



Good Electricity Policy Is Good Environmental Policy

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Overview

*Delivering reliable power
at low cost and with low environmental impact*

- Common Goals
- Who We Are
- Current Power Regulations and Markets Biased In Favor of Conventional Generation
- Energy Efficiency, Renewables, and Clean DG are Attractive Alternatives
- EPA has Useful Experience
- Invitation to Work Together

EPA and NARUC Share Common Goals

- Reducing Environmental Impacts
 - Air emissions, greenhouse gases, water use
 - At low (or zero) cost
- Maximizing Power System Benefits
 - Lower power costs, volatility, market power of generators
 - Improved reliability and security

Who We Are

- Non-regulatory programs in EPA's Air Office
- Broad range of issues
 - Energy efficiency
 - Renewable energy
 - Clean distributed generation
- Programs overcoming market barriers to financially attractive technologies/practices
 - ENERGY STAR -- residential, commercial, industrial
 - Renewable energy
 - CHP and landfill gas recovery
- Identify/promote environmentally-preferable policies
 - Output-based approaches to air regulations
 - Emissions disclosure (eGRID)

The Time is Now

- Large Resource Issues
 - Natural gas prices are higher and will remain higher (NPC, 2003)
 - growing electricity demand driving higher prices
 - energy efficiency vital to moderating price / reducing volatility
 - Higher prices causing new interest in coal (EIA)
 - coal investment brings new risks
 - Gas having big impact on reliability planning
- Energy Efficiency Programs Deliver
 - Resources providing predictable results
 - Low cost strategy and reduces emissions
- Large Potential Across Load Management, DG, EE
 - Can provide 30%, 50%, or more of expected load growth

*Opportunity to
Lower Costs,
Secure Reliability
and Improve the
Environment*

Current Power Regulations/Markets Support Conventional Generation

- Wholesale Market Rules
- Retail Rate Policy
 - Customer rate structure
 - Throughput charges
- Reliability Policies
 - Procurement of new power/
resource adequacy
 - Funding new transmission/
distribution

Do Not:

- Reflect higher costs of time of day or location
- Let low-cost EE, DG compete on level field with central generation

Costly to Ratepayers and the Environment

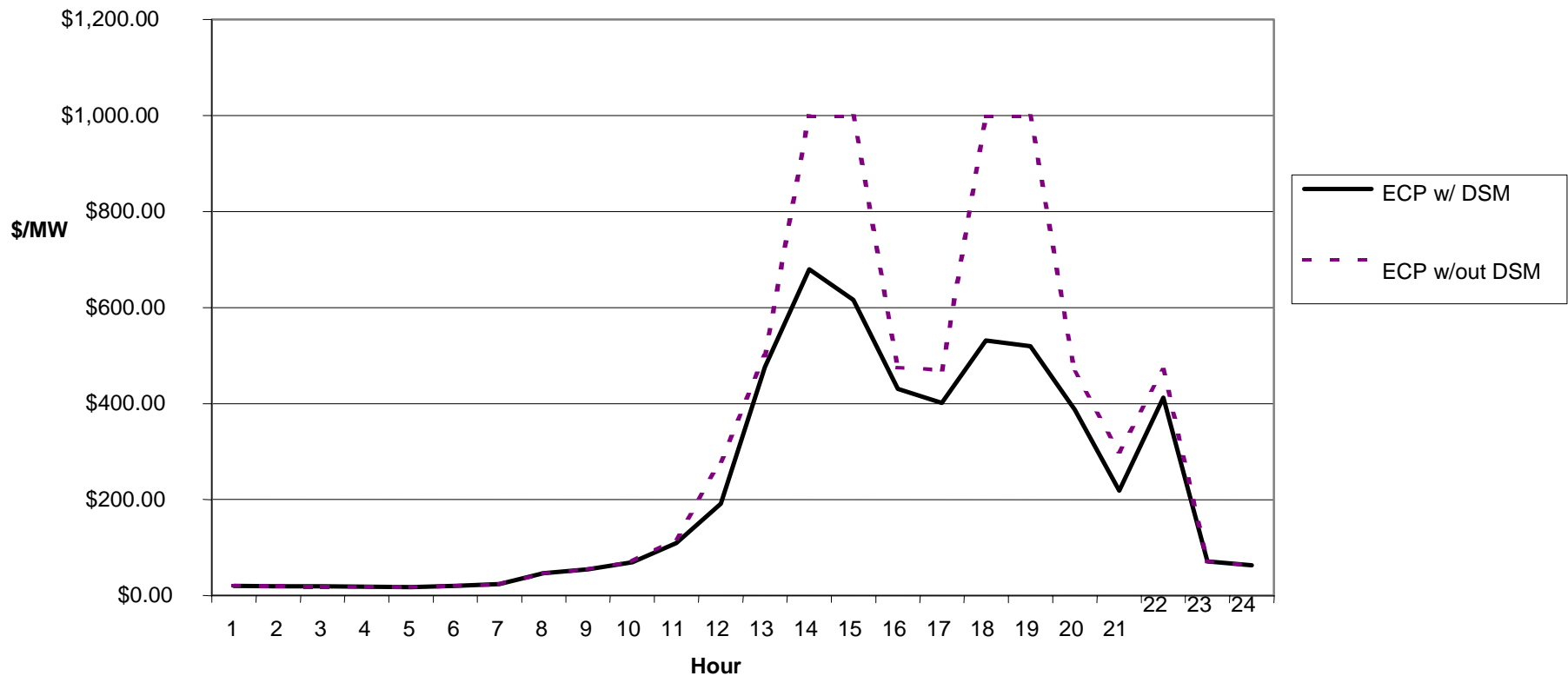
Spotlight on Throughput

Example:

- Rates set in rate case
- 5% increase in kWh sales (due to hot weather) significantly increases profits
 - Vertically integrated utility: increases by 23%
 - Distribution-only utility: increases by 57%
- Disincentive for saving energy and reducing pollution
- Variety of solutions

Source: based upon Issueletter from Regulatory Assistance Project,
Efficient Regulation of Distribution Utility: Where Rate Design and PBR Meet
(May 2001)

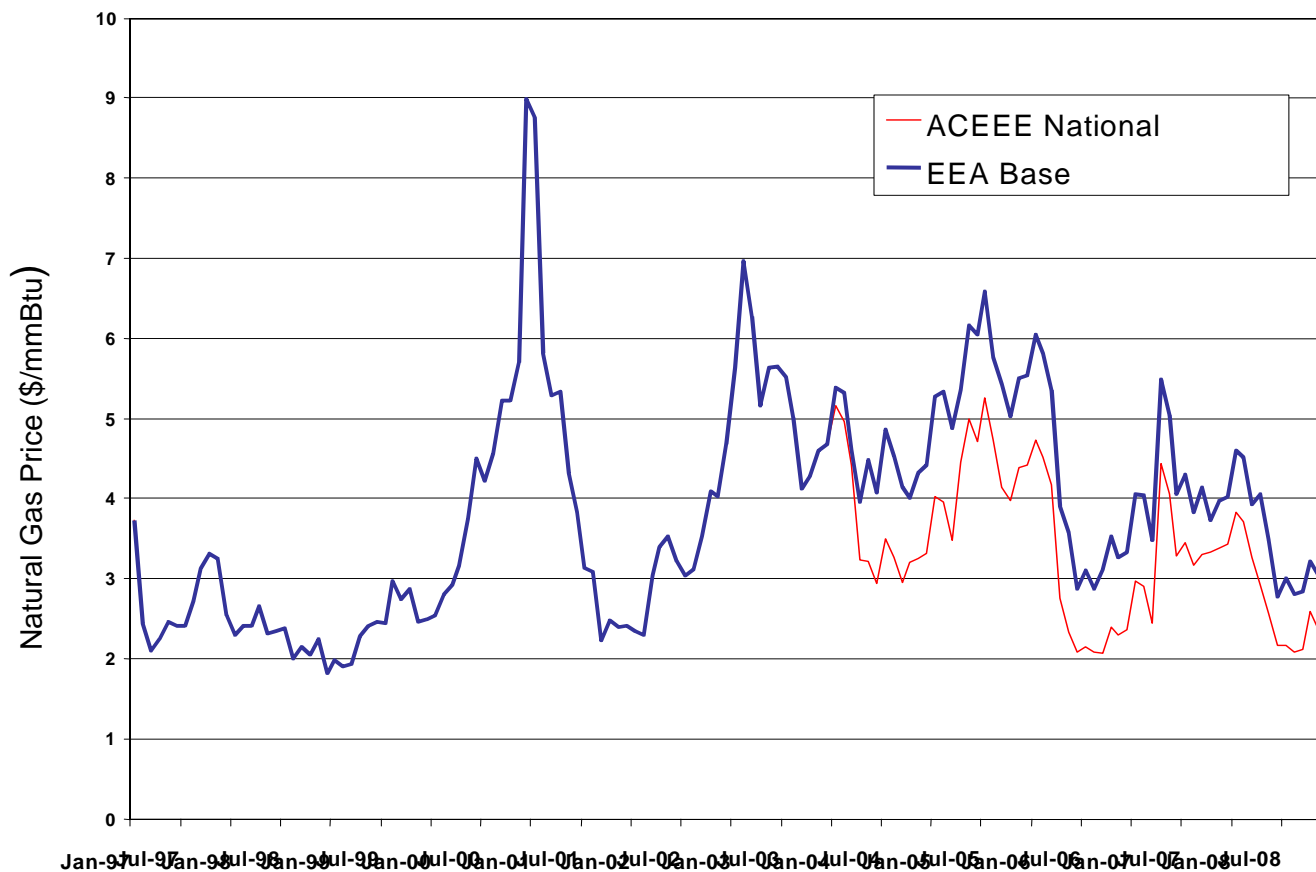
The Power of EE/DG: Reduced Peak Power Prices



Impact of Massachusetts DSM on Spot Market Clearing Price, June 7, 1999
(NEDRI Final Report, July 2003)



The Power of EE/RE: Reduced Wholesale Gas Prices



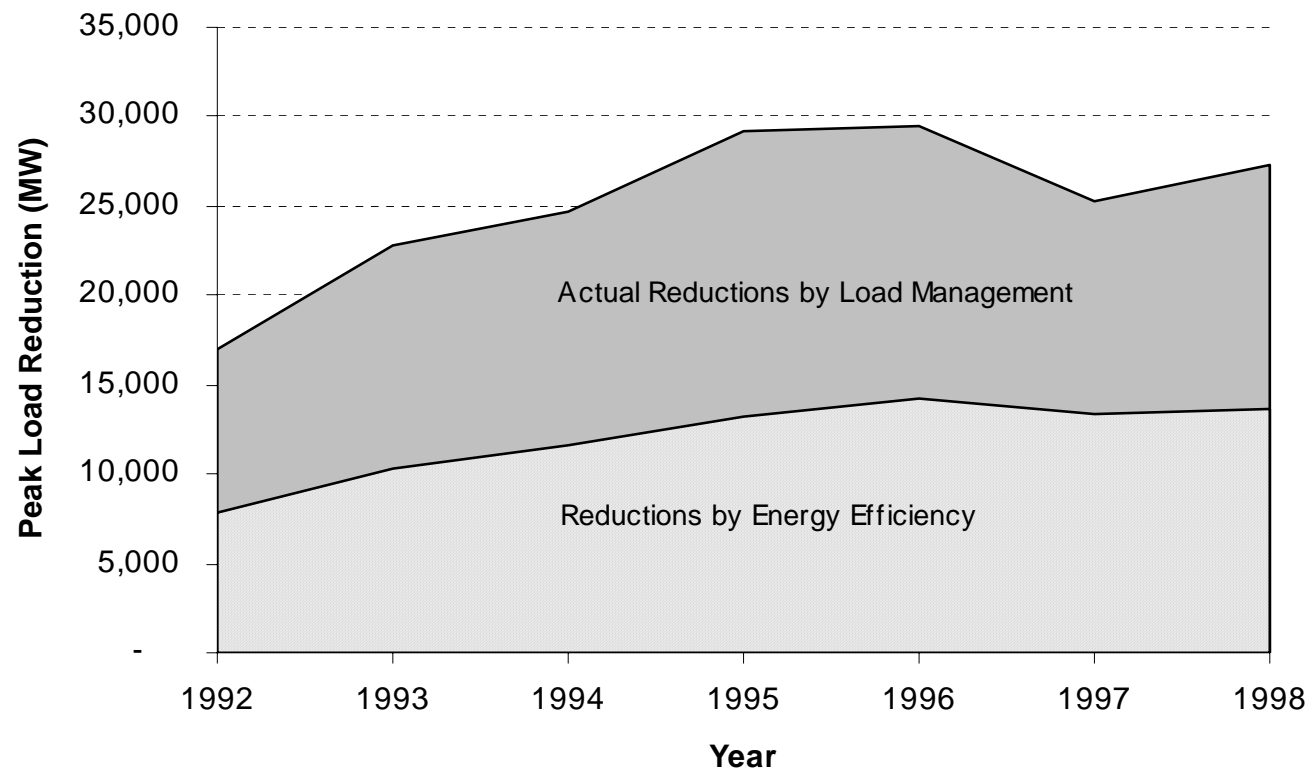
Strong EE/RE Programs could reduce gas prices by 20% and reduce air emissions

Source: American Council for an Energy Efficient Economy

Natural Gas Price Effects of Energy Efficiency and Renewable Energy Practices and Policies (December 2003)



Efficiency Important Part of Resource Mix in Past



Savings at
< 3¢ /kWh

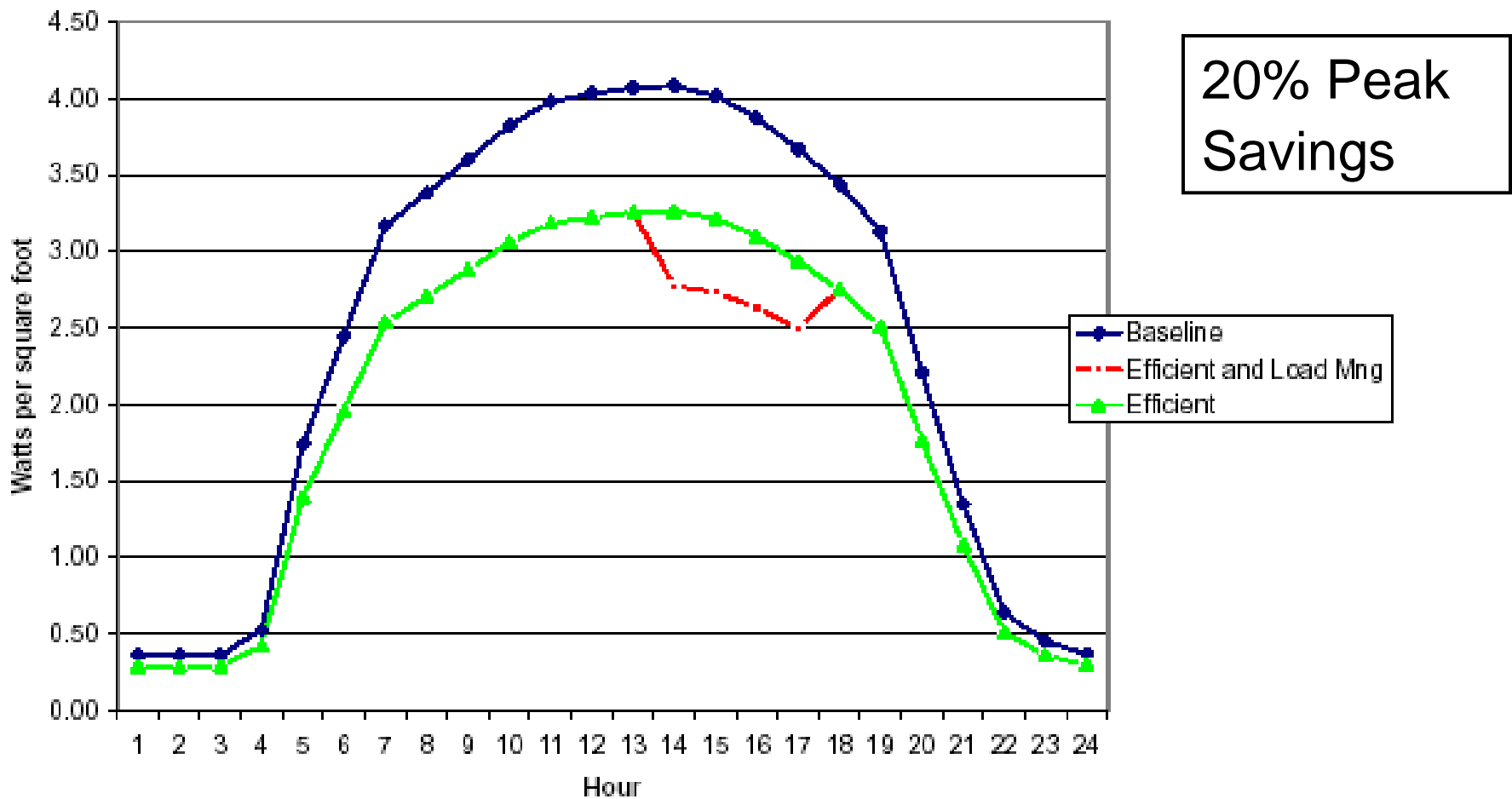
But with fall
off in DSM \$,
no additional
savings since
1995

Source: EIA data

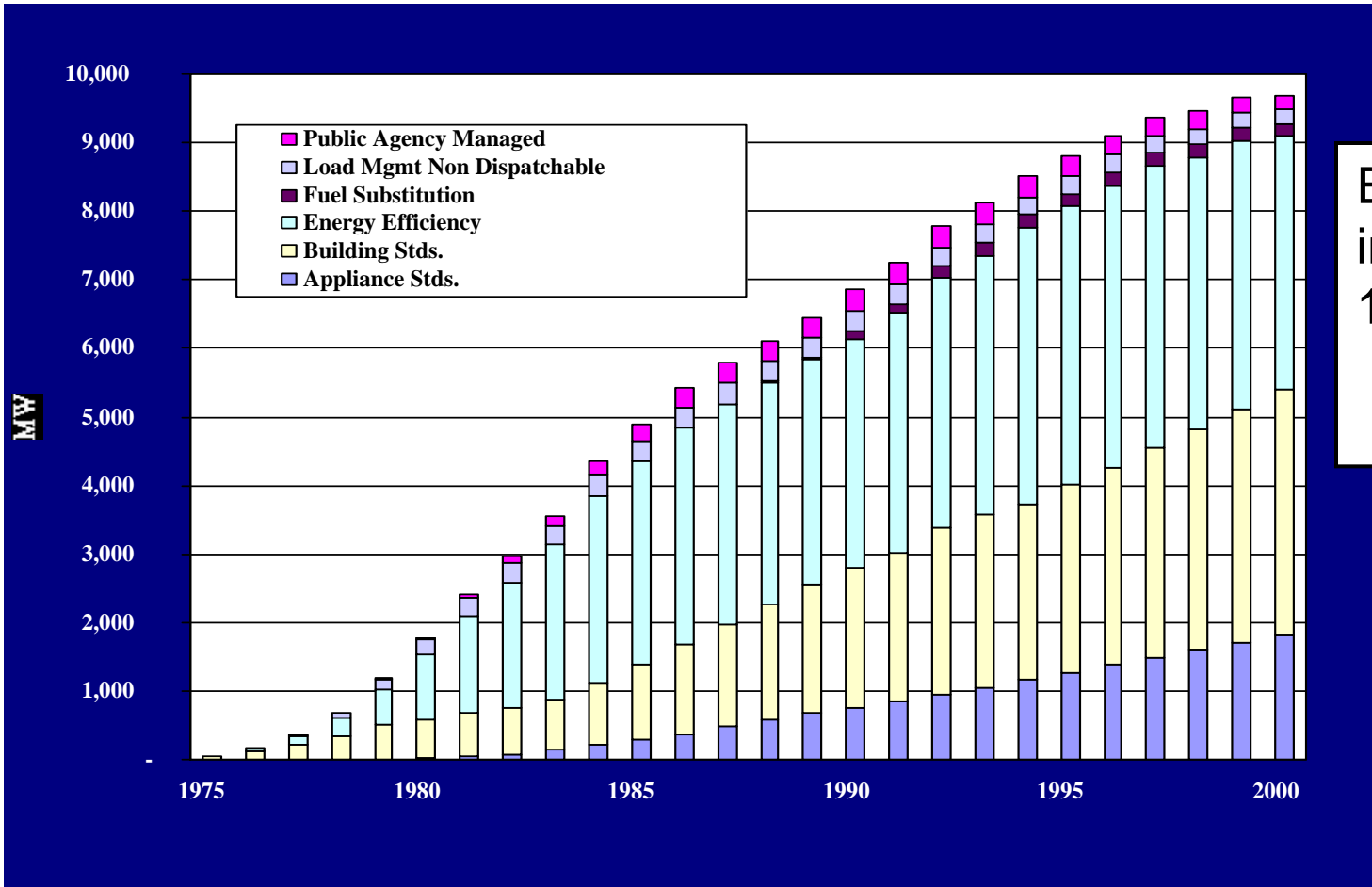


Efficiency Reduces Peak and Total Demand

Combined Commercial Cooling and Lighting Loadshape with Efficiency and Load Management (Four-Hour Curtailment by 15%)



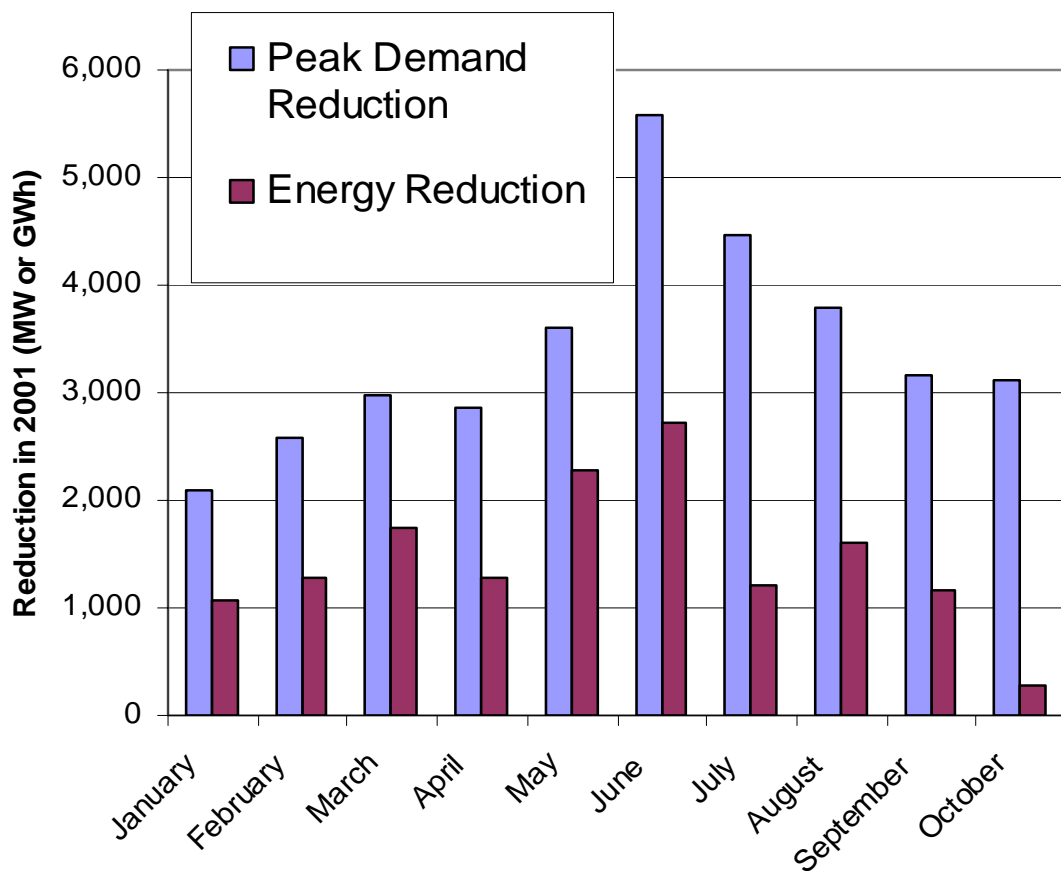
Impact of California DSM Programs and Standards



Efficiency cuts
in CA post
1994
-- 1100 MW
lost savings

California 2001 -- DSM keeps the lights on

CA Response to Energy Crisis



CA reduced energy use by

- 6% in total in 2001
- 4% savings from behavioral actions
- 2% savings from investments in EE

EPA Programs -- ENERGY STAR



● National Platform for Energy Efficiency

- Defines efficiency
 - 40+ products
 - hvac, appliances, lighting, etc
 - reduce home energy use by 20 to 30%
 - commercial buildings
 - new homes
- National recognition -- 56% public
- Technical assistance
 - proven management guidelines

Results

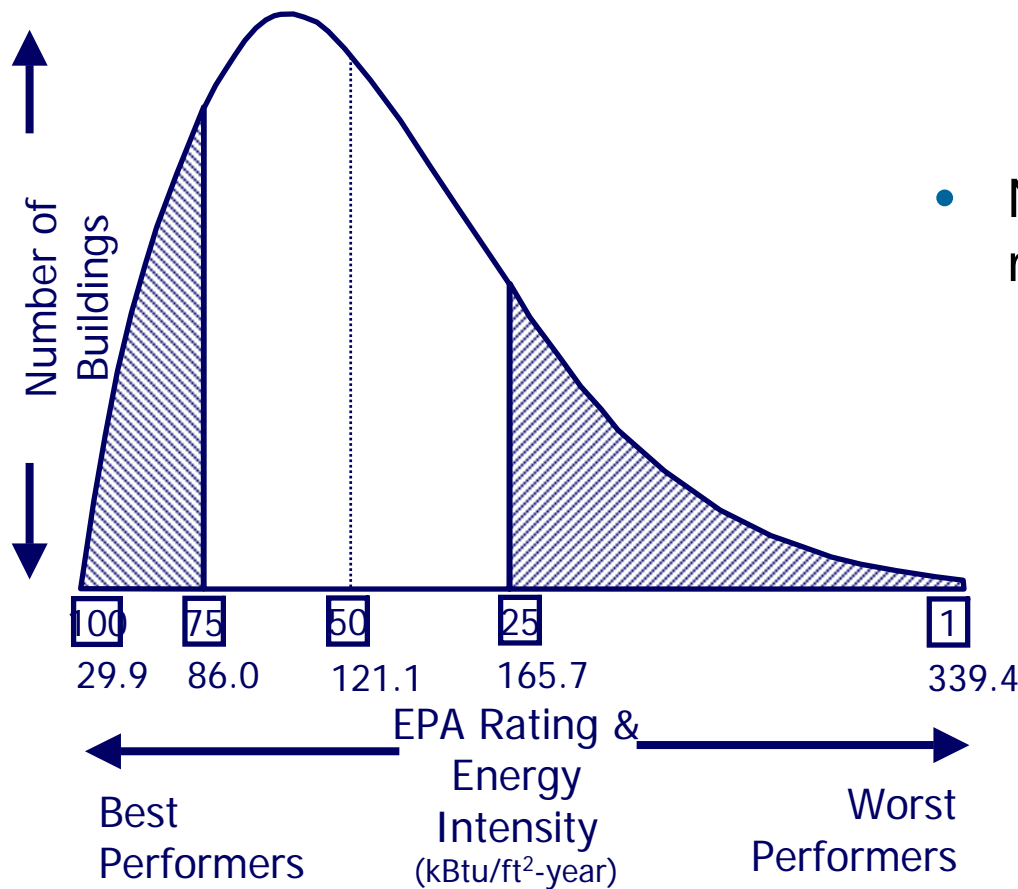
- 1 billion products sold
- many buildings improved
- 200,00 new homes

- 100 billion kWh avoided
- 20 GW avoided
- 18 million vehicles worth of GHG emissions

● Partnering with Key Market Players

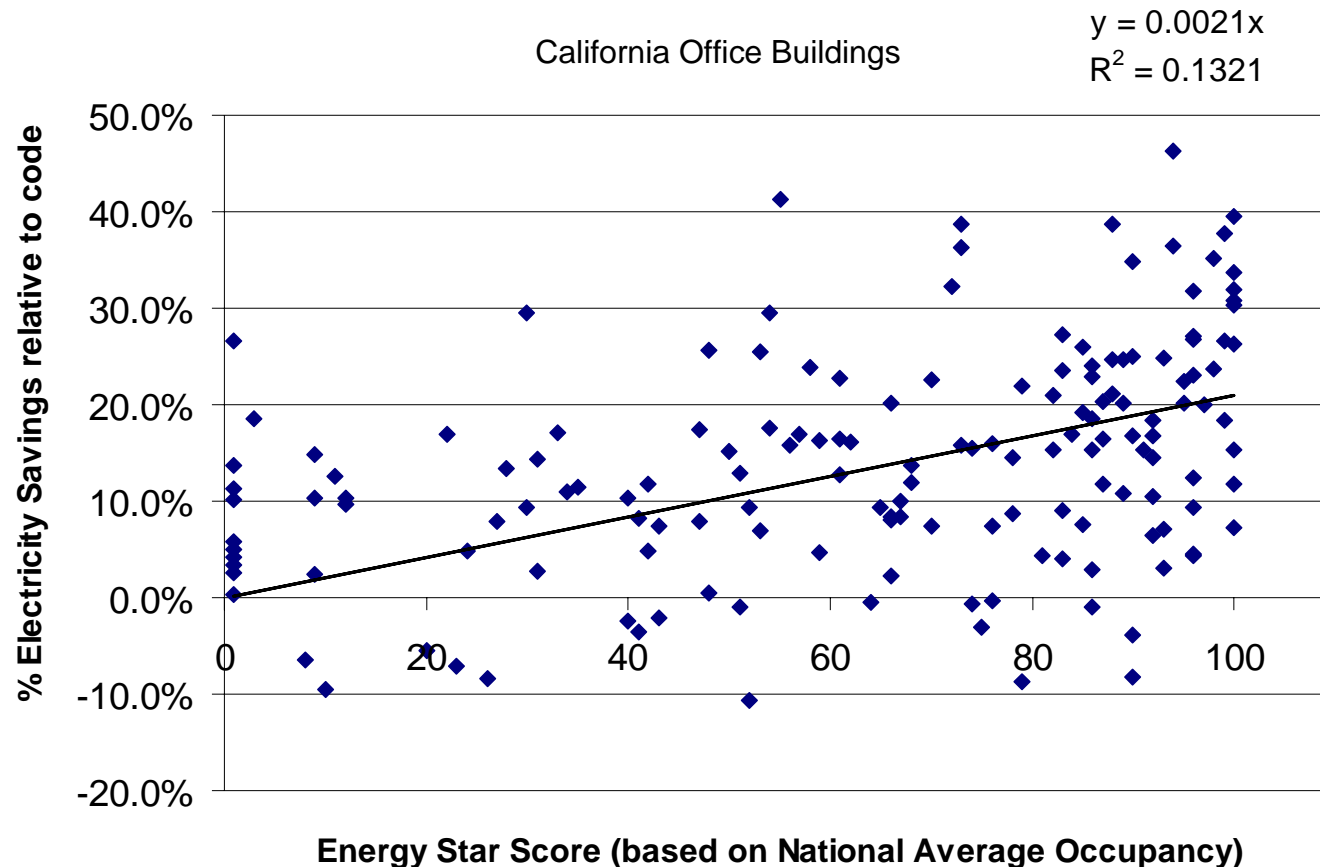
- Manufacturers and retailers
- Utilities / system benefits charge administrators
 - 60% of utility customers

ENERGY STAR -- Commercial



- Normalized EUI varies widely
 - 30 kbtu/ft² to 340 kBtu/ft²
 - Age and equipment not significant drivers of EUI
- New EPA energy performance measurement system
 - Can't manage what you don't measure!
 - Based on energy bills -- real energy use
 - energy use/square foot adjusted for climate, occ
 - 1 is low, 100 is high
 - 75 + means excellence
 - available for 60% of US floor space by 2004

“Code-Efficient” Buildings Weakly Correlated to Performance



Buildings 20% better than code can have an energy performance score ranging from 1-100.

Not sending clear market signal.

Source: NBI, California Board for Energy Efficiency, EPA





Up and Coming with ENERGY STAR

- Build upon commercial building benchmarking
 - 19,000+ buildings have used the benchmark
 - 19% of office space
 - 18% of schools
 - 24% of supermarkets
 - 33% of hospitals
- Build upon verified high performance buildings
 - 1,400 buildings have earned the ENERGY STAR
 - Documented to use 40% less energy than average building
- Sectoral Challenges
 - Public buildings / courthouses
 - Commercial real estate
 - Hotels / lodging
 - New construction

Energy performance data may be a basis for alternative rate structures

Targeted programs in targeted locations

Residential Programs



- Product Efforts
 - Lighting, cooling, appliances
- New Construction
 - 30% better than MEC or 15% better than state code
 - Demonstrated to use less energy than average home
- Up and coming
 - HVAC best practices
 - NJ program example
 - Home Performance with ENERGY STAR
 - whole home retrofit
 - certified home professionals
 - local/credible qa/qc

*Opportunities for
alternative rate
structures and
targeted
programs in
targeted
locations*

Utility/SBC Administrator Partners

- **Minnesota: Minnesota Power**

- Promoting ENERGY STAR lighting and appliances
- Combining retailer incentives, consumer education, civic activities and participation in ENERGY STAR national campaigns

- **Nevada: Nevada Power and Sierra Pacific Power Companies**

- Promoting ENERGY STAR lighting and appliances
- Further integrating ENERGY STAR into residential offerings
- Projected savings equal 1,656 MWh

- **New Jersey: New Jersey Clean Energy**

- Promote ENERGY STAR appliances, lighting, windows, a/c, and homes
- Participate in national promotions
- Expanding to Home Performance with ENERGY STAR

Distributed Generation

- EPA Expanding Markets for Clean DG
 - Highly efficient (CHP)
 - On-site renewable energy
 - Focusing on a range of markets from 1 MW commercial systems to 20+ MW industrial plants
- EPA's CHP Partnership
 - Over 130 Partners
 - EPA has facilitated over 700 MW of new CHP capacity since 2002
 - Energy Star CHP Award sets the benchmark for efficient systems
- Key Market Barriers
 - Lack of standardized interconnection requirements
 - Excessive back-up/stand-by power rates charged by utilities when customers opt to self-generate
 - No recognition of strategically sited DG

Renewable Energy

- Provide support to states so they have a well-designed RPS
 - The right target
 - The right resources
 - Voluntary green power sales not allowed to meet mandate
 - Emissions benefits captured in state air quality planning
- EPA's Green Power Partnership building demand
 - 360 Partners since 2001
 - Total green power commitment of 1.5 B kWh
 - Lowering the cost of renewable energy and enhancing value
 - Next step: work with providers to improve green power offerings

The Right Policies Can Deliver Environmental, Power System Benefits

- Customer Rates
 - Inverted rate structures -- (NEDRI)
 - Lower prices for energy efficient buildings (GA proposal)
 - More aggressive time of use rates
 - Throughput solutions
- Open Procurements for Future Needs
 - Allow EE, DG, RE to compete equally
- Congestion/Reliability
 - Capturing commercial building energy efficiency to address congestion/reliability

The Right Policies Can Deliver Environmental, Power System Benefits (contd.)

- Clean DG
 - Standardized interconnection
 - Reasonable standby/backup rates
 - Appropriate pricing for clean DG that enhances reliability
- Renewable Energy
 - Voluntary green power sales not allowed to meet RPS mandate
 - Level playing field in restructured markets
 - Emissions, fuel mix disclosure
- Other initiatives
 - Ratepayer-funded efficiency (System Benefits Charges)
 - Appliance Standards (CT, MD)
 - Improved implementation of building codes

Invitation to Work Together

- Common Objectives
 - PUCs have policy responsibilities, important resources
 - EPA has resources, expertise
- NARUC/EPA Pilot Ideas
 - Link rates/rate structures to ENERGY STAR performance
 - Develop rationale, efforts to enhance utility-supported ENERGY STAR efforts in geographically stressed regions
 - Better quantify benefits of SBCs, appliance standards
 - Explore how to offer incentives to strategically sited clean DG
 - Develop “best practices” for green power market development
 - Co-sponsor regional dialogues
- Rules for the Road
 - Sufficient regional / decision-maker participation for success



How Do We Tap Into These Opportunities?