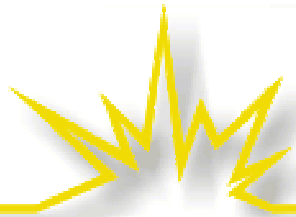


Recommendations for Environmental Commissioners

OTC High Electric Demand Day Meeting
February 1, 2007
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High Electric Demand Day Fixes

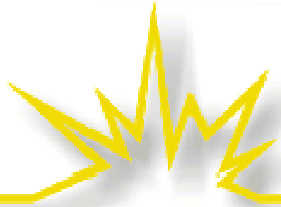
➤ Less Demand

- ❖ This does just mean reducing demand of end uses that occur at peak, but for all end uses

➤ Cleaner Power at Peak

- ❖ This does just mean cleaning power supplies that are used at peak, but for all power supply

A CLEAN, EFFICIENT ELECTRIC AGENDA



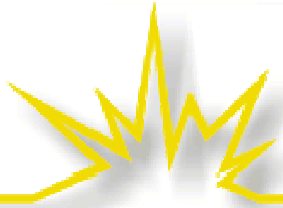
Less Demand

- Demand does not “just happen”
- Demand today is driven by policy
 - ❖ How to utilities/regulators design energy prices
 - ❖ What signals these prices, etc. send
 - ❖ What incentives are offered sellers and buyers
 - ❖ Can we do anything about local land use policy? (sprawl vs. infill, code enforcement...)



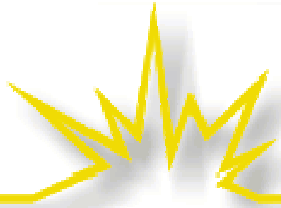
Addressing Barriers

- Programs to secure cost-effective demand destruction
- More efficient prices
 - ❖ These two transform markets, multiply gains
- Make incentives work with public policy
- Key people must work better together
 - ❖ Why don't they now?



Programs

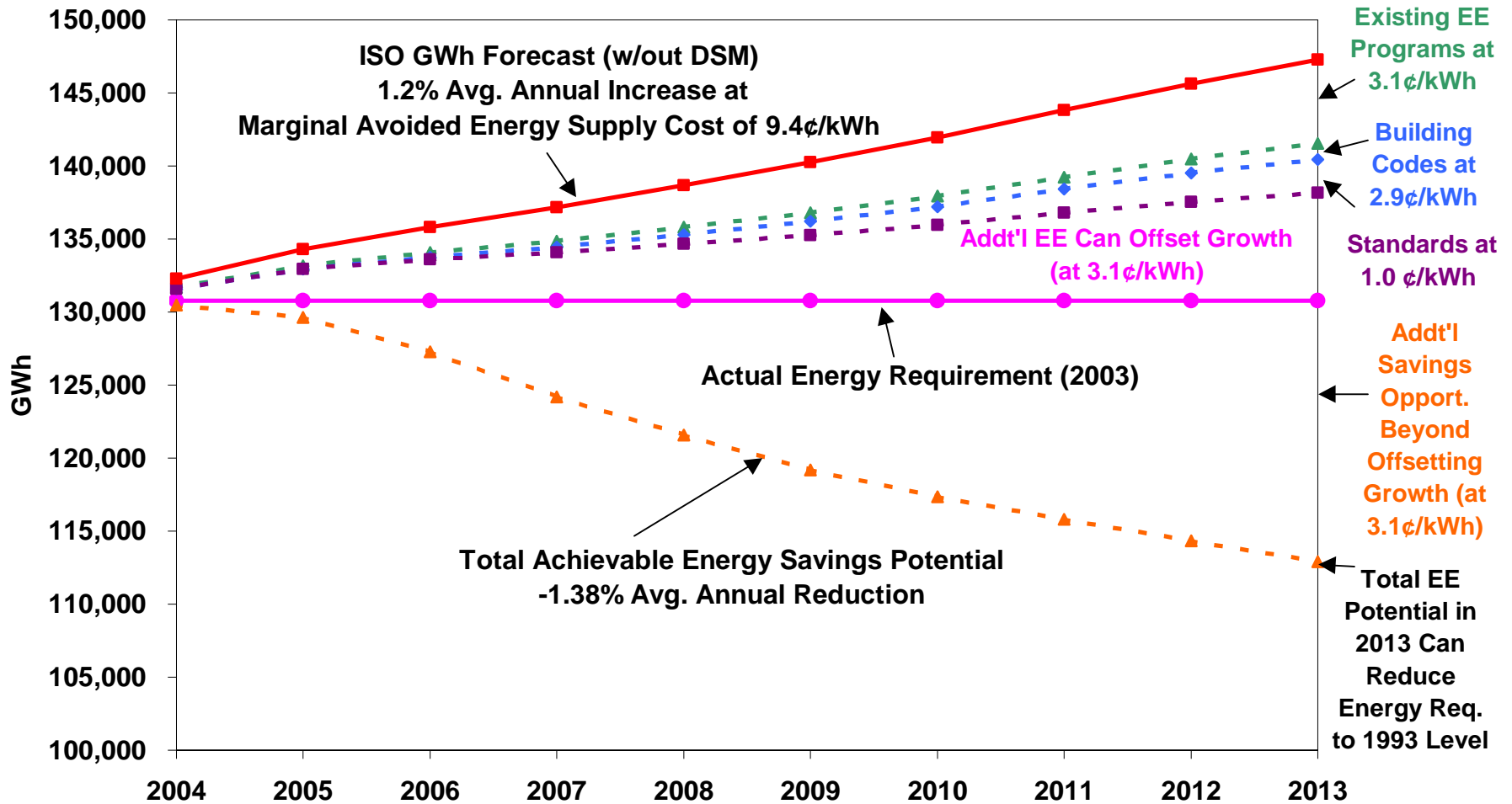
- Programs save energy better than prices
 - ❖ Rule of thumb: ratio is 10 to 1
- Energy efficiency – Big Potential
- Demand response – Targeted Potential
- Promoting local generation – Disruptive change in building design
- Performance driven – reward savings



Energy Efficiency

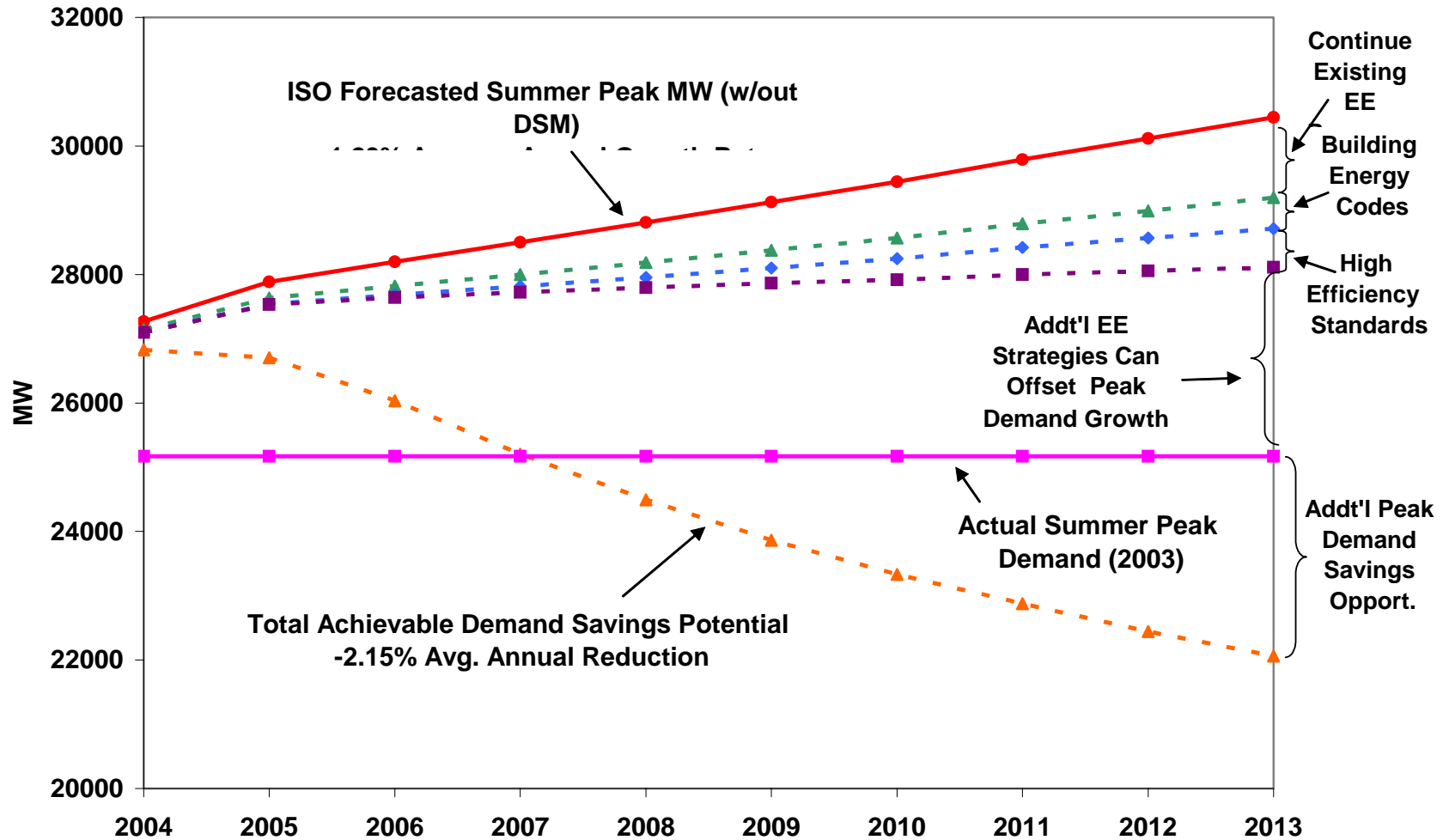
- Only 1 state in OTC, Vermont, is organized to procure all cost-effective energy efficiency
 - ❖ Even there, air quality value not fully considered
- Several states cap spending on the most cost-effective resource there is
- Several states have no energy efficiency programs

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

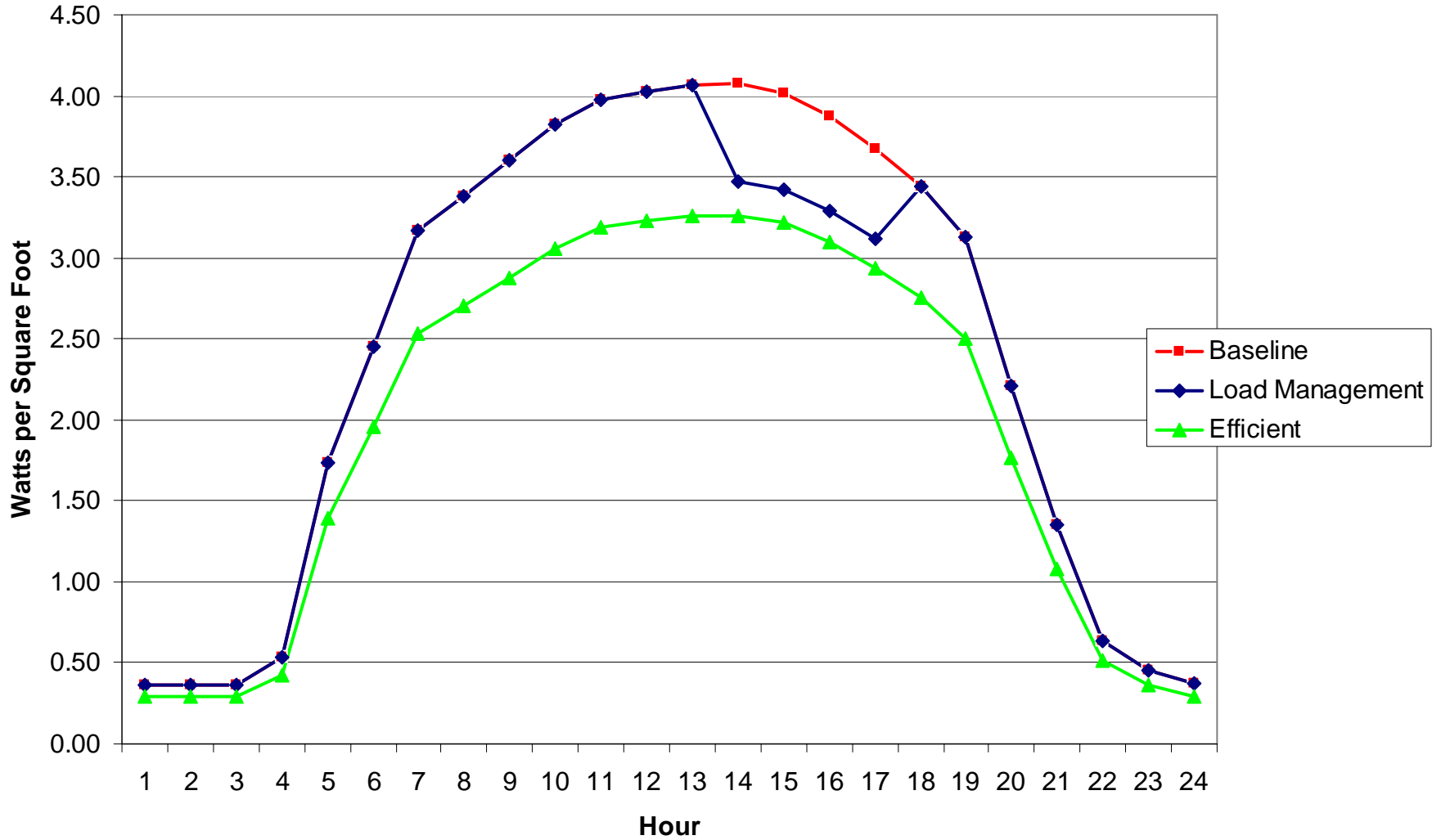


New England EE potential (PJM closer to red line)

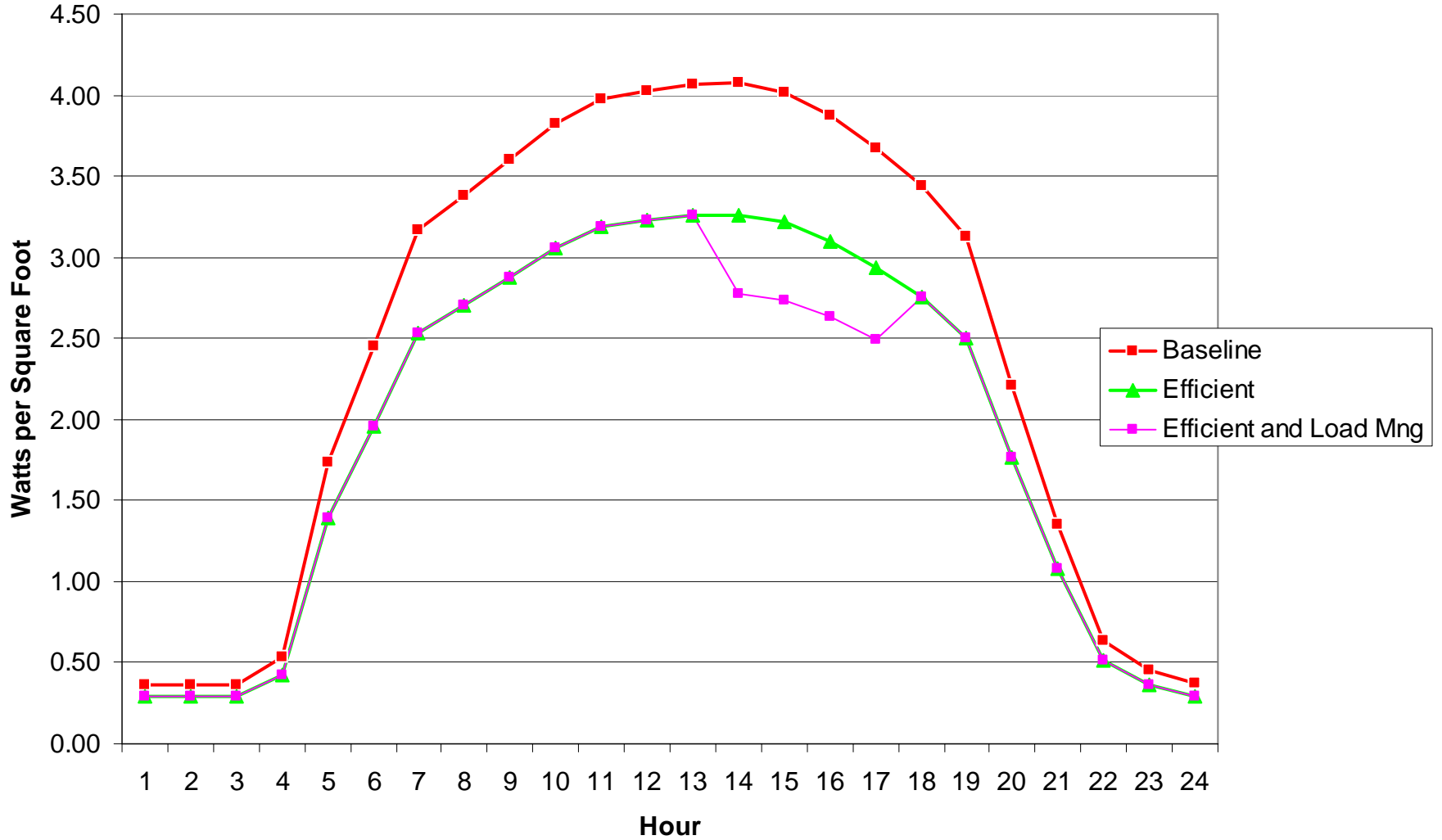
Cumulative Impact and Cost of Energy Efficiency on Reducing ISO Forecasted Peak Demand (MW) in New England



Combined Commercial Cooling and Lighting Loadshape Baseline, Load Management (STDR), and Energy Efficiency



Combined Commercial Cooling and Lighting Loadshape Baseline, Load Management (STDR), and Energy Efficiency





Prices

- Averages send no signals
 - ❖ Dynamic prices motivate efficiency
- Markets can better value energy efficiency
 - ❖ EE and DR in capacity market in all RTOs
- Taxes and Subsidies
 - ❖ Activate legislature – make demand control a design principle for electric statute, not an add on



STUDY FINDS UP TO \$182 MILLION ANNUAL SAVINGS FROM ELECTRICITY DEMAND RESPONSE IN MID-ATLANTIC REGION

- A study has found that a modest reduction in electricity use during peak hours would reduce energy prices by at least \$57 - \$182 million annually in the Mid-Atlantic region.
- Examined effects of reducing electricity use by 3% during the highest use hours for five utility areas. “More widespread participation and deeper curtailments would result in even greater price impacts.”
- The five mid-Atlantic public utility commissions and PJM worked together to show actual savings possible from greater use of demand response.
- A 3% reduction during the peak use hours for each utility studied would have *reduced energy market prices* by \$8 to \$25 per megawatt-hour. Actual demand response typically has been less than one percent of use during peak hours.
- In addition to reductions in electricity prices, demand response *participants* were estimated to save \$9 million to \$26 million for *energy* annually and another \$73 million for *capacity* charges.
- The study compared prices without and with demand response reductions during the top 20 five-hour periods in 2005 for each utility. The five utility areas were Baltimore Gas and Electric, Delmarva Power, PECO, Pepco and Public Service Electric and Gas Company.



Other Policies

- Attack barriers to clean DG
- Screen DG for clean units
- Decoupling profits from sales
 - ❖ Utilities increasingly open to decoupling
 - ❖ Growth comes with too much risk



Better information

- How does the marginal emission rate tend to change at various summer load levels?
 - ❖ Cooperation between air regulators and RTO critical for efficient management of reliability and air quality objectives
- Explain to RTOs and utilities how to factor environmental values into system planning
 - ❖ Use that info to target demand side solutions



What can OTC Commissioners Do?

- Work with PUCs, though there is constant “entropy” in the economic – environment regulator relationship
 - ❖ Many PUCs (and FERC) don’t see environment as their concern aside from siting cases
 - ◆ Ex Parte rules work to prevent PUC engagement >> **Workshops**
 - ◆ So environmental values are ignored
 - ❖ Both sides see the others’ concerns as specialized, arcane and difficult to master >> **invite to the other’s meetings**
 - ❖ Sustained understanding and cooperation takes work
 - ◆ Statutes can help to sustain effort, **leadership** also critical



Good signs – DEPs can loudly encourage

- Vermont increases EE by 70% to 4.5+% of net utility revenues
 - ❖ Other states are thinking about increasing EE programs
- Consumer allocation in RGGI catching on
- Demand response programs: more experience, better appreciation of value
- Dynamic pricing pilots further dampen demand and create market transformation
- DG policies slowly improving



Menu of Solutions that OTC Members Can Support

- More energy efficiency
- More demand response
- More clean DG/CHP
- Better pricing
- Targeted thru planning
- Include air quality in cost-effectiveness test
- Local Land Use
- Participate at PUC
 - ❖ Alternative formats
 - ❖ And their regional mtg
 - ❖ Utility performance
- Participate at RTO
 - ❖ Value of demand side
- Make carbon management about efficiency
- Align statutes

Persistence and Leadership Pays



For the SIP

➤ Good news

- ❖ Motivation for demand side reform is growing
 - ◆ Fear of gas price increases
 - ◆ Worry about new generation options
 - ◆ Worry about climate change regulation
- ❖ Regulators are training greater attention on new demand side initiatives
 - ◆ These will also help NO_x attainment



Suggestion

- Placeholders in SIPs for potential demand side
 - ❖ Recognizes that quantifying these good signs is premature, but positions states to take credit for them ASAP
- US EPA role important
 - ❖ Recognize the transition underway
 - ❖ Encourage engagement between economic and environmental regulators
 - ❖ Enforcement should encourage and recognize positive steps (use discretion, good faith)