Oklahoma Energy Efficiency

Why Energy Efficiency?

The Regulatory Assistance Project

50 State Street, Suite 3
Montpelier, Vermont USA 05602
Tel: 802.223.8199
Fax: 802.223.8172

110 B Water Street
Hallowell, Maine USA 04347
Tel: 207.623.8393
Fax: 207.623.8369

Website:
http://www.raponline.org

Why Energy Efficiency?

I. Why Energy Efficiency

- Cost-effective compared with other resources
- It can offset the consequences of growth
- Inherent barriers exist for electric and gas consumers to do efficiency on their own
- The utility system is a good delivery mechanism
- Commission clarity and leadership are important
- It can be an economic development tool and a tool to address climate change risk

Cost of Energy Efficiency

- Mature energy efficiency programs are being delivered at a cost to consumers of roughly 3 cents per kWh
- Supply sources (plus transmission, losses, etc.) generally cost more
  - Issue to flag for later: capital investments get paid for over time – roughly 15-20% of capital cost is the **rate effect**
- Risks of cost increases from fossil fuel-driven supply, especially in wholesale market structure

Energy Efficiency Program Spending and Savings

- For highest spending states:
  - Spending ranges to 4.5% of utility revenues
  - More important: Current program savings are approaching 1% of sales and 1% of peak and new targets are 1.5%-2%
  - Increasing attention to measuring success by **savings** as a first priority, with spending more of an indicator of commitment

Connection to Codes and Standards

- If standard practice for energy consumption is more efficient, consumer funded energy efficiency programs can focus on more valuable objectives.
  - This is the way building energy codes and appliance and equipment efficiency standards work with consumer funded energy efficiency programs

Growth in Electric Use and Demand has **Risks**

- More power generation (cost control, siting)
- More exposure to fuel price increases
- More exposure to fuel price and availability volatility
- More exposure to energy security concerns
- More transmission
- More air emissions (caps) and water use

Barriers
to Energy Efficiency

- *What's keeping people from doing energy efficiency anyway?*
  - Information and Knowledge
    - Customers, stores, contractors, suppliers, etc.
  - Time/opportunity to make different decisions
  - Upfront cash
  - Long run cash, Financing
  - Split Responsibility (the renter's dilemma)

Use of **Customer** Incentives

- Manage incentives carefully
- For generally available programs, link amount to desired effect, expect to ramp down incentive as higher standard becomes ordinary

- There is another incentive category applying to **utilities**, which will come up separately

Delivering Energy Efficiency through Utility Rates

- Consumers pay because there are system benefits to all from energy efficiency
- Utilities or other administrator delivers
- Network of contractors to the program
- Supply chain of services and products (trade allies)
- Leadership reinforces success
- Regulators oversee progress and direction

Leadership and Clarity

- Leadership is very important with energy efficiency
  - It is a departure from traditional strategies to meet energy needs, and some experts and highly experienced professionals are skeptical of EE value
  - It relies on investments in assets not owned or controlled by the utilities
  - To overcome "legacy friction" and apply current imperatives and lessons of success from other states, clear, unambiguous leadership is valuable

Important choice: make new system that takes time to grow and apply lessons, or fast implementation that makes mistakes?

Ancillary Benefits of Energy Efficiency

- Economic Development
  - State can use availability of EE as a quality enhancement in dealing with businesses
- Environment
  - The cleanest kWh is the one not used
- Quality
  - Efficient products and processes also tend to be of higher quality and better engineering

IUB – 2004 DSM Results - IOUs

- Cumulative effects of 14 years of DSM
- 1,400 GWh – about 3.5% of MWh sold
- 970 peak MW – about 12% of peak MW
- 6,000,000 MCF – about 2.5% of total "throughput" or 4% of retail sales
- B/C ratios about 2.0 and NEW net benefits about $100 million per year, 1999-2004

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Implementing Programs

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II. Implementing Energy Efficiency Programs

- Scope of programs, equity, and low-income issues
- Resource potential studies
- Administration
- Regulatory oversight (program budgets, M&V, annual reports, public involvement)
- Customer focus and marketing
- Integration into utility resource planning and investment

Program Scope

- 1. Lost Opportunity Programs
  - Address decision-makers at the time they make purchase decisions concerning energy
    - New construction
    - Point of purchase
    - Trade ally training (the WalMart story)
- 2. Low income Programs
  - Essential, lower benefit/cost threshold

Program Scope

- 3. Retrofit Programs
  - Costly
    - Appliance bounty programs good for quick hits
  - Reservoir of cost-effective savings is huge due to lower quality of pre-1970s buildings
- 4. Emerging Markets and Technologies
  - Devoting a slice of budget to trying new stuff can be risky, but can also bring a reputation of high expectation and quality

Program Scope

- 5. Market Transformation
  - Investment in changing the way people make energy decisions (information, training)
  - There is some market transformation in every energy efficiency program
  - Some program “designs” can have little or no ability to measure savings
  - Requires regulators to take long view and accept slightly higher cost of efficiency per kWh

Low income programs

- Sometimes called “hard to reach customers”
- Programs qualify with lower benefit/cost ratios
- Financing, to the extent that the cash flow requirement from the customer is reasonable
  - Split savings, positive cash flow outcome
- Integrate with Weatherization
  - Pay weatherization out of program $$ to deliver
- Building Energy Codes and Home Energy Ratings

Program Templates from Texas

- (1) Air Conditioning Distributor Market Transformation Program.
- (2) Air Conditioning Installer Market Transformation Program.
- (3) Commercial and Industrial Standard Offer Program.
- (4) Compressed Air Market Transformation Program.
- (5) Energy Star® New Homes Market Transformation Program.
- (6) Hard-to-Reach Standard Offer Program.
- (7) Home Performance with Energy Star® Market Transformation.
- (8) Load Management Standard Offer Program.
- (9) Multi-Family Water and Space Heating Market Transformation.
- (10) Residential Energy Star® New Windows Program.
- (11) Residential and Small Commercial Standard Offer Program.
- (12) Retro-commissioning Market Transformation Program.
- (13) Solar Water Heater Market Transformation Program.

Resources for Multi-Family, Split Incentive Solutions

- From Portland OR: a community program http://www.sustainableportland.org/energy_menu_Mul.html
- From California utilities (rebates) http://www.sce.com/RebatesandSavings/Residential/Multi-FamilyEfficiency/ http://www.pge.com/res/rebates/lighting/multi_family_properties/
- From Wisconsin: a program description http://www.mncee.org/workplan.pdf
- From New York: a suite of programs (note sub-metering) http://www.getenergysmart.org/BuildingOwners/default.asp

Another Program Feature

- Opt out – Some states allow qualifying customers (large manufacturers) to avoid some or all of the cost of energy efficiency if efficiency performance is occurring anyway
  - Qualifying means aggressive self-directed efficiency efforts
  - Some payment is justified for system benefits

Customer Focus of Energy Efficiency

- ➢Consumers want service, not programs
  - ❖Avoid “silo effect” when managing programs
- ➢Education and Market Transformation
  - ❖Integrate with programs as much as possible
- ➢Bang for the buck
  - ❖Point of decision/purchase
  - ❖“train the trainer” (contractors, vendors, retail)

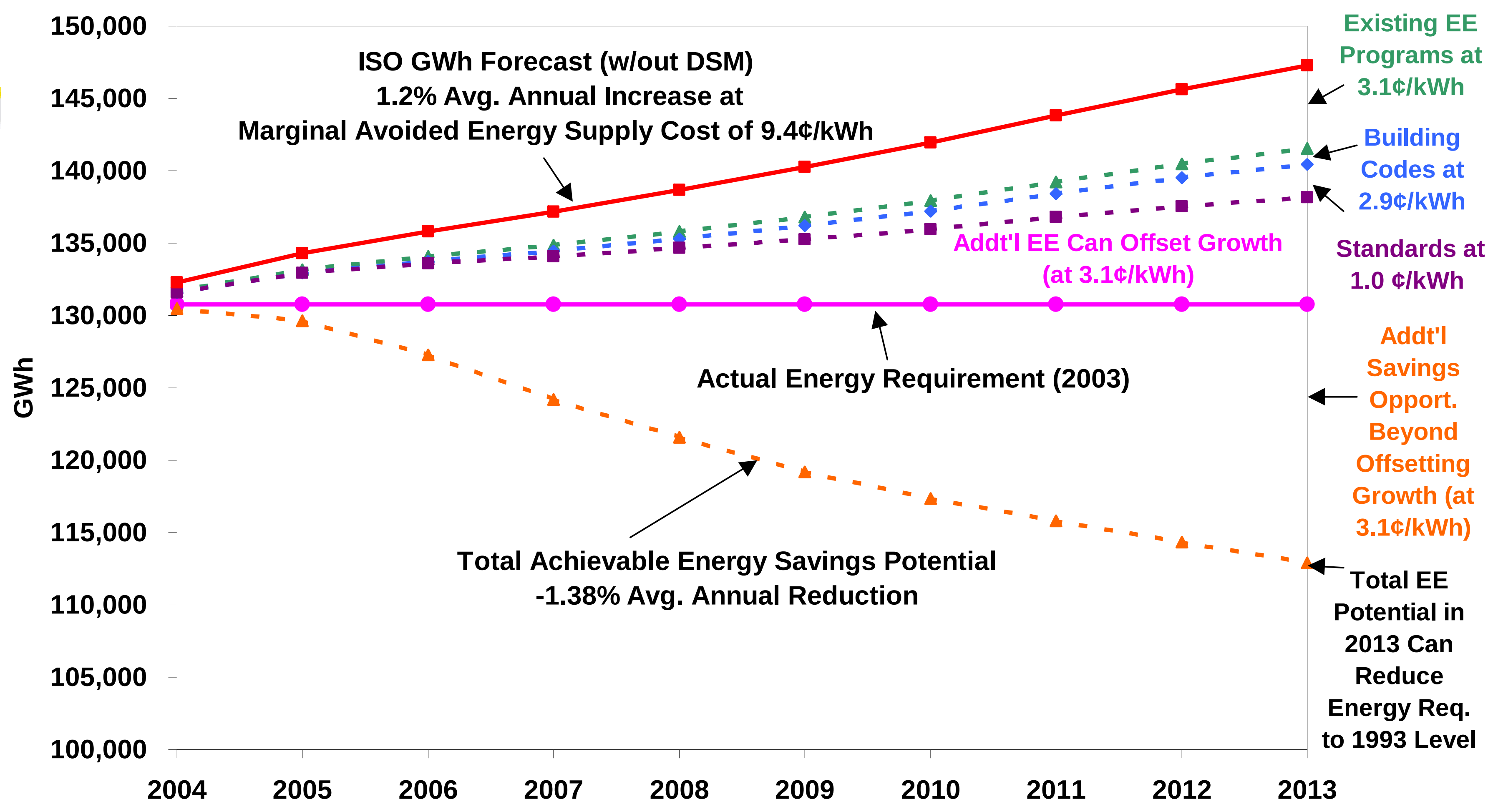
Resource Potential Studies

- Assesses market potential for energy efficiency efforts
  - Valuable for strategic planning
  - Particularly useful if market is segregated to assess growth areas that might eventually require wires upgrades
  - Generally show potential far in excess of current program scope
  - Should not delay implementing clear winners

Iowa
Assessment of Potential

- IOUs were original proponents – provided spreadsheet "end-use forecasts" and potential in plans for 1991 and 1995.
- IUB adopted AP in 1997 to help set goals for IOU plans.

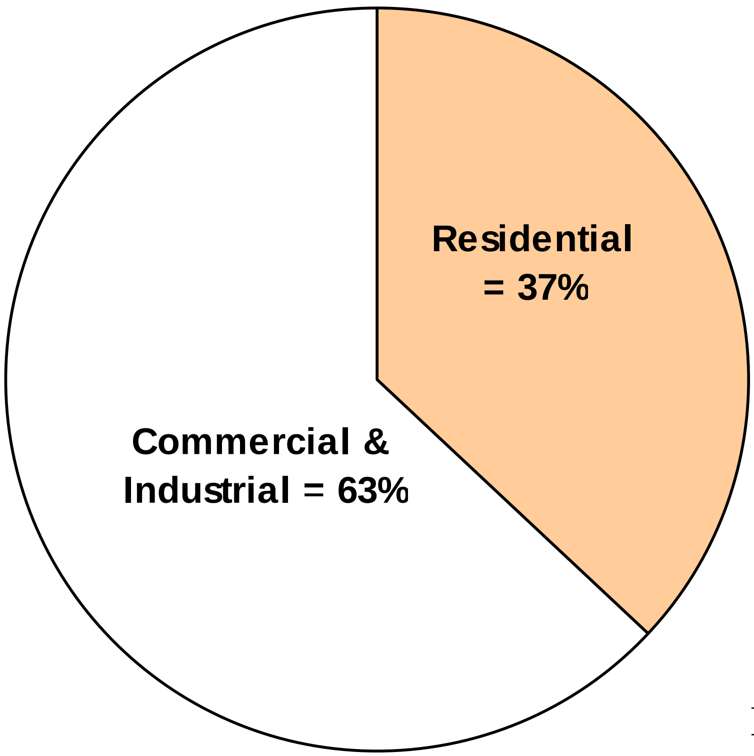
Existing and New EE Strategies Can Offset ISO Forecasted Energy Requirements (GWH) and Beyond



New England EE potential www.neep.org

What are the Major "Reservoirs" of Achievable EE Potential in 2013?
#1: By Sector

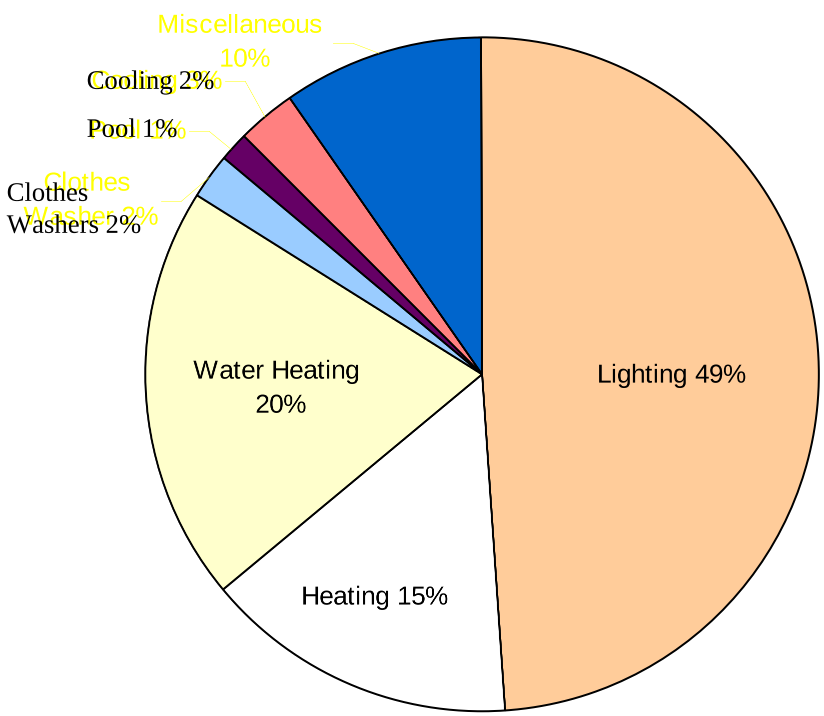
Residential Savings = 12,745 GWH **C&I Savings = 21,630 GWH**



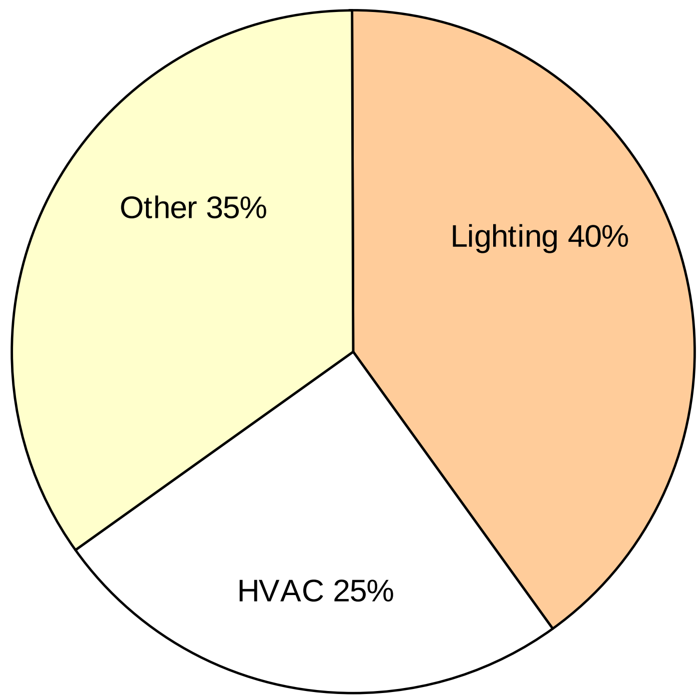
NEEP assessment of New England, 2004

What are the Major “Reservoirs” of Achievable EE Potential in 2013?
#2: By End Use

Residential Savings



C&I Savings



NEEP assessment of New England, 2004

Ways to Measure Potential

- Technical Potential: complete penetration of all measures deemed technically feasible
- Economic Potential: technical potential constrained by cost-effectiveness compared with supply
- Maximum Technically Achievable: Technical potential overtime with most aggressive programs
- Maximum Economically Achievable: Economic potential over time with most aggressive programs
- Budget Constrained: savings with specific funding

Some Energy Efficiency Potential Studies

State	Type of Potential	Year	Estimated Consumption Savings as % of Sales		Est. Summer Peak Demand Savings as % of total capacity	Years to Achieve Savings Potential
			Residential	Total		
Connecticut	*Technical *Max. Technically Achievable *Max. Economically Achievable	2003	21 17 13	24 17 13	24 13	10
Massachusetts	Max. Economically Achievable	2001	25			5
New York	*Technical *Economic	2002	37 26	37 30		10
Vermont	Max. Technically Achievable	2002	30	31	37	10

Energy Efficiency Budgets

- What is your point of view?
  - What can we afford?
  - What is cost-effective?
  - Do we set a firm figure and stick with it?
  - Do we allow increases above the firm figure for particular purposes
- At the beginning, plan for a transition

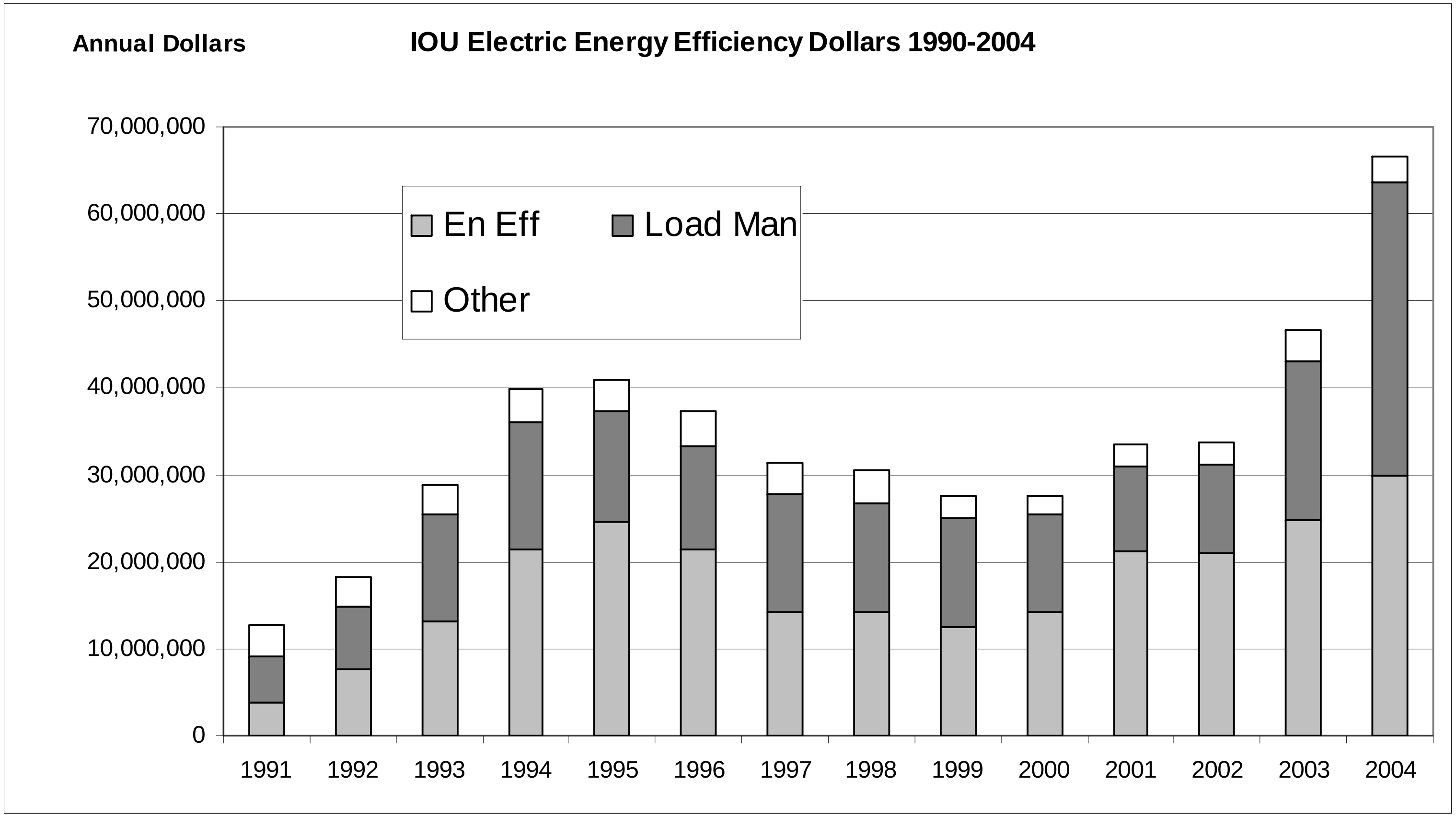
Approaches to Setting DSM Spending Levels

- Cost-Effective DSM Potential Estimates
- Percentages of Utility Revenues
- Mills/kWh of Utility Electric Sales
- Levels Set Through Resource Planning Process
- Savings tied to Total Sales/Peak
- Savings tied to Projected Growth
- Case-by-Case Approach

IUB – Energy Efficiency Budgets

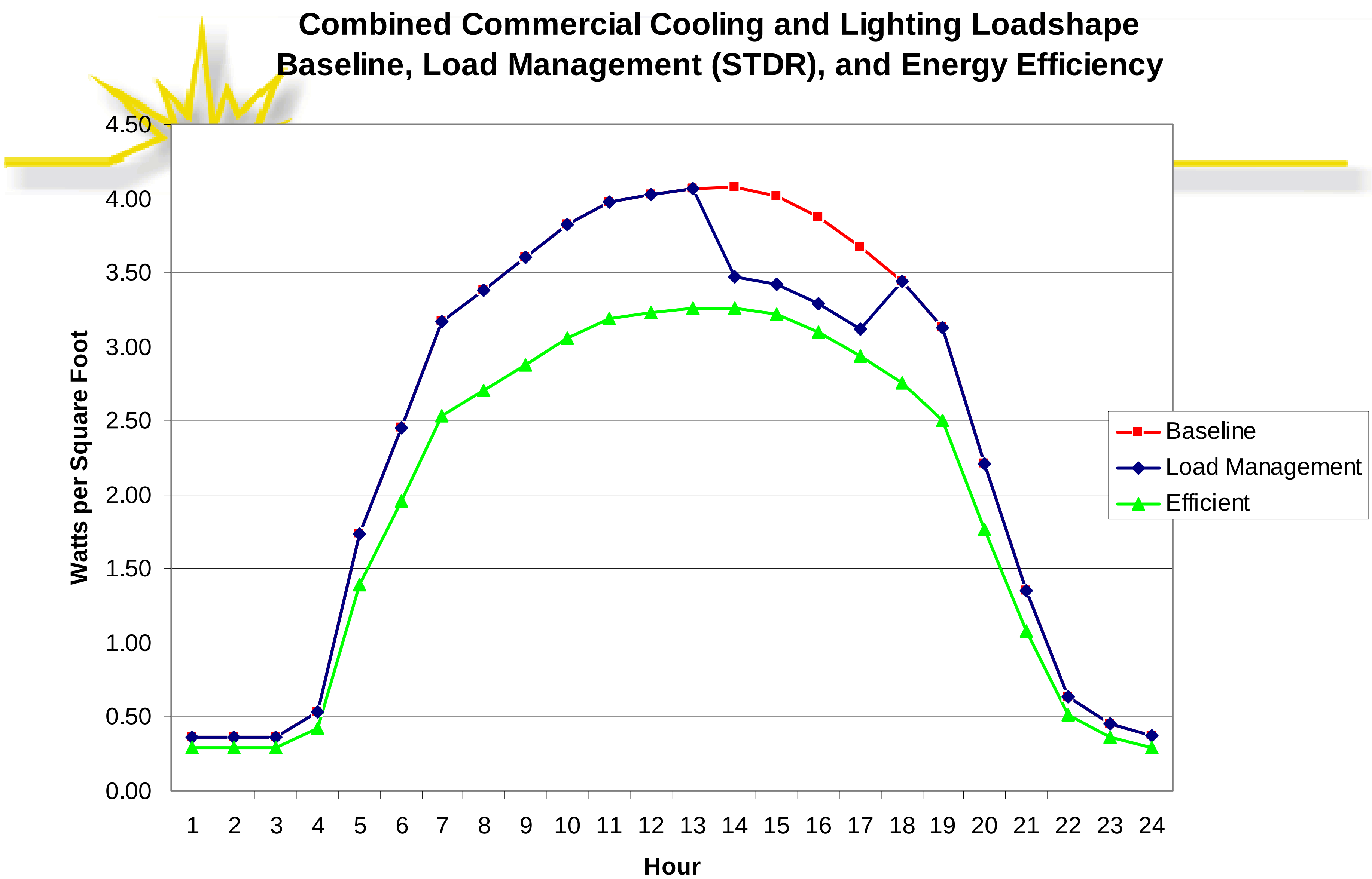
- Budgets initially set at percentages of revenue: 2% electric, 1.5% natural gas.
- Changed to energy and capacity goals.
- Cost recovery – contested until 1997.
- Costs plus return and rewards until 1997.
- Now, costs are expensed via concurrent recovery. No returns, no rewards, no lost revenues, decoupling being discussed.

Iowa IOU DSM Spending

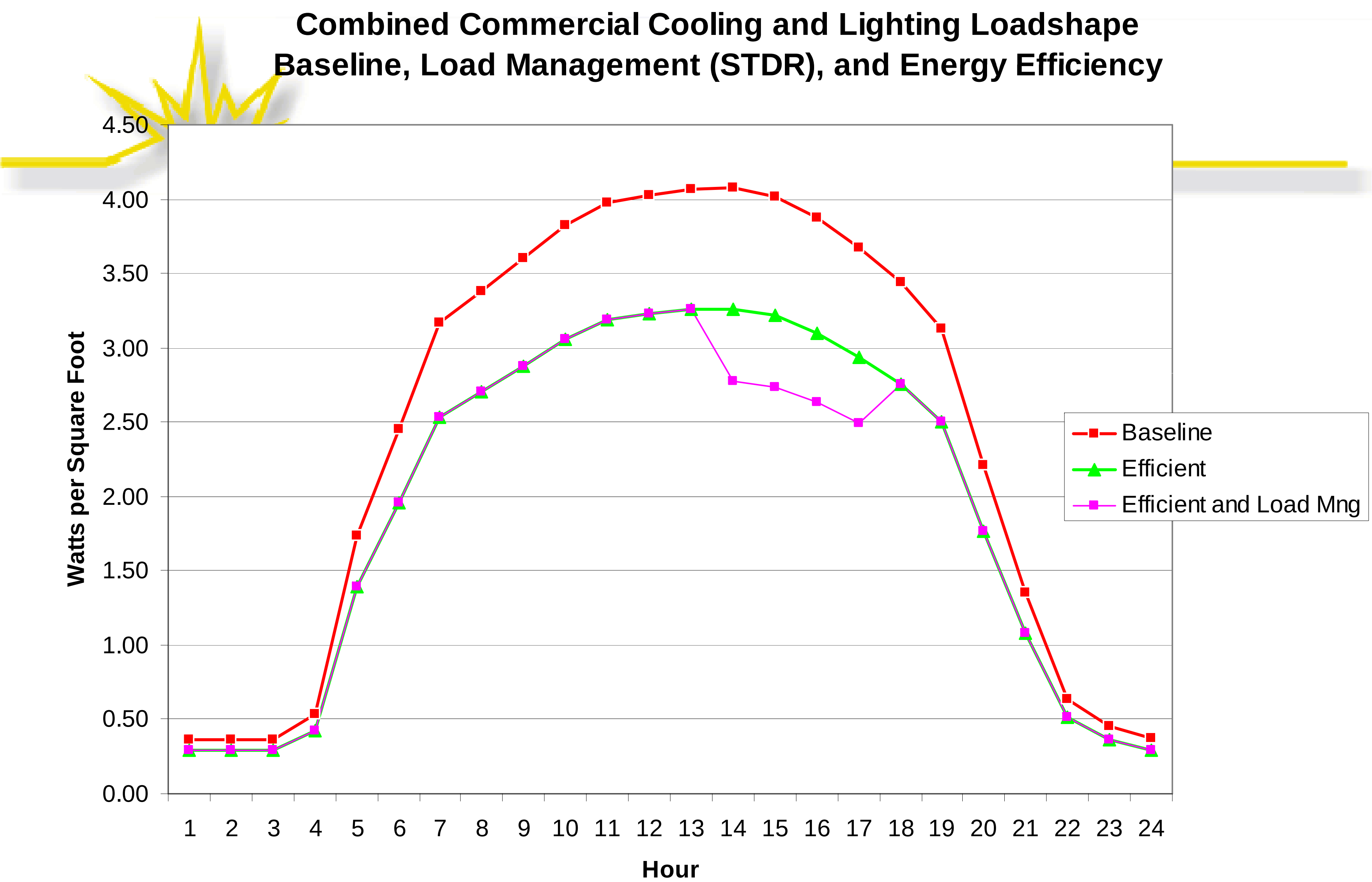


A few budget details

- Equity by customer class and region is a good long term strategy
- Pay attention but don't worry too much about Administration and General
  - Important factor is **<u>outcomes</u>**
  - Accounting methods from state to state are different, so comparing A&G is confounding
- Low unit costs come from maximizing savings per customer contact (important lesson learned!)
  - Treat whole buildings, avoid piecemeal delivery



Combined Commercial Cooling and Lighting Loadshape
Baseline, Load Management (STDR), and Energy Efficiency
Watts per Square Foot
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
Baseline
Load Management
Efficient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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
Baseline
Efficient
Efficient and Load Mng

Administration of Energy Efficiency

- Utility – builds on customer relationship, opportunity to integrate into other resources
- State – addresses throughput conflict
- Third Party – keep government in its "overseer role, can add competitive element

- All can work well or fail, and the choice is a preference on what works best, or political

Role of Regulator Overseeing Energy Efficiency Programs

- EE budget is the consumer's money
- Implement statute
  - Backbone clarifies details for everyone – certainty will help to produce quality
  - Latitude important to deal with utility-specific details, and changes in circumstances over time
- Deal with unexpected developments

EM&V

- Evaluation, Measurement and Verification are vital parts of the EE effort
  - Some states require EM&V independence from the administrator
  - Rough cost: 5% of total, could be more at the beginning, for smaller programs, or in years with a greater EM&V effort
  - Good models in US to draw from

Integration of EE into Resource Planning and Investment

- Is EE an afterthought? Just a social program?
  - Are utility generation expansion plans created with a static load forecast?
  - Are transmission expansion plans created with a static load forecast?
  - Is energy efficiency deployed with any consideration of avoiding generation or wires?

Integration of EE into Resource Planning and Investment

- Energy efficiency can be the least cost alternative for meeting consumer electricity needs if planners ask the right questions
  - How much energy efficiency (reduced load growth) would alleviate the need for this new transmission line?
  - How much energy efficiency would it take to achieve sustained zero load growth?

"Is Energy Efficiency 'Real'?"

- Utilities, especially system operators, ask a good question
  - They want to know that when the system needs the promised effects of energy efficiency that EE will deliver, and they start out skeptics
  - EM&V is key (when are "deemed savings" OK?)
  - Some programs are more "hard wired" than others
  - All programs deliver some resource benefit
  - Better question: "How to get an accurate measure of system benefit from energy efficiency?

Performance Goals for Energy Efficiency Program

- Many Examples
- Some come from Performance Measures
  - Amount of saved kWh, penetration of certain appliances, number of buildings
- Some are Policy or Resource Driven
  - Savings equal to x% of sales or peak demand
- Connect with incentives discussion

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Paying for Energy Efficiency and Utility Incentives

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III. Paying for Energy Efficiency, Compensating the Utility

- Cost Recovery
- The Throughput Incentive and Solutions
- Incentives
- Time Sensitive Rates
- New ideas

Funding Energy Efficiency

- Efficiency is a resource, like any other resource necessary to the least-cost provision of service
- How much EE should be purchased?
  - Ideal: all societally cost-effective measures
    - Legal requirement in some states: e.g., CA, VT
  - Practical: Budgets constrained by a variety of considerations

EE Cost Recovery

- Utility EE costs should be treated as any other prudent cost of service item:
  - Rate based: Amortized over a specified period (life of measure or less); unamortized portion earns a return
    - Logic: Reduces initial rate impacts and links cost recovery to the useful life of the investment, similar to supply-side investments
    - Many states took this approach, then changed: e.g., CA, WI, NY, VT (almost none of this now)
  - Expensed: Current year cost recovery; no return on investment but also no risk of stranded regulatory asset
    - With a fuel-adjustment clause and annual adjustments to base rates, net lost revenue impacts are minimized
    - E.g., New England Electric System/National Grid

Traditional Regulation: The Throughput Problem

- Traditional ROR regulation sets *prices*, not *revenues*
  - The revenue requirement is simply an estimate of the total cost to provide service
- Without adjustment, consumption-based rates ($/kWh and $/kW) link profits to sales
  - The more kilowatt-hours a utility sells, the more money it makes
  - This is because, in most hours, the price of electricity is greater than the cost to produce it
    - *Utility makes money even when the additional usage is wasteful, and loses it even when the reduced sales are efficient*
- The profit incentive to increase sales is extremely powerful

Two Solutions (aside from independent administration)

- Adjustments for net lost revenues under traditional ROR ratemaking
  - Compensates utility for contribution to fixed costs that is lost as a consequence of successful energy efficiency
- Decoupling
  - Ratemaking is reformed to break the link between sales and profits

Administrator Performance Incentives

- Decoupling and, to a lesser extent, net lost revenue recovery remove the disincentive to EE investment
- To encourage superior performance, some states offered utilities or administrators positive financial incentives
- Penalties for non-performance?

Performance Incentives: For Both ROR and PBR

- Shared savings
  - Return to utility of some fraction (say, 10-20%) of the savings (avoided costs) from the EE
    - Goes directly to utility's bottom line
  - Collars and deadbands
- Performance targets
  - Specified rewards (e.g., % of EE budget) for achieving a mix of targets
    - Energy savings, capacity reductions, customer installations, reductions in program administration costs, etc.
- ROE adder
  - A premium on the ROE applied to unamortized portion of EE costs included in ratebase

1989 NARUC Resolution

- "Reform regulation so that successful implementation of a utility's least-cost plan is its most profitable course of action"

Approaches to Address Utility Incentives for Energy Efficiency

- Lost Revenue/Expense Recovery
- Decoupling utility profits from sales volume
- Providing positive incentives for meeting efficiency goals

Net Lost Revenue Recovery

- Adjustment that tracks the implementation of energy efficiency and uses statistical means to determine net lost revenues
- Recovery of net lost revenue can be contingent on achieving certain energy efficiency program goals
- Alternatively, recovery of “program expenses”

Lost Revenue/Expense Approaches

- Kentucky
- Nevada

Lost Revenue/Expense Approaches: Kentucky

- Allows lost revenue recovery for both electric and gas DSM programs.
- Recovery mechanisms are determined on a case-by-case basis
- Utilities can recover
  - Full costs of commission-approved demand-side management programs and
  - Revenues lost
  - Incentives designed to provide financial rewards to the utility for implementing cost-effective demand-side management programs
- Not in active use for all eligible utilities

Lost Revenue/Expense Recovery Approaches: Nevada

- Utility required to track and separate costs
- For Commission approved action plan programs, utility may recover labor, overhead, materials, incentives paid to customers, advertising, marketing and evaluation

Traditional Regulation: Provides Strong Disincentives for Energy Efficiency

- Utility revenues and profits are linked to unit sales (kW, kWh, therms, etc.)
- Loss of sales due to successful implementation of energy efficiency will lower utility profitability
- The effect may be quite powerful…

Assumptions for A Sample Utility

Assumptions	
Operating Expenses	$160,000,000
Rate Base	$200,000,000
Tax Rate	35.00%

Cost of Capital	% of Total	Cost Rate	Weighted Cost Rate		Dollar Amount	
			Pre-tax	After-Tax	Pre-Tax	After-Tax
Debt	55.00%	8.00%	4.40%	2.86%	$8,800,000	$5,720,000
Equity	45.00%	11.00%	4.95%	7.62%	**$9,900,000**	$15,230,769
Total	100.00%			10.48%		

Revenue Requirement	
Operating Expenses	$160,000,000
Debt	$5,720,000
Equity	$15,230,769
Total	$180,950,769
Allowed Return on Equity	$9,900,000

How Changes in Sales Affect Earnings

	Revenue Change		Impact on Earnings		
% Change in Sales	Pre-tax	After-tax	Net Earnings	% Change	Actual ROE
5.00%	$9,047,538	$5,880,900	$15,780,900	**59.40%**	17.53%
4.00%	$7,238,031	$4,704,720	$14,604,720	**47.52%**	16.23%
3.00%	$5,428,523	$3,528,540	$13,428,540	**35.64%**	14.92%
2.00%	$3,619,015	$2,352,360	$12,252,360	**23.76%**	13.61%
1.00%	$1,809,508	$1,176,180	$11,076,180	**11.88%**	12.31%
0.00%	$0	$0	$9,900,000	**0.00%**	11.00%
-1.00%	-$1,809,508	-$1,176,180	$8,723,820	**-11.88%**	9.69%
-2.00%	-$3,619,015	-$2,352,360	$7,547,640	**-23.76%**	8.39%
-3.00%	-$5,428,523	-$3,528,540	$6,371,460	**-35.64%**	7.08%
-4.00%	-$7,238,031	-$4,704,720	$5,195,280	**-47.52%**	5.77%
-5.00%	-$9,047,538	-$5,880,900	$4,019,100	**-59.40%**	4.47%

A Change in Approach Is Needed

- “Throughput” incentive is at odds with a requirement to invest in cost-effective energy efficiency
- Policies should, instead, align utilities’ profit motives with acquisition of all cost-effective energy efficiency
- Decoupling & profit incentives, coupled with strong regulatory and legislative policy support and industry leadership are a part of the solution

New Mexico: Example of Clear Policy Direction

- It serves the public interest to support public utility investments in cost-effective energy efficiency and load management by removing any regulatory disincentives that may exist and allowing recovery of costs for reasonable and prudently incurred expenses of energy efficiency and load management programs
- The commission shall identify any disincentives or barriers that may exist for public utility expenditures on energy efficiency and load management and, if found, ensure that they are eliminated in order that public utilities are financially neutral in their preference for acquiring demand or supply-side utility resources

New **Mexico** Statutes, Chapter 62-17-2

Revenue-Profit Decoupling: What is it?

- Breaks the mathematical link between sales volumes and profits
- Objective is to make profits levels immune to changes in sales volumes
  - This is a revenue issue
  - This is not a pricing issue
  - Volumetric pricing approaches need not be changed
- Not intended to decouple customers bills from consumption (another topic for another day)

History of Decoupling: California

- California 1990s to Present
- Decoupling functioned well in early 90s
- Move to retail competition precipitated its end in 1996 on theory that market forces and consumer choice would handle efficiency
- Reinstated following the energy crisis of 2000-2001
- Continues to work well

History of Decoupling: Washington

- Washington (Puget Sound Energy) adopted decoupling in 1990
- Variable power costs recovered via a true-up based on actual experience (same as traditional regulation)
- Fixed costs recovered based on a revenue-per-customer calculation
- Marginal fixed costs were much lower than average fixed costs
- Purchased power costs were higher than expected
- Result: over recovery of fixed costs & large increases in power costs
- Lead to negative consumer reaction
- But, root cause of problem was underlying cost structure, not decoupling
- Recent effort to restore decoupling with Puget foundered over cost of capital issue

History of Decoupling: Maine

- Central Maine Power adopted decoupling in early 1990s
- Used an annual adjustment mechanism
- Economy suffered steep economic downturn that reduced sales several percent
- Result was large, unexpected increases in prices
- Again, root cause was underlying cost structure, not decoupling *per se*

History of Decoupling: Lessons Learned

- Annual adjustments may result in large price changes
- Consider limiting overall size of prices changes over time
- Consider use of exit ramps or required reviews if prices changes exceed some threshold
- Consider sharing arrangements for prices changes above some threshold

Revenue Decoupling: The Basic Concept

- Most effective method to decouple sales & profits
- Basic Revenue-Profit Decoupling:
  - Utility "base" revenue requirement determined with traditional rate case
  - Each future period has a calculable "allowed" revenue requirement
  - Differences between the allowed revenues and actual revenues are tracked on an average use per customer or other basis
  - The difference (positive or negative) is flowed back to customers in a small adjustment to unit rates

Decoupling Examples:

- Maryland – Gas Utilities
- North Carolina – Gas Utilities
- California – 3 IOUs (Electric & Gas)
- Oregon – Northwest Natural Gas
- New Jersey (NJNG)
- Utah (Questar)
- Idaho (Idaho Power)
- Washington (Avista & Cascade)

Decoupling: Maryland Baltimore Gas & Electric

- Decoupling mechanism for residential and general service gas customers
- Straight revenue-per-customer method
- Based on prior rate case test year for base revenue per customer
- Monthly adjustment mechanism similar to traditional fuel and purchase power adjustments
- MADRI Model Rate Rider starting point

Maryland:
How BG&E Decoupling Works

- Allowed Revenues = Test Year Average Use per Customer X No. of Customers X Delivery Price
- Adjustment to Delivery Price = Allowed Revenues - Actual Revenues ÷ Estimated Sales
- Any difference between actual and estimated sales is reconciled in a future month
- Calculated separately for each class
- Calculation of the billing adjustment are filed monthly with the Public Service Commission

Decoupling: North Carolina An Interesting Read

- North Carolina's three major gas utilities have decoupling mechanism
- Expressed importance of highly volumetric rate structures and lower fixed customer charges
- Rejected some arguments against decoupling
- Good overall discussion of policy framework for decoupling

North Carolina: Approaches Rejected

- Rejected higher fixed charge approach as unpopular with customers
- Rejected Attorney General's argument that proposal would penalize customers for conserving

North Carolina: Customers & Shareholders

- "Different usage patterns and tariffs of industrial customers" provide good cause to exclude class from mechanism
- Approved as an experimental tariff limited to no more than 3 years
- Required utility contribution toward conservation programs (e.g. $500,000 per year for Piedmont)
- Required utility to work with the Attorney General and the Public staff to develop appropriate and effective conservation programs to assist its residential and commercial customers

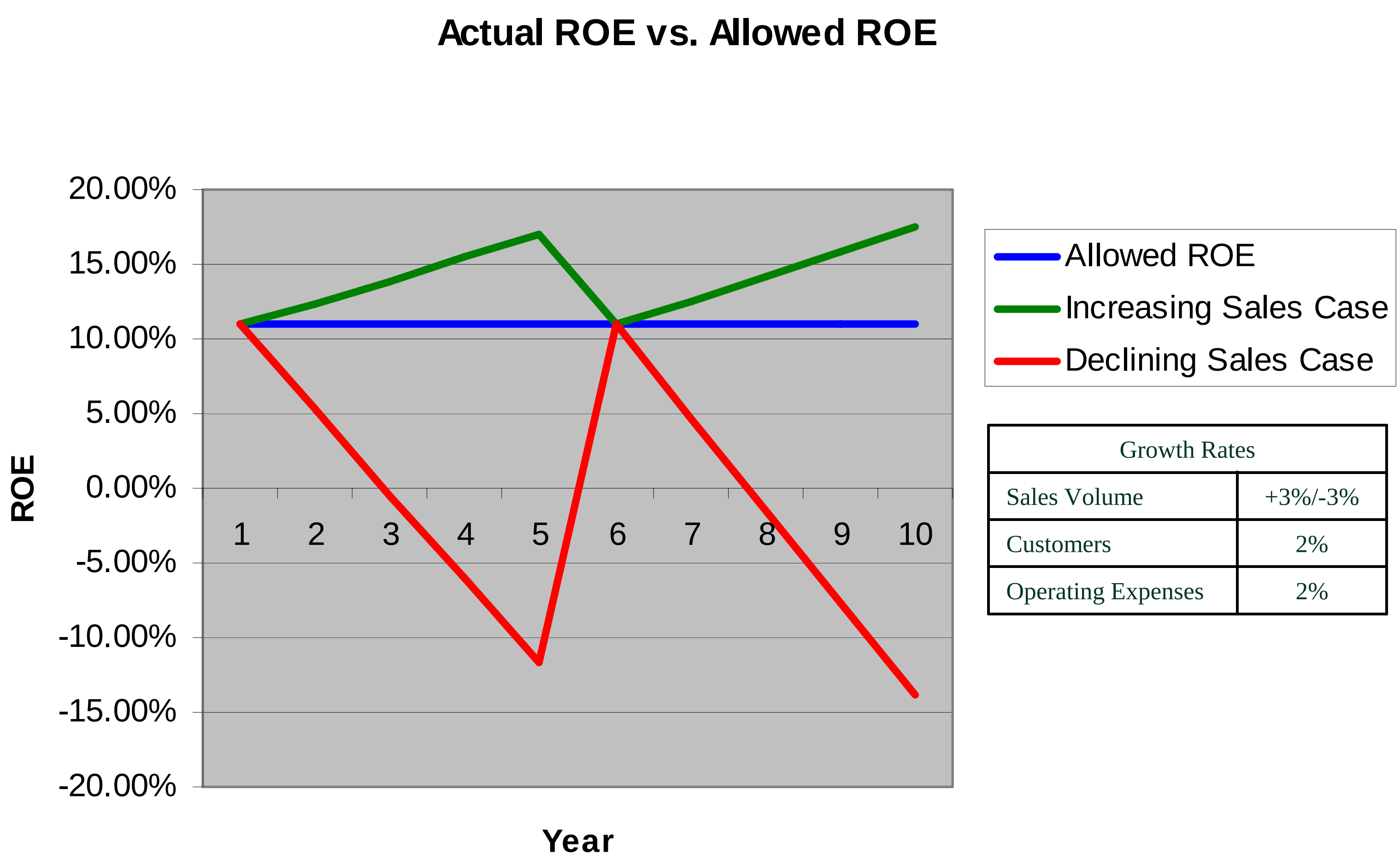
Decoupling: North Carolina Rationale for Decoupling

- Recognized conservation has potential for financial harm to the utility and its shareholders
- Cited number of benefits: Improved opportunities for conservation of energy resources, savings for customers, downward pressure on wholesale gas prices, helping utility recovery of margin and a reasonable return
- Decoupling better aligns interests of Company and customers with respect to conservation
- Commission on Shareholder Risk: "In a period of declining per-customer usage, a mechanism that decouples recover of margin from usage, without requiring the utility to file frequent rate cases or increase unpopular fixed charges, clearly reduces shareholder risk."

Which Brings Us To: A Policy Tale of Two Utilities

- Rising revenue-per-customer utilities:
  - Experience rising earnings between rate cases
  - Typical of many electric utilities
- Declining revenue-per-customer utilities:
  - Experience declining earnings between rate cases
  - Typical of many gas utilities
- Under reasonable assumptions, not symmetric between rising and declining cases
- Usually driven by differences in the average consumption between new and old customers
- Policy question: Should decoupling be “profit neutral” relative to future such profit expectations?

What Happens to ROE Under Traditional Regulation?



Growth Rates	
Sales Volume	+3%/-3%
Customers	2%
Operating Expenses	2%

California Decoupling Basics

- Part of an aggressive and comprehensive policy framework designed to deploy cost-effective energy efficiency
- Covers SDG&E/SocCalGas, PG&E and SCE
- Tracks difference between allowed revenues and actual revenues
- Trued up each year to that year's authorized revenues
- Revenue requirements are adjusted each year for inflation
- Each utility has individual mechanisms for determining annual revenue requirements

California Case Specifics: Company Plan Features

- Southern California Edison
  - Citing:
    - Poor financial health of company
    - Changed circumstances since such adjustments were rejected (20 years ago)
  - Commission approved “non-test year” revenue requirement adjustments
  - Implemented revenue balancing account for over- / under-collections of revenue adjustment
- San Diego Gas & Electric and SoCalGas
  - Each year’s revenue requirement is determined by the previous year’s base margin adjusted by CPI
  - Minimum and maximum authorized adjustments (in 3%-4% range)
  - Balancing account for adjustment collections
  - Sharing mechanism

California: SDG&E/SoCalGas Shareholder & Customer Sharing

Earnings Band	Shareholders	Ratepayers
0 - 50	100%	0%
51 – 100	75%	25%
101 – 125	35%	65%
126 – 150	45%	55%
151 – 175	55%	45%
176 – 200	65%	35%
201 – 300	75%	25%
Over 300	Suspension	

Pacific Gas & Electric

- Separate Distribution and Generation mechanisms:
  - DRAM (Distribution revenue adjustment mechanism) and
  - UGBA (Utility Generation Balancing Account) revenue adjustment mechanisms
- Allowed revenues: annual CPI-based attrition adjustments for 2004-2006, with following minimums and maximums:

Year	Min	Max
2004	2.00%	3.00%
2005	2.25%	3.25%
2006	3.00%	4.00%

Decoupling: Oregon Northwest Natural Gas

- Defers and subsequently amortizes 90 percent of the margin differentials in the residential and commercial customer groups
- Average customer margin-per-therm calculation
- Calculated Monthly
- Places weather risk on utility

Speaking of weather… What about weather risk?

- Myth: Decoupling "shifts" weather risk from utility to customer
- Reality: Utility and customer take (or avoid) weather risk together
- Simplest form of decoupling insulates utility and customers from weather risk
- Elimination of weather risk has cost of capital implications

MADRI Model Rule

- Used BG&E Rate Rider as starting point
- Model Rule is product of collaborative stakeholder process
- Available at: http://www.raponline.org/Feature.asp?select=78
- Tracks on demand and energy basis

Positive Incentives

- Arizona
- Connecticut
- Massachusetts
- New Hampshire
- Nevada
- Vermont

Positive Incentives

- Arizona
  - Required funding levels ~$10M+ & low income assistance
  - Utility keeps up to 10% of net economic benefits
- Connecticut
  - Utilities receive “performance management fees” tied to performance goals based on lifetime energy savings and demand savings (2004: ~$5.3M)
  - Incentives earned for outcomes from 70-130% of pre-determined goals (2006 budget $2.9M)
- Massachusetts
  - Shareholder incentive of five percent of funding for 75%-110% of design level performance
  - Regulatory finding: Incentives must be large enough to promote good program management, but small enough to leave almost all of the energy efficiency funds to directly serve customers

Positive Incentives

- Minnesota
  - Utilities receive a percentage of total net benefits (avoided costs minus program costs) when performance levels are met or exceeded
- New Hampshire
  - Cost-effectiveness incentive of 4% of budget times cost-effectiveness ratio (actual to planned cost-effectiveness) – minimum ratio of 1.0
  - Energy Savings incentive of 4% of budget times ratio of actual to saved energy savings - minimum 65% of planned energy savings

Positive Incentives

- Nevada
  - DSM bonus rate of return 5% higher than returns for supply investments
  - Critical Facilities Incentive for reliability, diversity of supply- and demand-side resources, development of renewable resources, fulfilling statutory mandates and/or retail price stability, can be enhanced return on equity, CWIP treatment or creation of "regulatory asset" account
- Vermont
  - Efficiency Vermont receives performance incentives for meeting or exceeding specific goals in contract with Vermont's Public Service Board (PSB)
  - Incentive categories:
    - Program Results Incentives (electricity savings & resource benefits)
    - Market Effects Incentives (significant market transformation)
    - Activity Milestones Incentive (exemplary performance for rapid start-up and/or infrastructure development)

Learn More

- **Energy Efficiency Policy Toolkit**
  - http://raponline.org/Pubs/General/EfficiencyPolicyToolkit3-1-06.pdf
- **Profits & Progress Through Least-cost Planning**
  - http://www.raponline.org/Pubs/General/Pandplcp.pdf
- **Profits and Progress Through Distributed Resources**
  - http://www.raponline.org/showpdf.asp?PDF_URL=Pubs/General/ProfitsandProgressdr.pdf
- **Performance-based Regulation For Distribution Utilities**
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- **Performance-Based Regulation in a Restructured Electricity Industry**
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