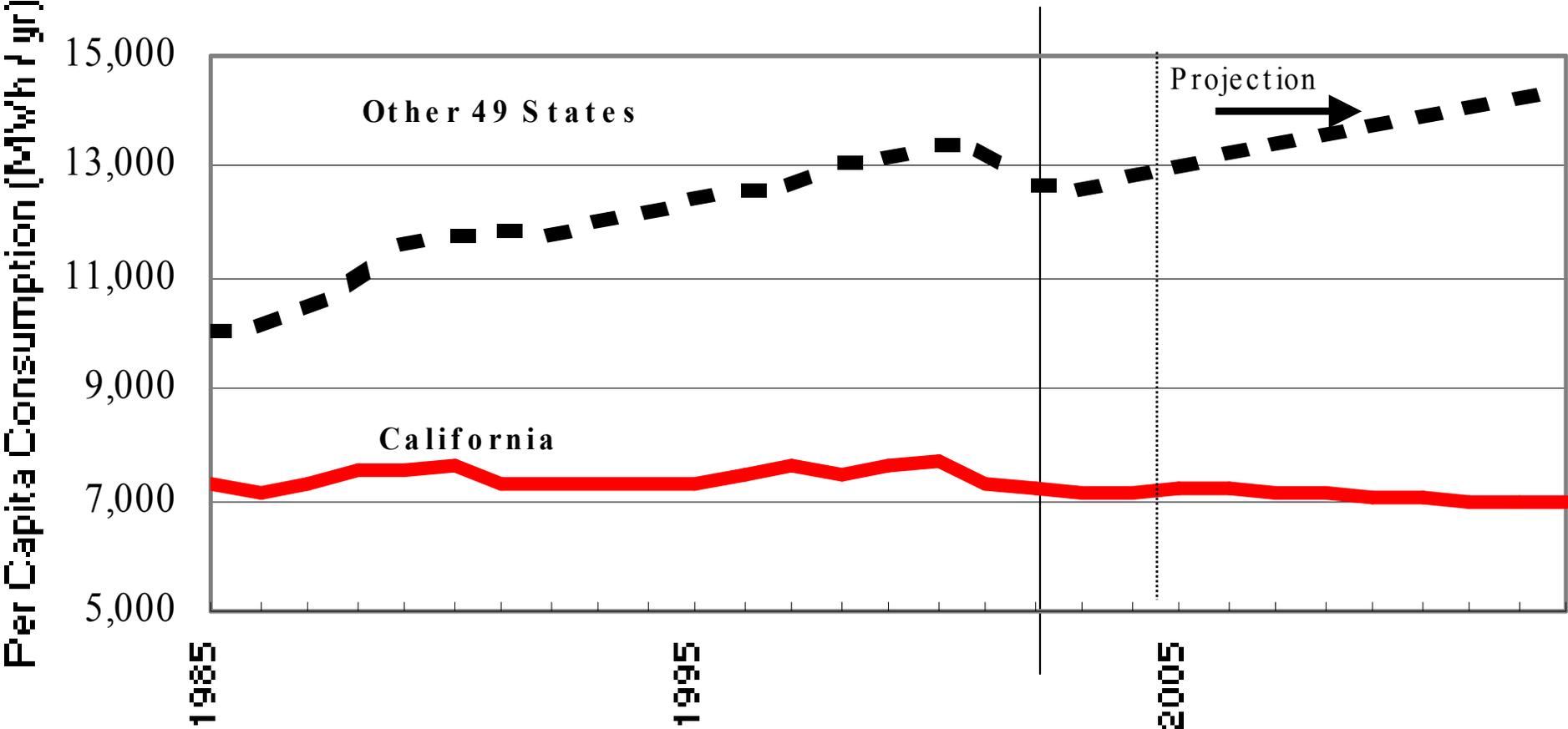
- Improve new and remodeled building efficiency by 5%
- Improve air conditioner efficiency by 10% above federally mandated standards
- Make new state buildings a model of energy efficiency
- Increase local government conservation and energy efficiency programs.

# EAP Energy Efficiency Plan:

- Utilities directed to achieve a 1% per capita per year energy reduction
- PUC adopts first-ever savings targets for electricity and natural gas (2004-2013)
  - 26,508 Gwh,
  - 6,892 MW
  - 290 million therms
- 55% to 59% of IOUs' incremental electric energy needs over 10 years
- Most aggressive goals in the nation

# California vs. United States

## Per Capita Consumption: California vs. Other 49 States



# Putting EE in Context:

- CA needs 10 new power plants by 2013 to meet incremental growth in demand
  - Energy Efficiency eliminates need for 5 new plants
- Natural Gas efficiency savings (444 MMth) will cut growth in end-use consumption almost in half by 2013
  - Enough to supply the city of Long Beach annually
- 9 million tons of carbon dioxide emissions
  - 1.8 million passenger vehicles (40% of Bay Area)
- \$10 billion in net savings to consumers

# The Future of Energy Efficiency

- CPUC adopted a stable, integrated resource planning structure that will more than double the level of energy efficiency savings in 10 yrs
- Energy Efficiency funding 2004-2005 - \$800 M

**Goal:** Meet **100%** of California's energy growth over the next decade through **energy efficiency**, demand reduction and renewable resources