Energy Efficiency Action Plan – Context and Framework

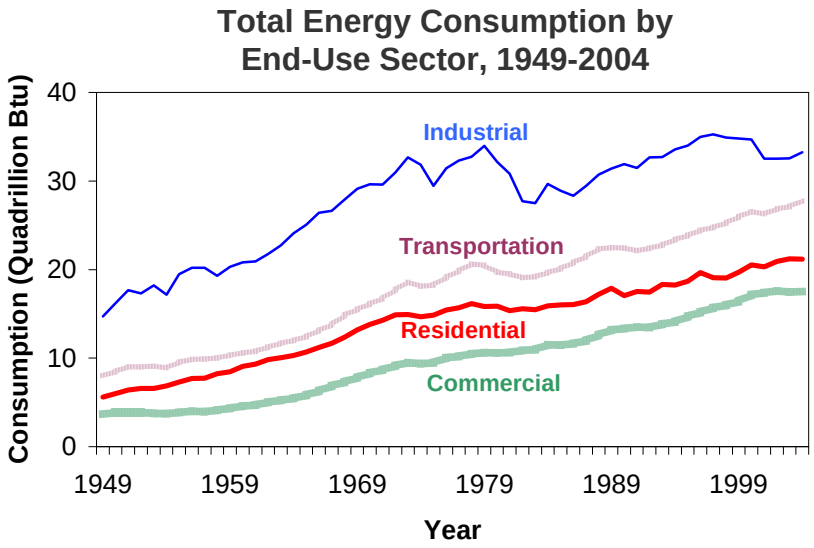
Background Presentation for
Leadership Group Members
Dec. 2, 2005

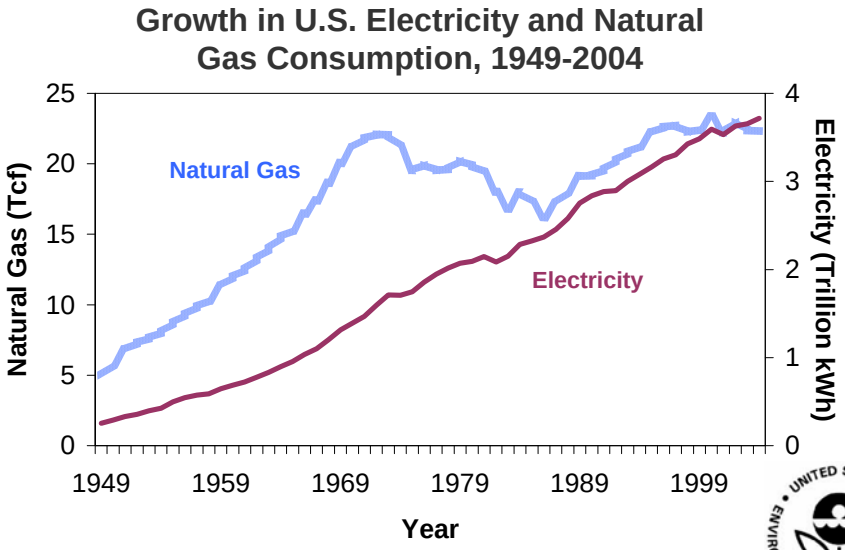
Overview of Energy Efficiency Action Plan

- Many cost-effective energy efficiency solutions
  - Well-designed and cost-effective programs that work
  - Significant potential for greater investment and savings
- Utilities well positioned to deliver more efficiency, but barriers exist
- Leadership Group will
  - Develop business cases
    - for policies that remove barriers to EE
    - for EE investment
  - Examine/document EE programs that work
  - Develop recommendations
  - Agree to implement/spread the solutions

Time for Action on Energy Efficiency

- Energy demand continues to grow
- Higher energy prices than seen for decades
- High energy expenditures
- Reliability issues
- Capital expenses for generation, transmission and congestion relief
- Investment risk associated with climate change
- Security concerns



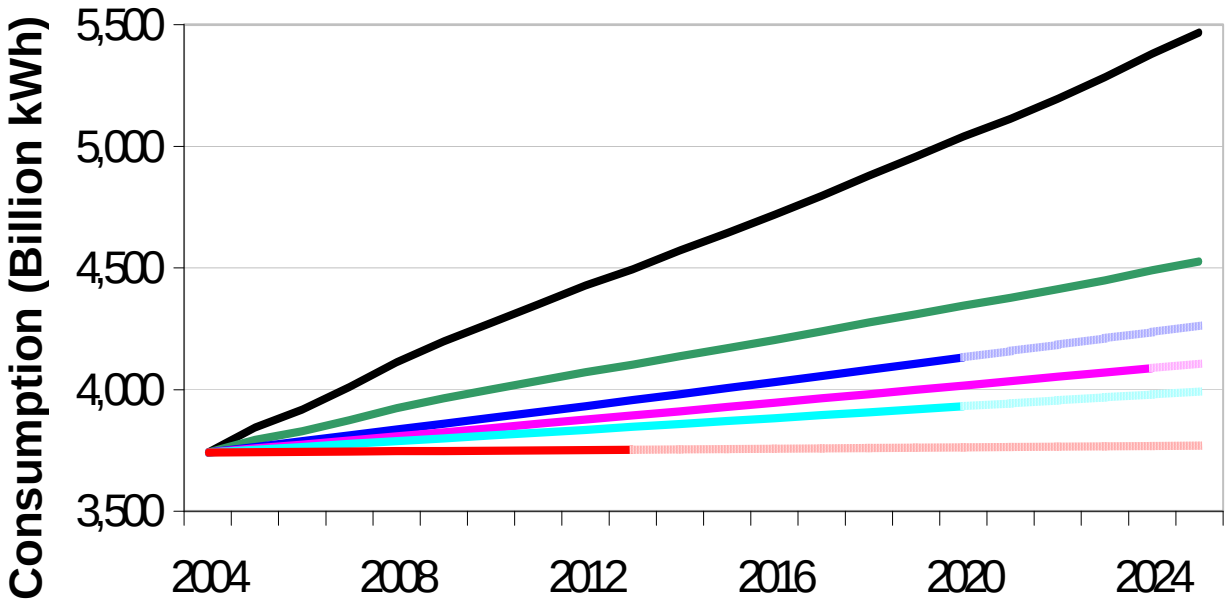


Sources: EIA Annual Energy Review 2004

Benefits of Energy Efficiency

- **Economic**
  - Lower cost compared to new generation and transmission
  - Downward pressure on natural gas prices and volatility
  - Lower wholesale electricity prices
  - Improved local economy and service to low income and seniors
- **Utility System Benefits**
  - Near-term fix with persistent, long-term benefits
  - Improved security of electricity and gas systems
  - Improved resilience due to lower reliance on fossil fuels
  - Lower baseload and peak demand
  - Reduce need for “hard to site” G&T assets
  - Targeted, modular, manageable
- **Environmental**
  - Lower greenhouse gas emissions and criteria pollutants
  - Lower water use
- **Risk Management**
  - Diversifies utility resource portfolios

EE Can Help Control Electricity Growth



AEO 2005 Reference Case [avg. annual growth 1.8%]

Half Growth Scenario reduction by 2025) [avg. annual growth 0.9%]

5 Labs Study reduction by 2020) [avg. annual growth 0.6%]

ACEEE median achievable (17% (24% reduction in 20 years) [avg. annual growth 0.5%]

NV Study reduction by 2020) [avg. annual growth 0.3%]

NEEP Study reduction by 2013) [avg. annual growth <0.1%]

(18%

Sources: EIA AEO 2005, ACEEE, SWEEP, NEEP

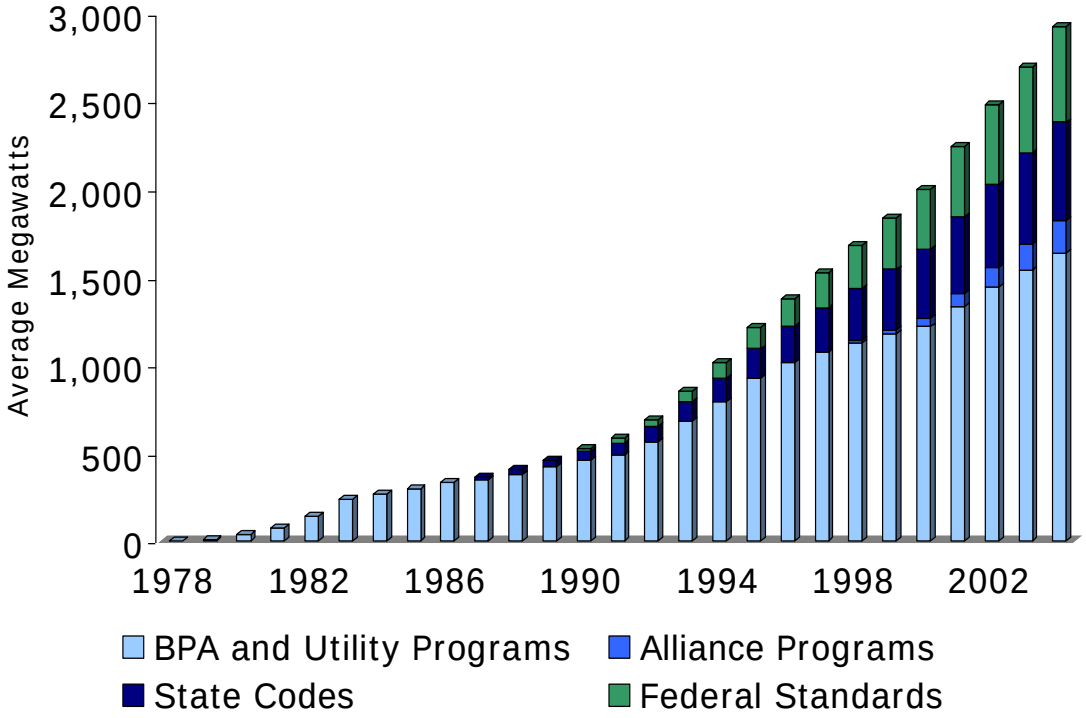
(22%

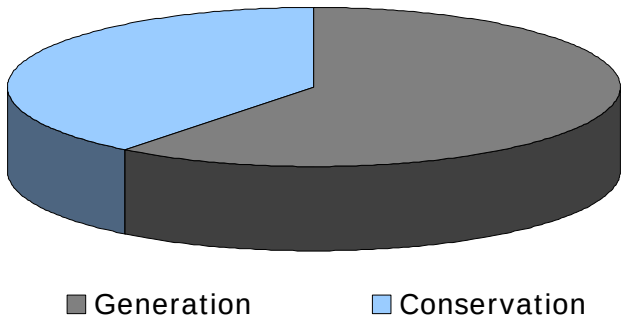
(17%

Look at NW -- Last Twenty+ Years

Since 1978, energy efficiency programs have produced nearly 3000 aMW of savings.

Energy efficiency met nearly 40% of PNW regional firm sales growth from 1980 - 2003.

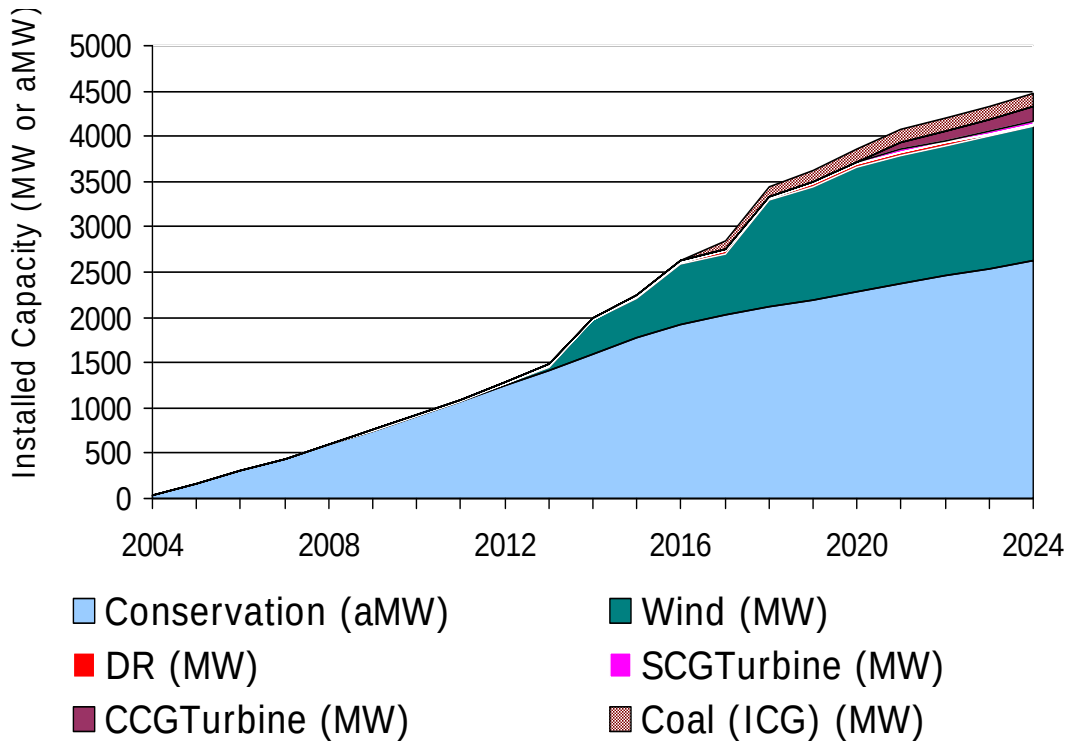




Northwest Power and Conservation Council

Look at the NW – Next Twenty Years

5th Plan Relies on Conservation and Renewable Resources to Meet Load Growth



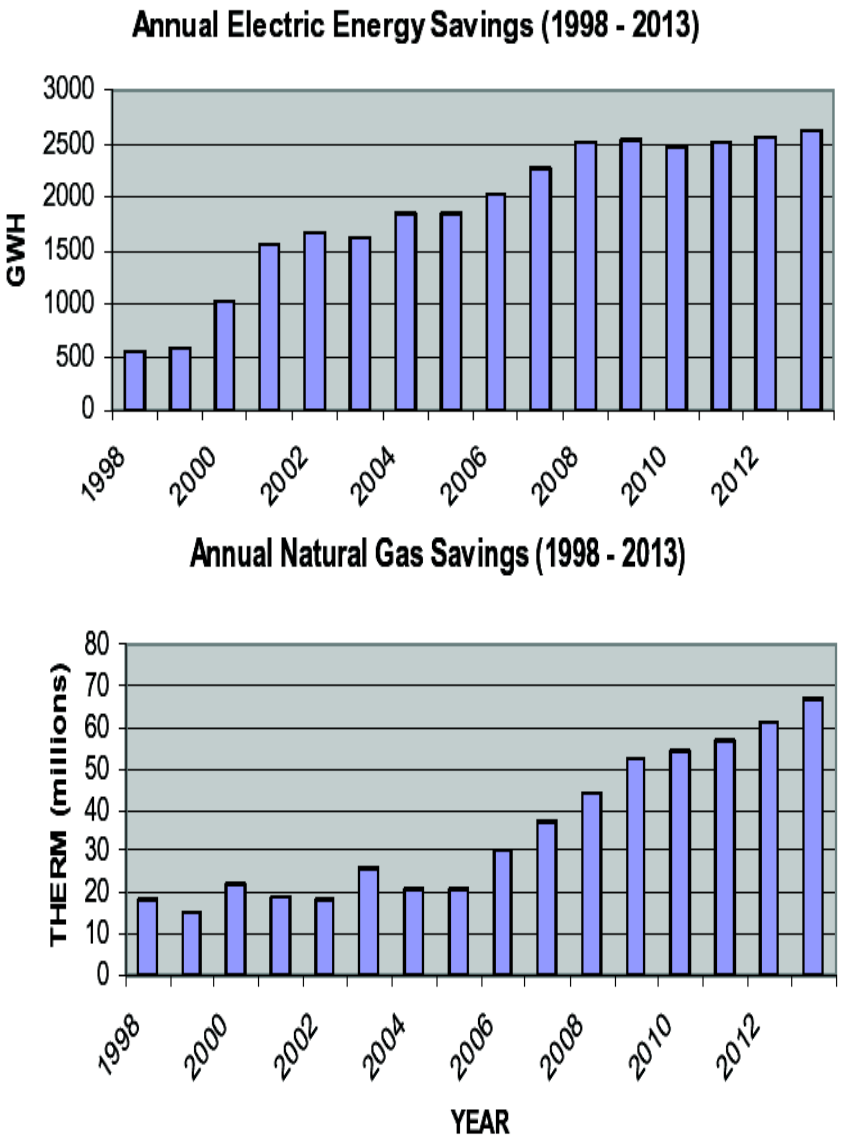
Cost-Effective and Achievable Conservation Should Meet Over 45% of PNW Load Growth from 2005-2025*

Energy Efficiency Reduces System Cost and Risk

--It is cheap (avg. 2.4 ¢/kWh TRC)
--Hedge against market price spikes
--Not subject to fuel price risk
--Not subject to carbon control risk
--Significant enough in size to delay "build decisions" on generation

Northwest Power and Conservation Council

Look at California

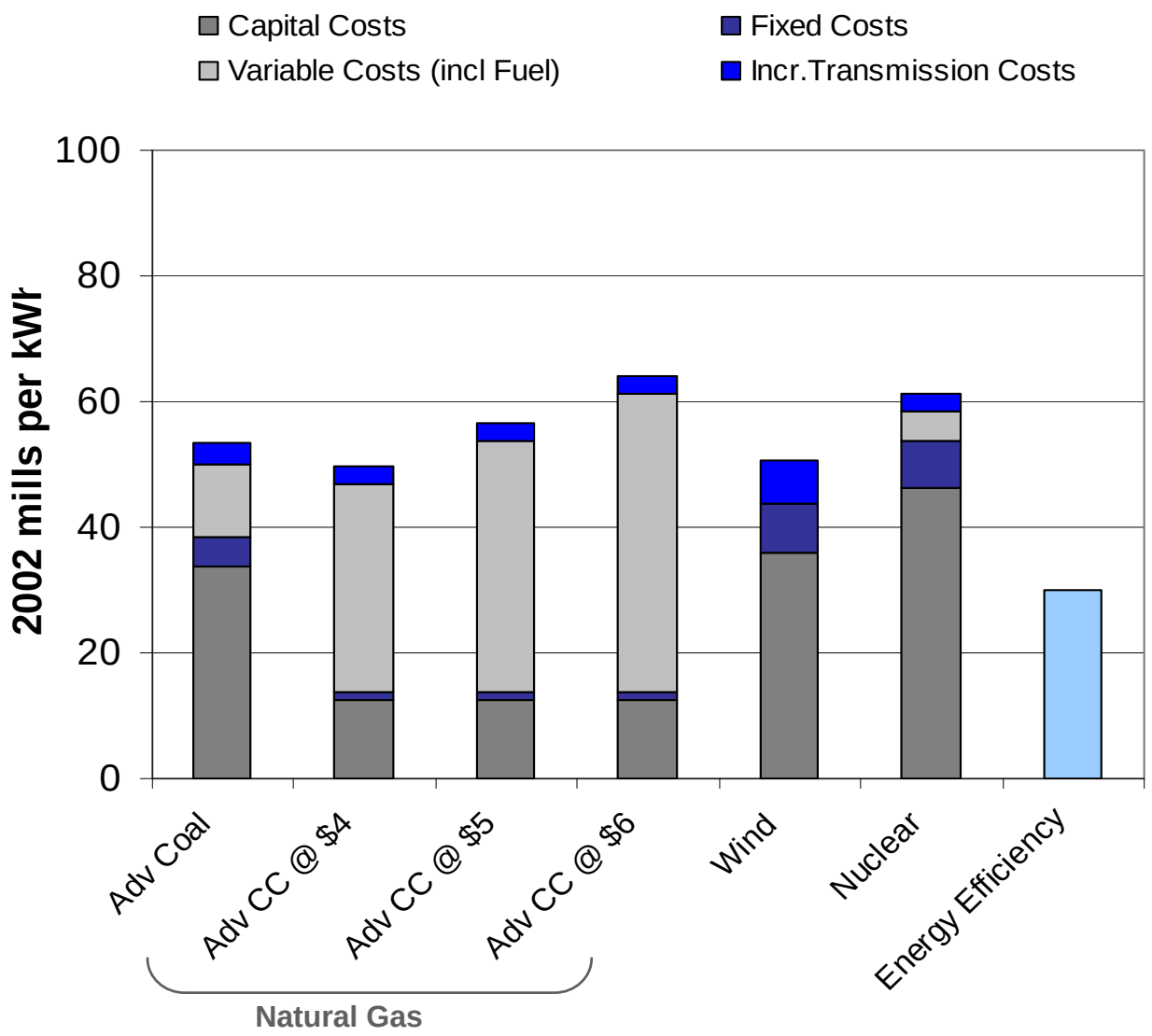


CA Energy Commission concluded in 2003 that CA could save an additional 30,000 GWh from energy efficiency programs over the next decade.

In 2004 the CPUC adopted aggressive energy savings goals to reach this potential, and authorized increase in energy efficiency funding.

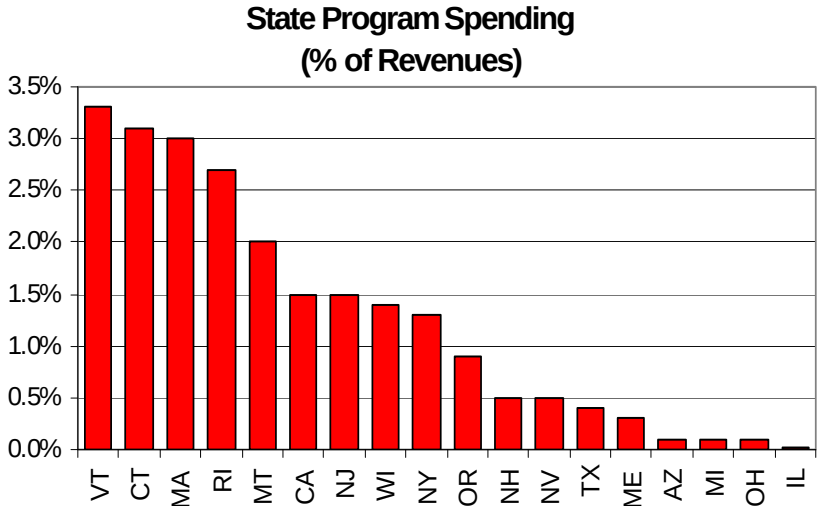
Meeting these goals will reduce the utilities' need for additional electricity supplies between 2004 and 2013 by more than half.

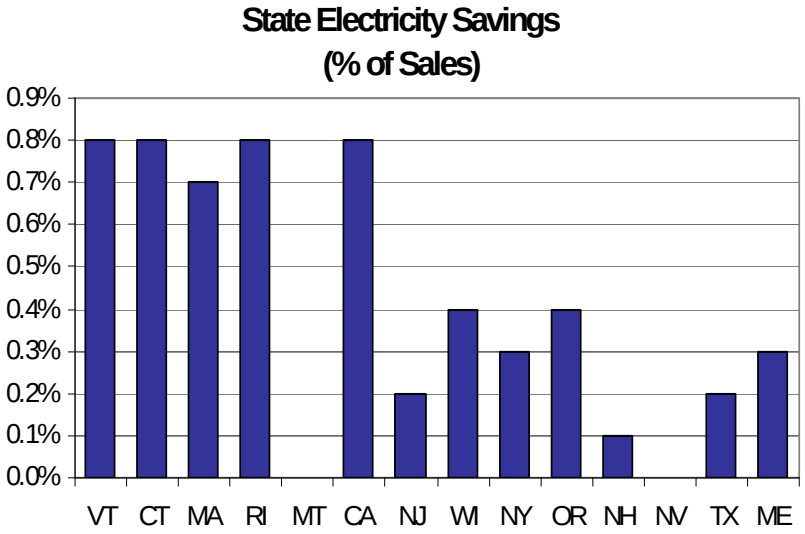
Energy Efficiency is Cost Competitive

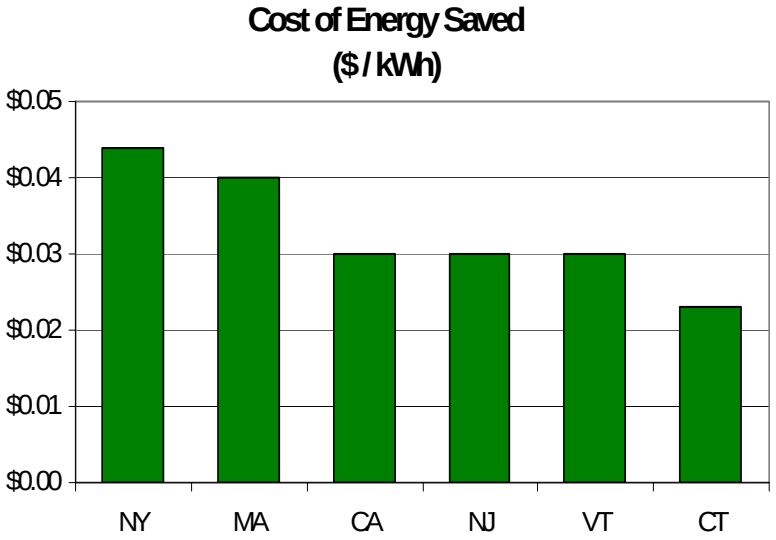


Sources: EIA 2004, ACEEE 2004

Recent EE Program Experience





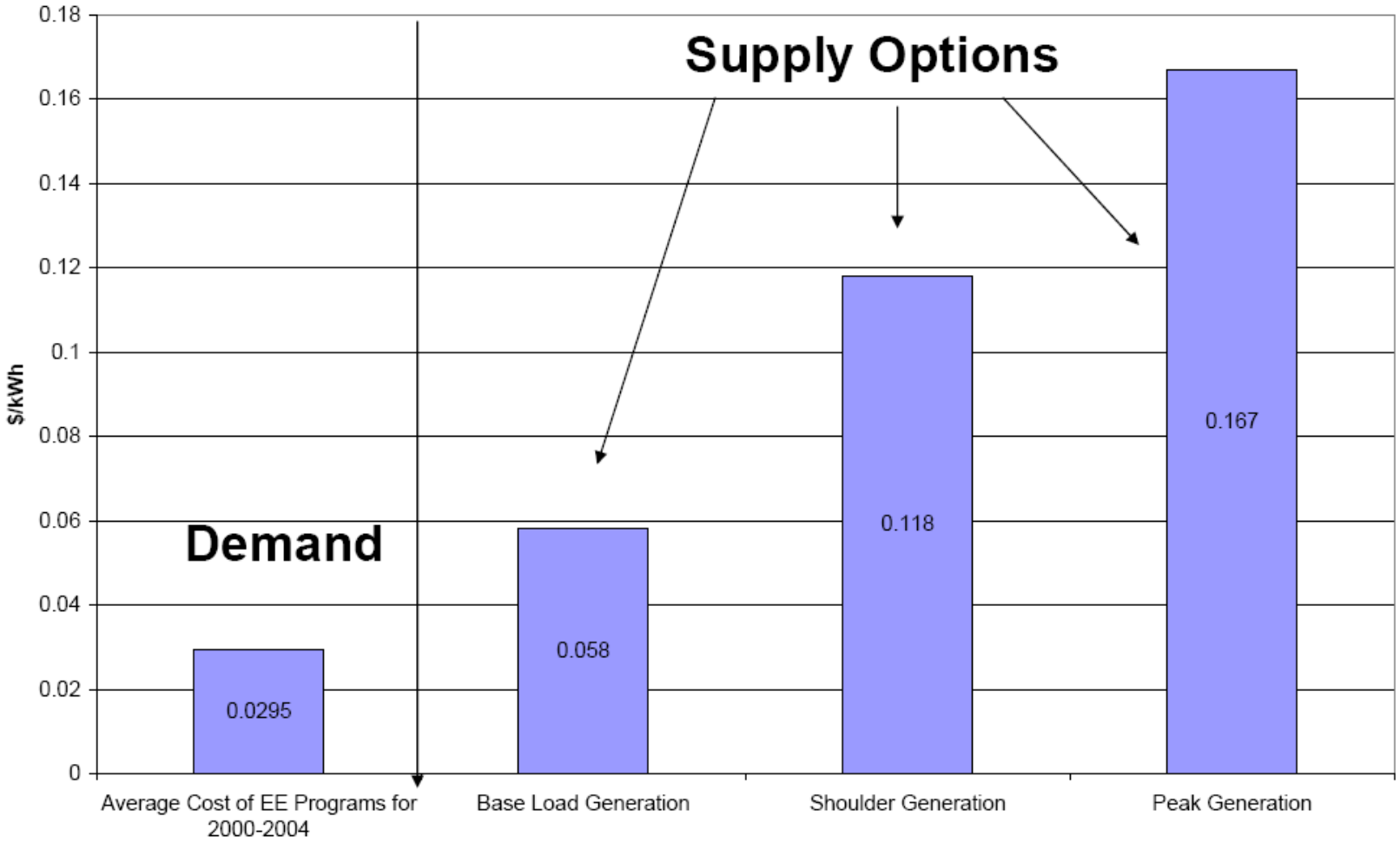


2 to 3% of electricity revenues provides

- about 0.8% per year of savings
- 3-5% savings in 5 years
- 7-10% savings in 10 years
- more in peak demand with targeted programs

Source: ACEEE, 2004

California Cost Comparisons



Source: CEC, 2005

Potential Savings and Costs from EE

	Controlling Growth in Electricity Demand by 30%	50%
Cost of EE (Billion $)		
-- PV of 15 year program	$115	$190
-- Annual utility cost	$ 5 - 7	$ 9 - 12
Savings/Avoided Costs (Billion $)		
-- Customer Bills	$ 265	$440
-- Net savings on generation	$ 50	$ 85
-- Total	$ 315	$525

Assumptions:

-- EE costs about $.03/ kWh

-- Generation costs about $.05/kWh

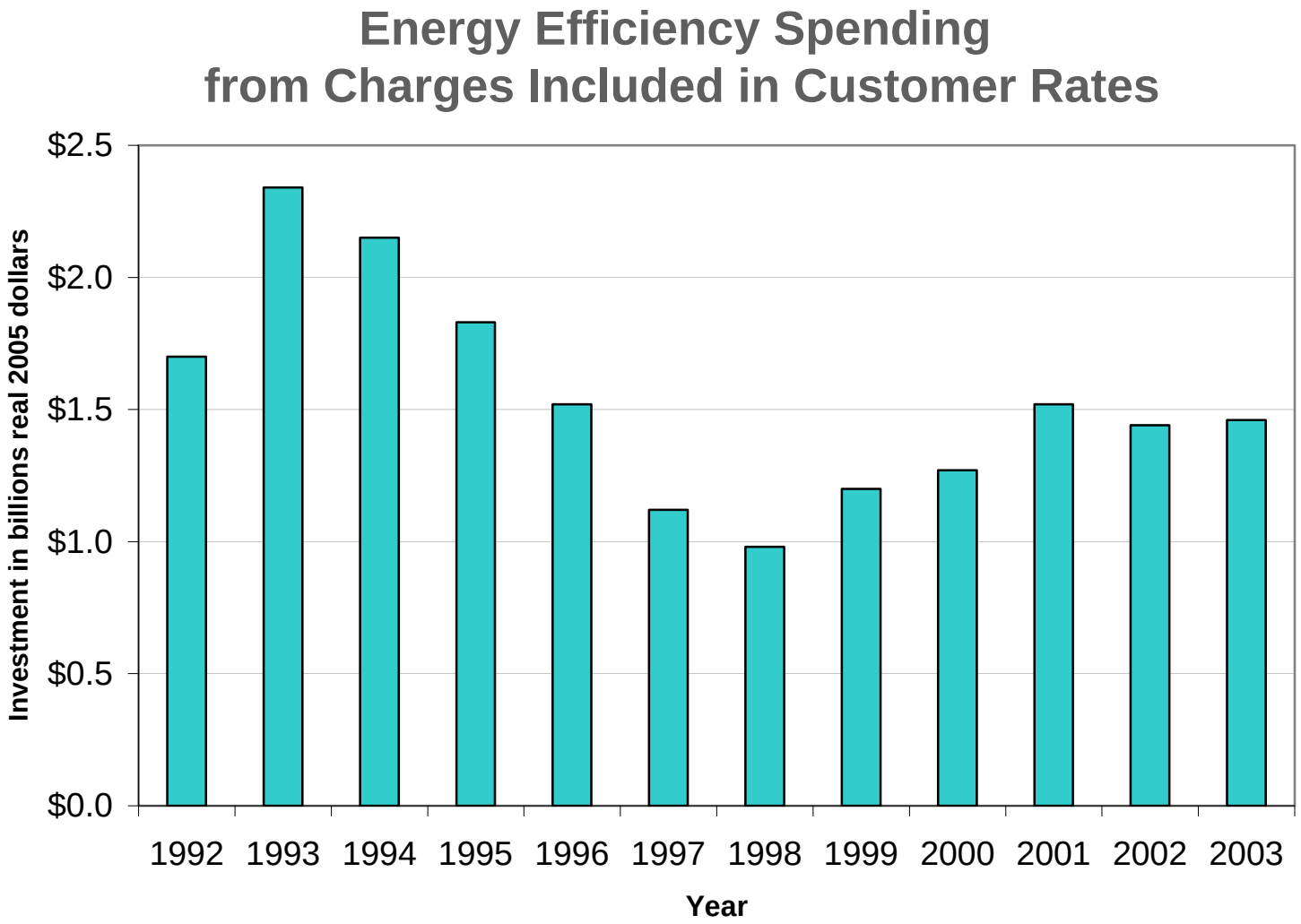
-- 15 year lifetime on average for EE measures

-- 0.05% discount rate

-- Participants paying 40 to 50% of total costs

Sources: Analysis based on AEO 2005, ACEEE 2004 Scorecard data, CA Program Evaluations, NY Program Evaluations

EE Funding Has Declined over Last Decade



Source: Data from ACEEE 2005 Scorecard adjusted for inflation using U.S. Department of Labor Bureau of Labor Statistics Inflation Calculator

Where Are We in 2005?

- Energy demand is growing
  - Electricity
  - Natural gas
- Cost of generation is increasing
  - Coal prices
  - Gas prices
- Natural gas prices increasing / volatile
- Carbon risk
- Efficiency offers cost-competitive solution
  - More than 10 years of experience
  - Stable price
  - Have not reached diminishing returns

Energy Efficiency Action Plan

Goal Statement

An aggressive new national commitment to energy efficiency by electric and natural gas utilities and partner organizations in the United States.

Key Barrier – Rate Designs

- Frequently does not encourage energy efficiency
- Do not encourage less usage when high costs for energy or capacity
- Rate design changes to promote EE can be difficult, particularly when mandatory
  - Pilots are exploring what can work
- Must address trade-off between economic efficiency and complexity to develop rates that provide appropriate signals

Key Barrier -- Utility Incentive Structures

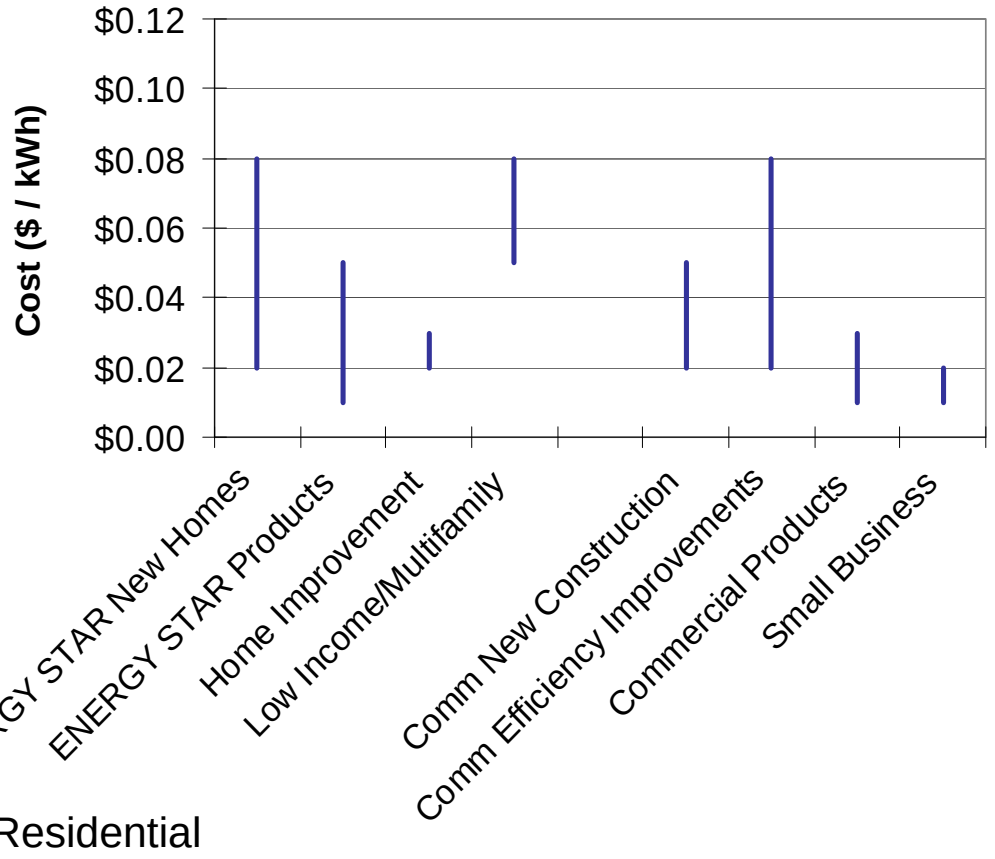
- Net revenue linked to throughput creates disincentive for utility EE investment and other policies leading to lower use
  - Decoupling mechanisms are a solution
- Investor-owned utilities do not earn the same rate of return on EE as supply side investments
  - Shareholder incentive mechanisms can reward investor-owned utilities
- Publicly-owned utilities must justify rate increases or decrease net revenue to promote energy efficiency investments
  - Evaluate Average Bill Impact rather than Rate Impact

Key Barrier -- Utility Planning Processes

- Standard utility resource planning processes do not typically evaluate EE as a competitive resource
  - While M&V is well-developed, there remains some skepticism that the system benefits from energy efficiency will be available when needed
- Comparison of EE, supply side resources, T&D requires consideration of appropriate trade-offs in key areas
  - Cost
  - Reliability
  - Environmental Impact
  - Others
- Portfolio of demand and supply options should consider policy direction, incentives and goals of commissions (Investor-owned) or communities (publicly-owned)

Key Barrier: Lack of Information/Awareness on Programs that Work

- Document programs that work
  - Political/ administrative factors
  - Across end-use sectors and customer classes
  - Designing the portfolio
  - Cost-effectiveness tests
- Established M&V procedures
  - Gross to net
  - Persistence of savings



Sources: NYSERDA, CA , MN Xcel, VT, NWPPC

Energy Efficiency Action Plan

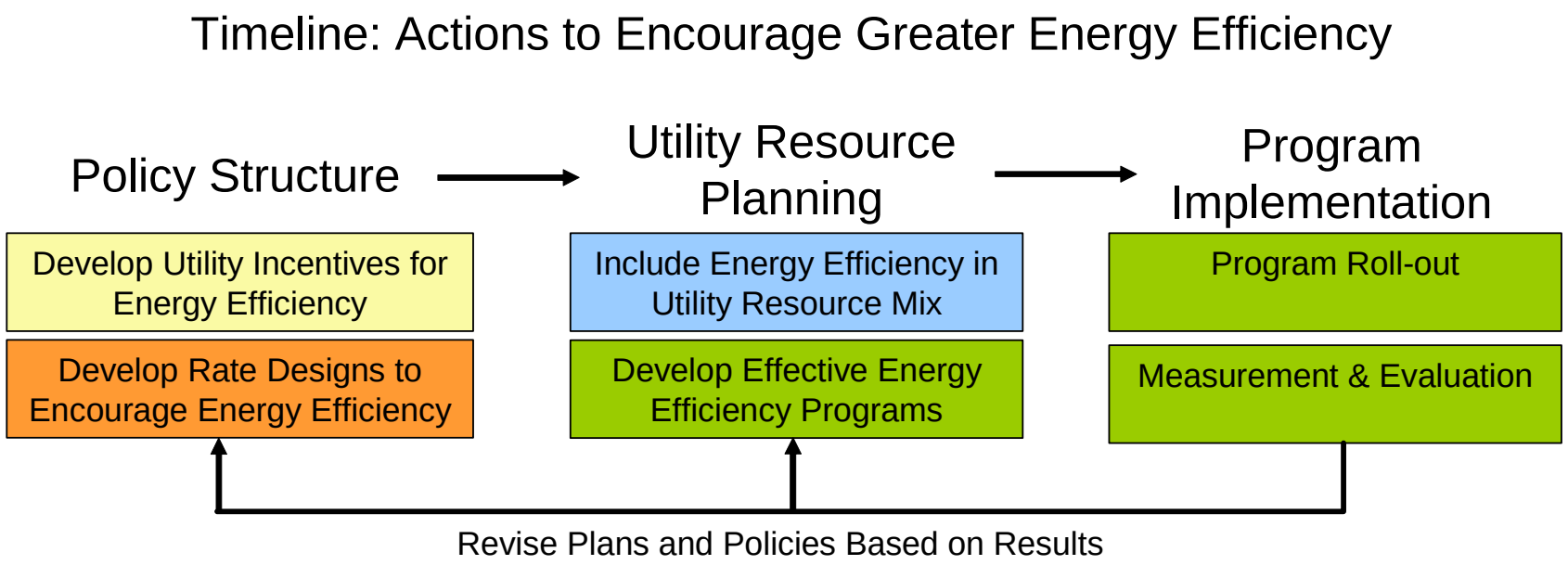
- Who: **Leadership Group**

  Comprised of electric and gas utilities, state public utility commissions, state energy/environment agencies, energy consumers, energy service providers, NGOs

- What: **Working Groups to Address Barriers and Develop Business Solutions**
  - Rate Design and EE
  - Utility Incentive Structures
  - Planning Processes
  - EE Programs that Work

Facilitated by US DOE and EPA

Path to Increased EE Investment



Working Groups and Key Barriers

Action Plan Working Groups and Key Barriers

Utility Ratemaking & Revenue Requirement	Rate Design	Planning Processes	Model Program Documentation
EE reduces utility earnings	Rates do not encourage EE investments.	Planning does not incorporate demand-side resources	Limited information on existing best practices

Expected Outcomes

- Documenting business practices / solutions for overcoming barriers limiting utility investment in energy efficiency
  - Removing disincentives / providing incentives
  - Integrating EE into utility planning
  - Examples of EE programs that work
  - Tactics that help EE succeed
- Communication strategy for spreading practices / solutions
  - regional/state workshops
- A network of experts and resource materials on energy efficiency practices

Role of Leadership Group

- Guide development of actionable information
  - Use expertise
  - Business cases that make sense from your perspective
  - Business cases to take to your CEO
  - Direction/input to work plans
- Let contractors do the work
- Be ready to take action

"An aggressive new national commitment to energy efficiency by electric and natural gas utilities and partner organizations in the United States."