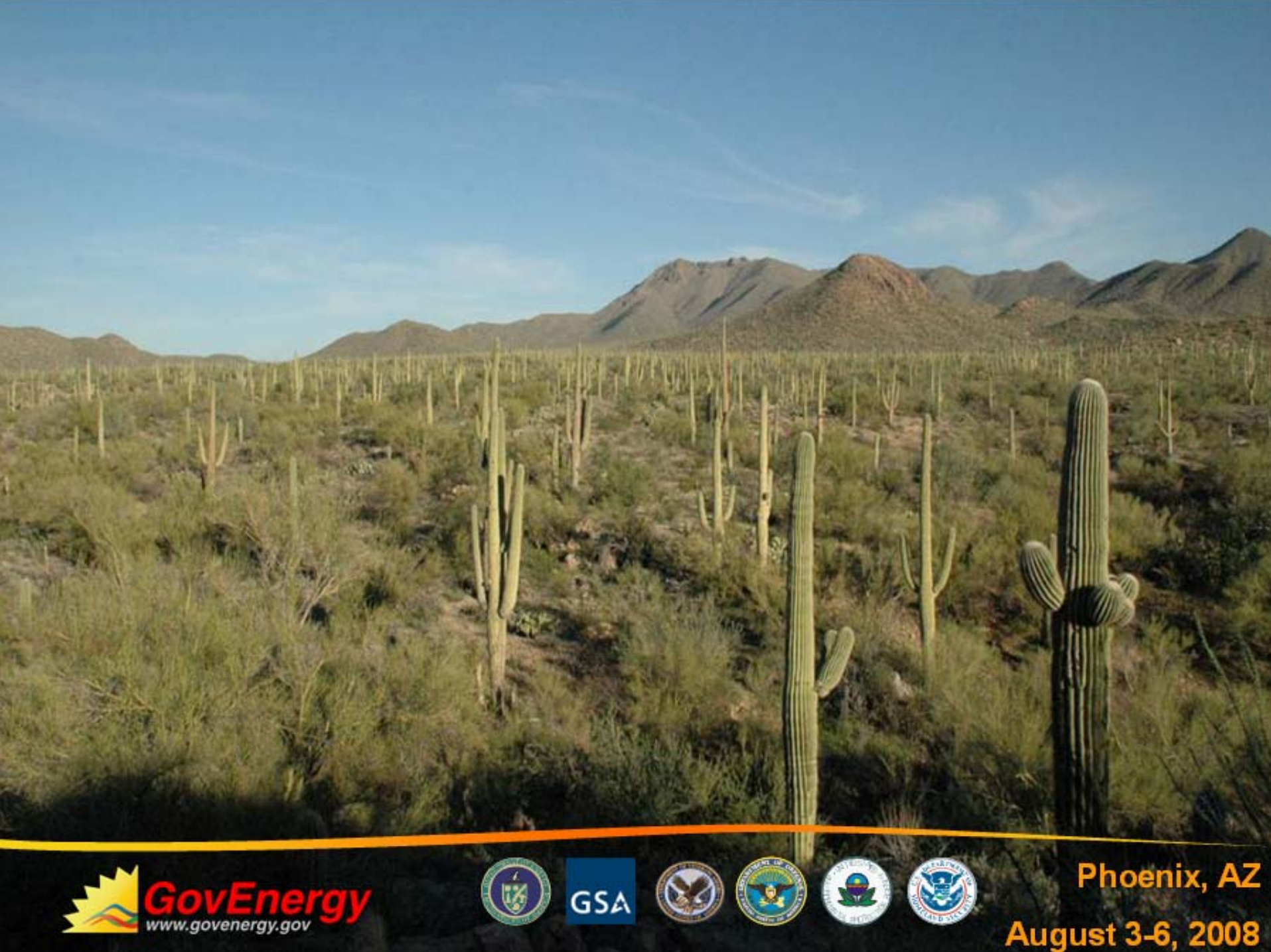

GovEnergy
www.govenergy.gov
GSA
Phoenix, AZ
August 3-6, 2008

Finding Your Way With Efficiency: The Road Ahead

Miles Keogh

Director, Grants & Research

National Association of Regulatory Utility Commissioners

GovEnergy

www.govenergy.gov

On The Map

- What's moving energy efficiency?
- What directions are we headed in?
- How do we keep the utilities on the road?
- Reaching the destination

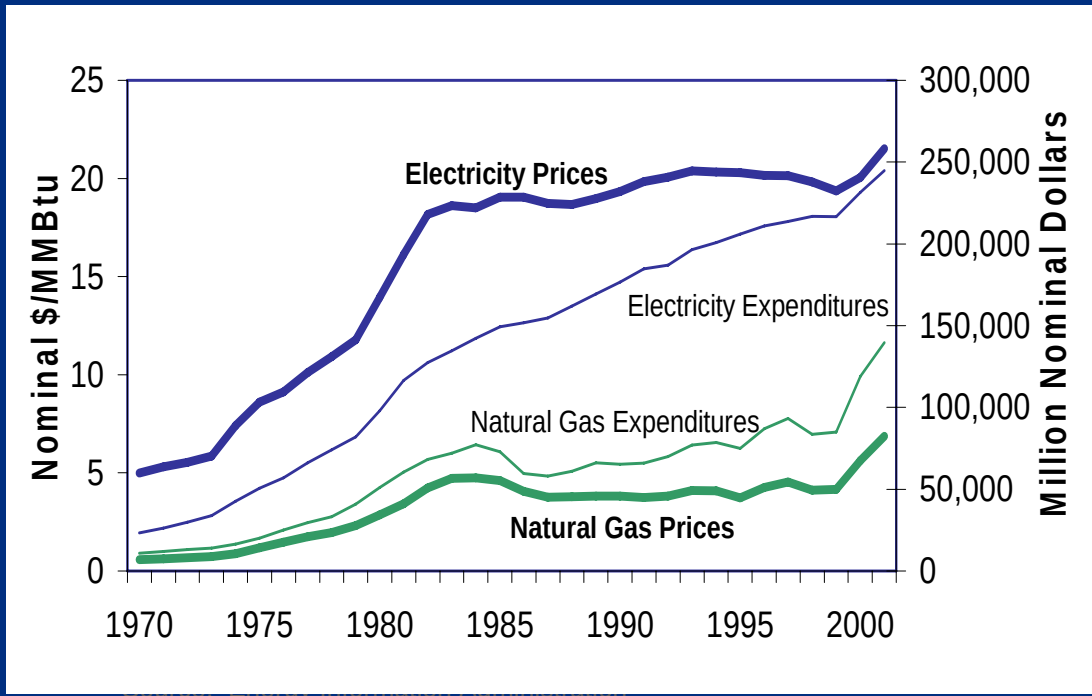
GovEnergy
www.govenergy.gov

Miles Keogh, NARUC

August 3-6, 2008

What's moving interest in efficiency?

- Higher energy prices than seen for decades
- Resource adequacy & reliability issues
- Lack of appealing new supply
- Investment risk associated with climate change
- Pending capital expenses for transmission and relief for load pockets
- Security concerns



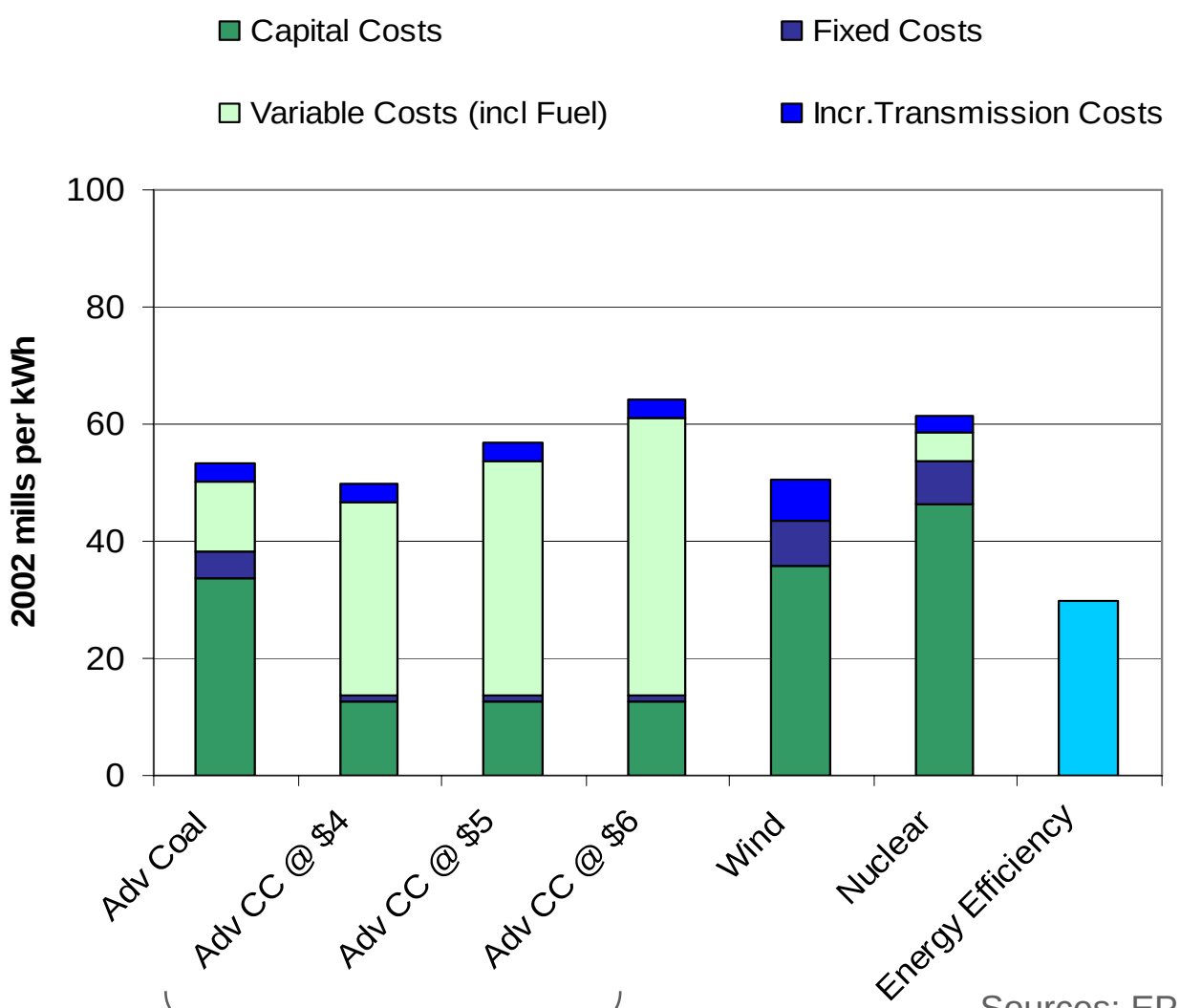
U.S. Residential Sector Energy Prices and Expenditures (1970-2002)

Miles Keogh, NARUC

GovEnergy
www.govenergy.gov

August 3-6, 2008

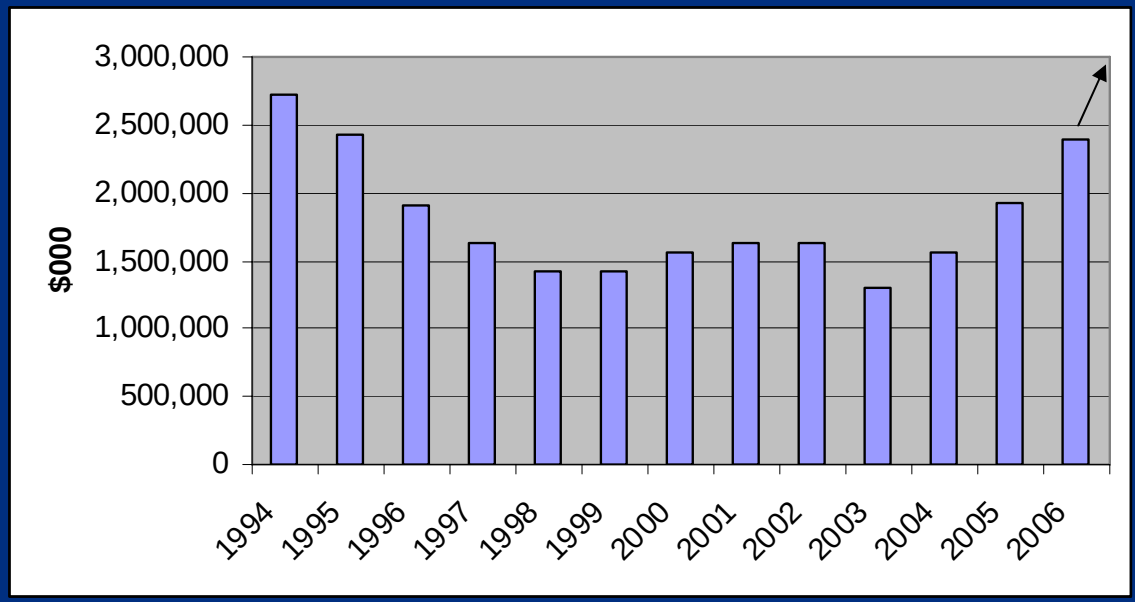
Energy Efficiency is Cheap



Sources: EPA, EIA 2004, ACEEE 2004

What direction are we headed?

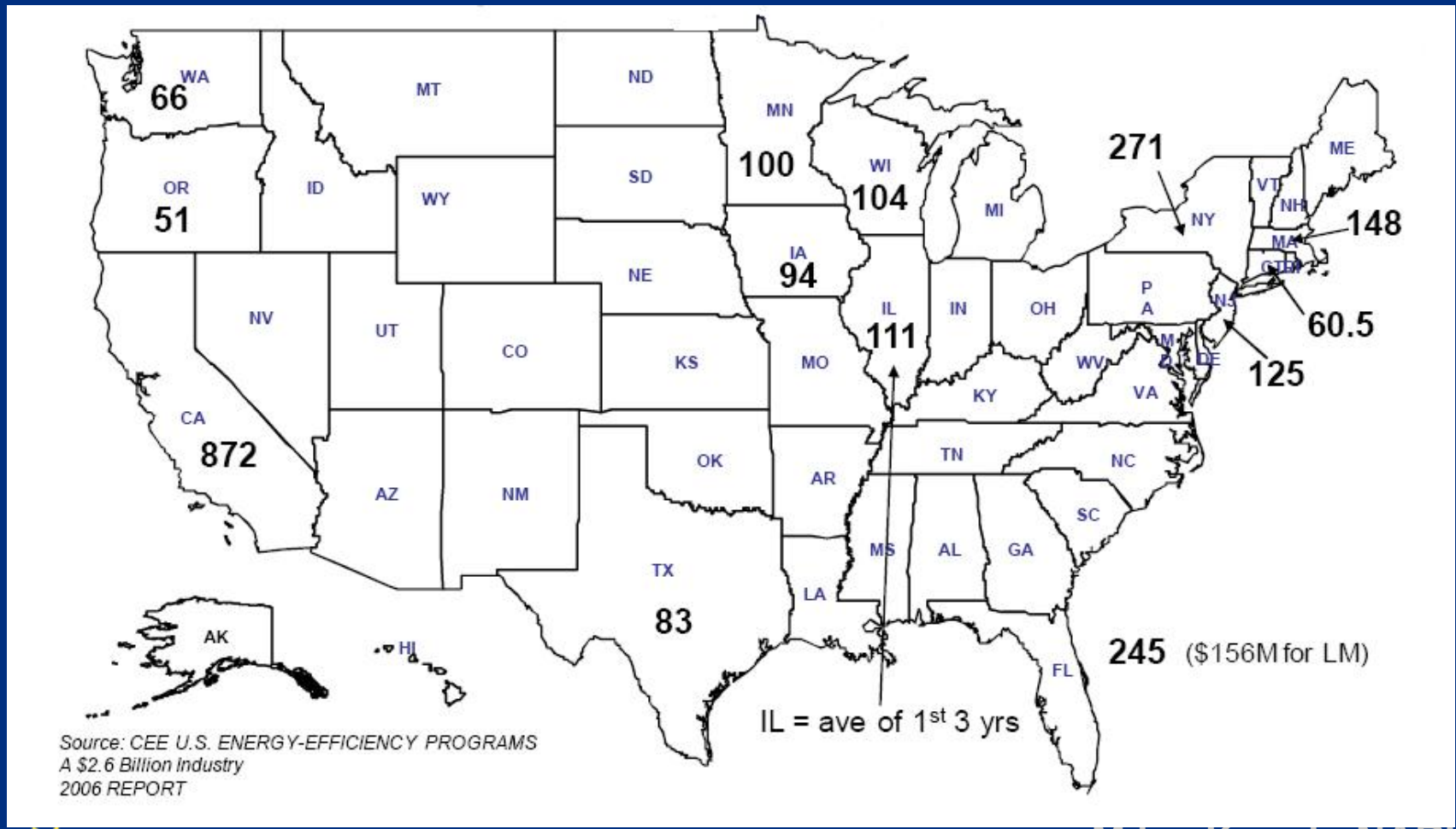
Annual Electric Utility Spending on Energy Efficiency



Will eclipse $3B within several years because of new requirements in IL, MO, MD, OH, MI, CA, NV, TX, NM, ...and others

GovEnergy
www.govenergy.gov

Who's spending?

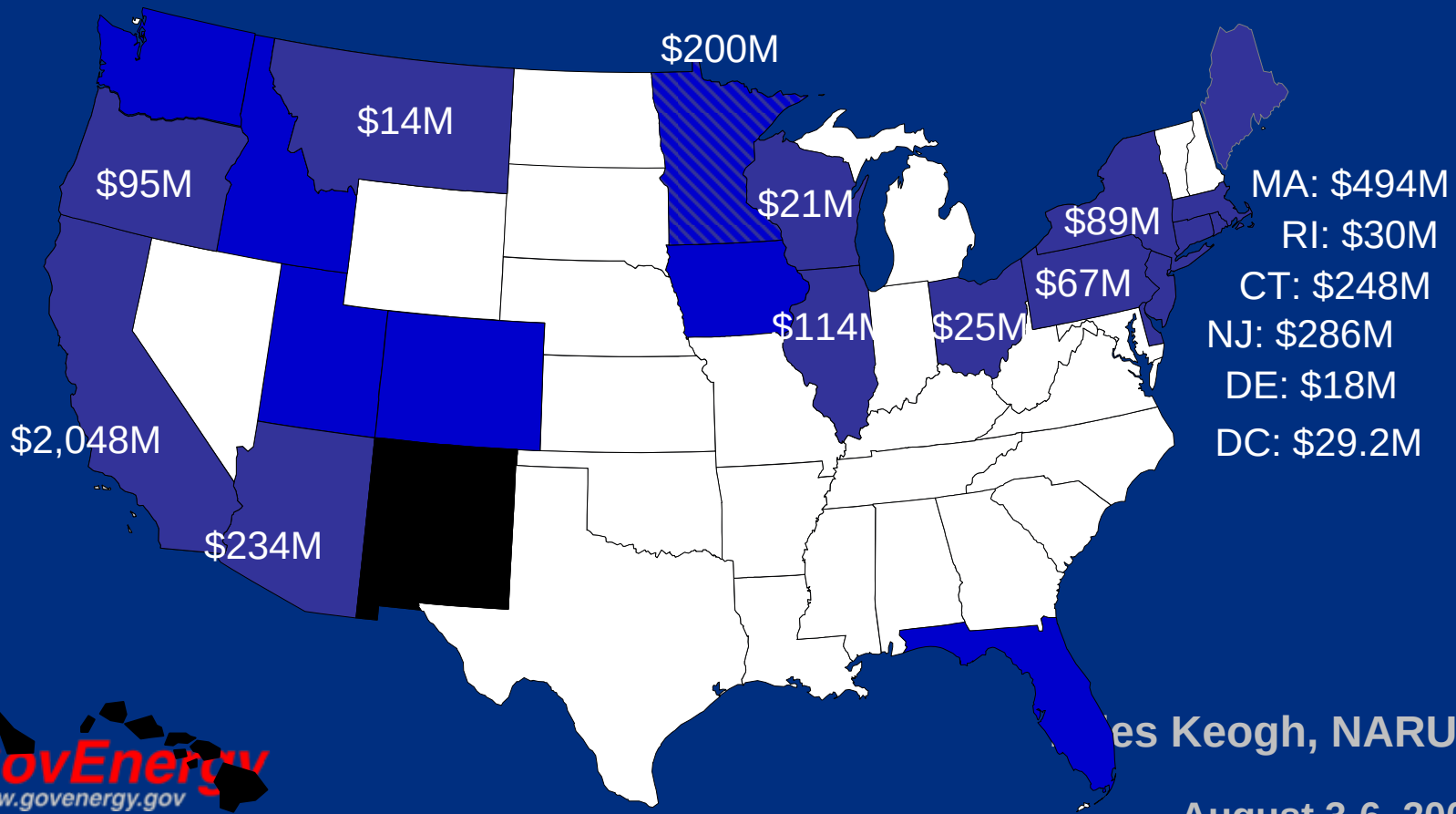


GovEnergy
www.govenergy.gov

System Benefit Fund Spending & DSM

Cumulative 1998-2017

States in blue have utility DSM

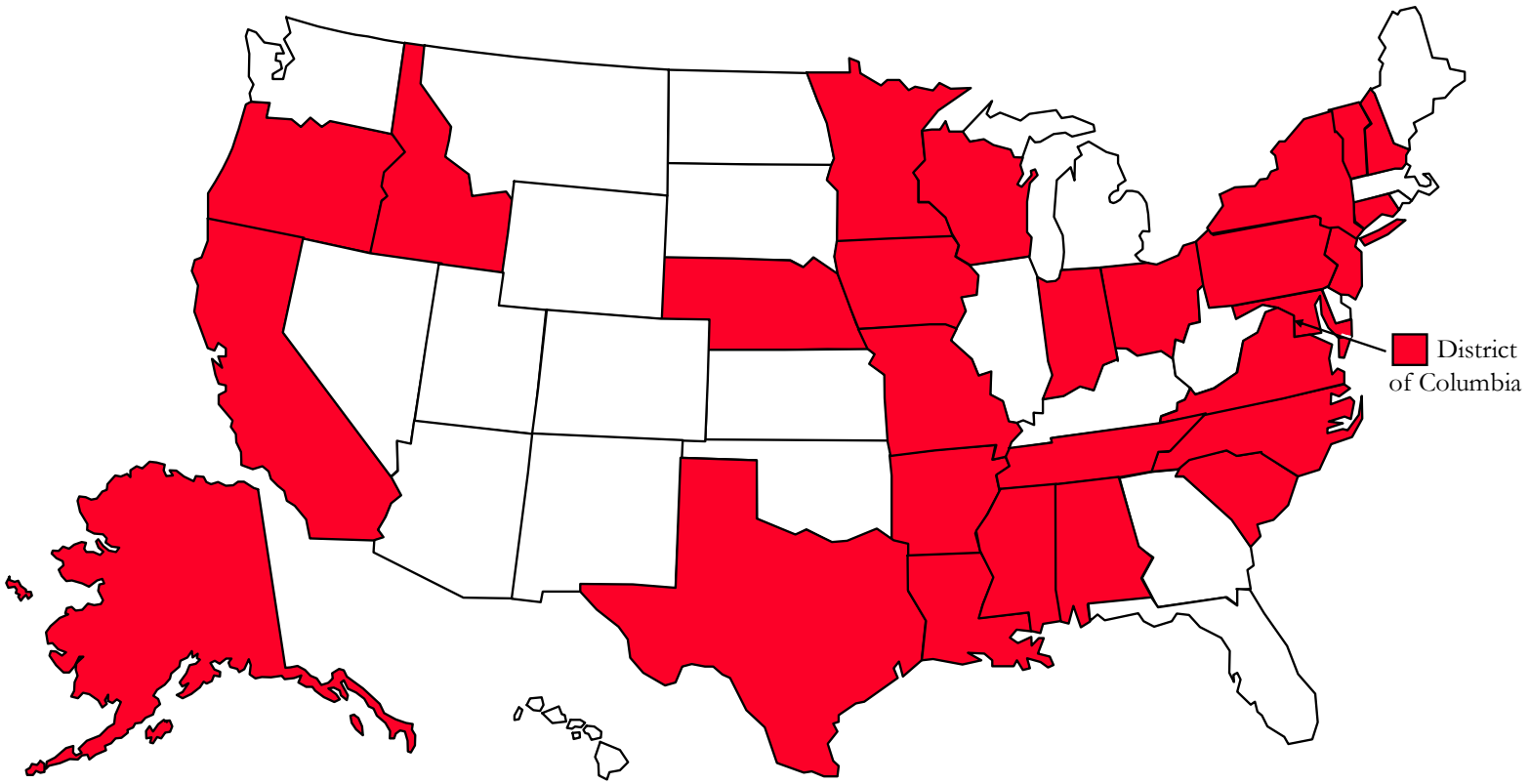


GovEnergy
www.govenergy.gov

es Keogh, NARUC

August 3-6, 2008

Energy Efficiency Loan Programs



Miles Keogh, NARUC

GovEnergy
www.govenergy.gov

August 3-6, 2008

Energy Efficiency Resource Standards

- EERS requires utilities to meet measurable amounts of EE savings.
  - Stand-alone policy target
    - % of total sales
    - % of projected load growth
  - Layered on top of a public benefit program
  - Blended with an RPS (renewable portfolio standard) requirement
  - Ten U.S. States: CA, CO, CT, HI, IL, NJ, NV, PA, TX, and VT
  - In Europe: UK, Italy, France, Belgium

Efficiency Utilities & State Providers

- Utilities are still the primary providers of energy efficiency programs—including public benefits programs. But “non-utility” segment is growing.
  - Efficiency Vermont—the statewide “energy efficiency” utility
  - Energy Trust of Oregon
  - Focus on Energy [Wisconsin]
  - New York Energy $mart
  - Efficiency Maine
  - Delaware (in the mail)

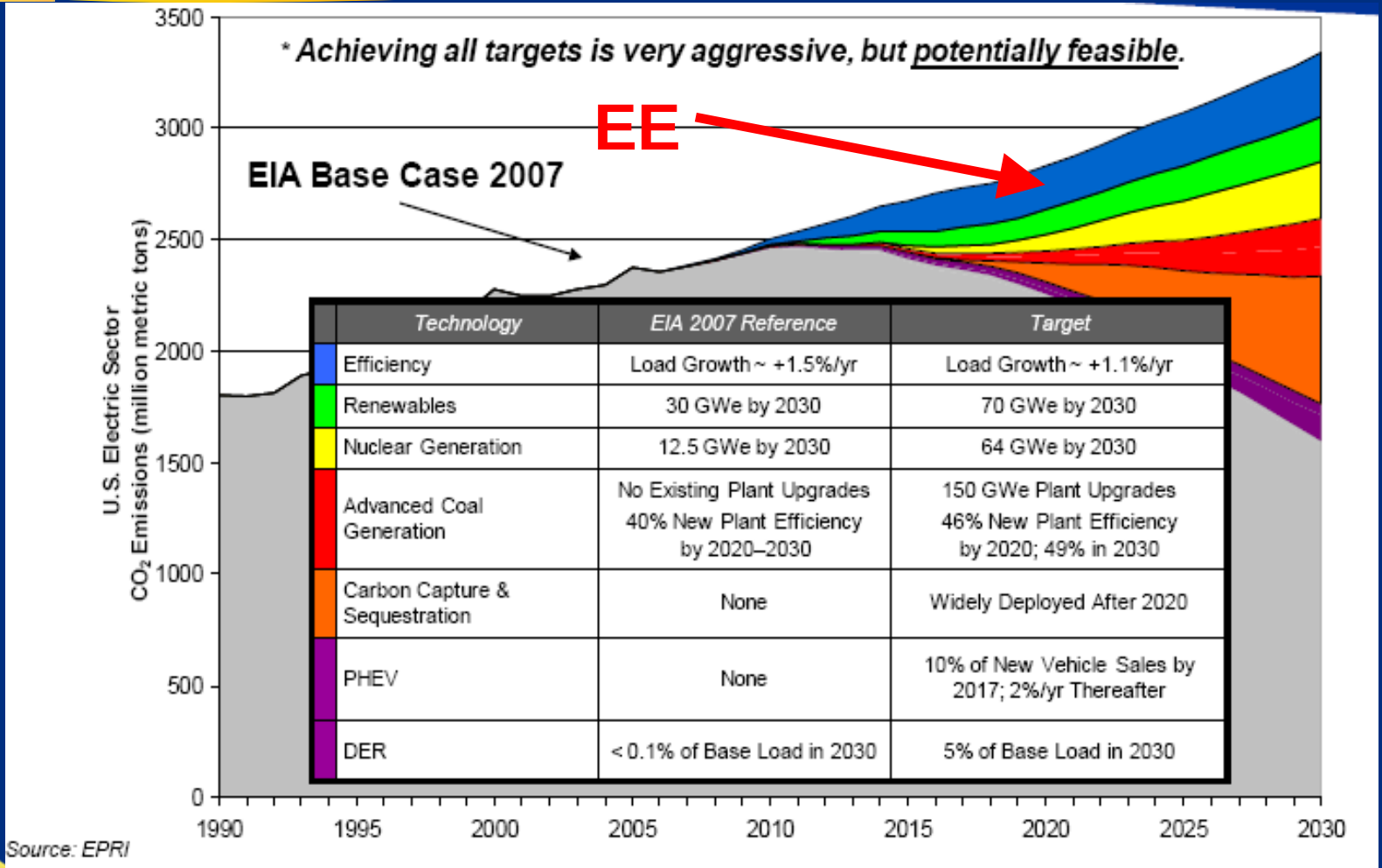
Other Measures for Financing Efficiency

- *State Performance Contracting* (Kansas)
- *Tax-Exempt Lease Purchase Agreements* (New Hampshire)
- *Tax Incentives* (New York, Oregon, Connecticut)
- *Capital Bonding* (Iowa)
- *Loans* (Texas)
- *Grants* (Michigan)
- *Pay-As-You-Save PAYS®* (New Hampshire)

We are getting there…

- California:
  - CPUC new EE savings targets will double savings over the next decade—to ~5000 MW peak demand and ~23,000 GWhby 2013
  - Budgets have been increased by $2.1 Billion over 3 years, increasing total national spending by more than 50%
- Illinois: Implementing an “Energy Efficiency Portfolio Standard”—will require utilities to meet 10% of annual load growth by 2008; 25% by 2017
- Texas: Utilities must meet 10% of new demand growth through energy efficiency; may rise to 50%
- Other states: PA, NJ, HI, NV, CT

Until climate changes everything



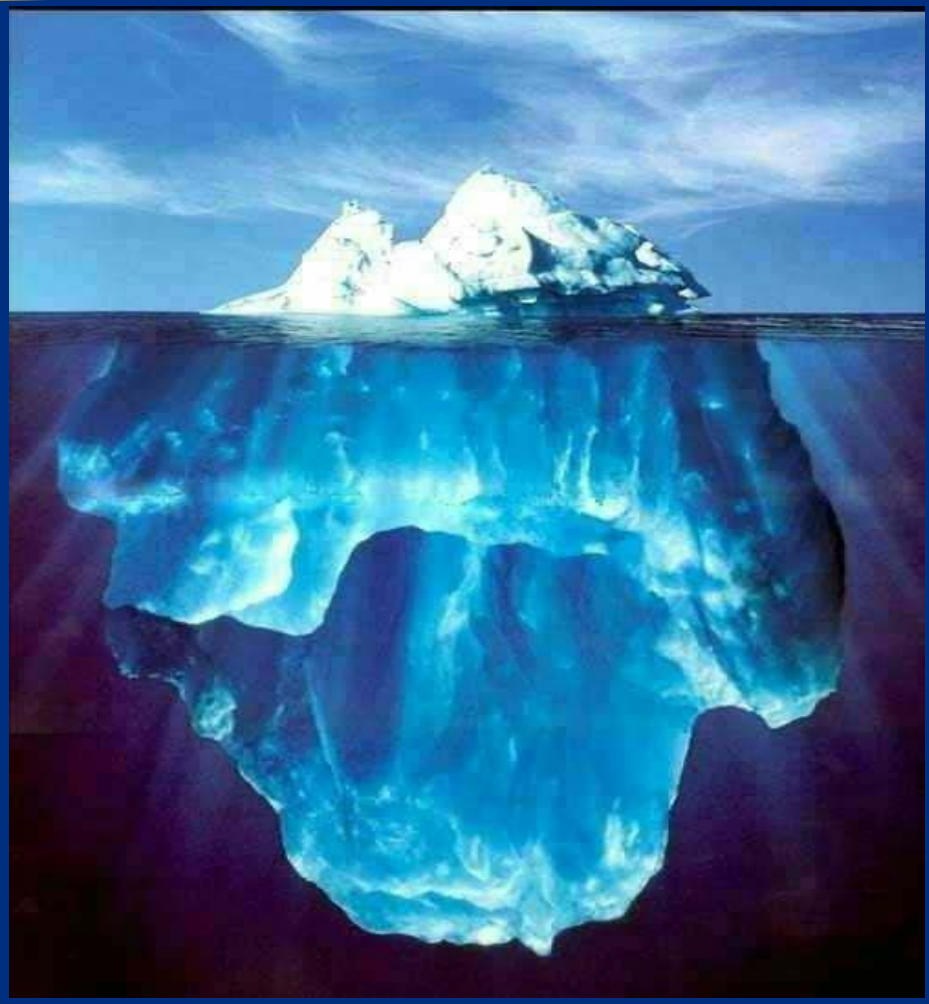
Technology	EIA 2007 Reference	Target
Efficiency	Load Growth ~ +1.5%/yr	Load Growth ~ +1.1%/yr
Renewables	30 GWe by 2030	70 GWe by 2030
Nuclear Generation	12.5 GWe by 2030	64 GWe by 2030
Advanced Coal Generation	No Existing Plant Upgrades 40% New Plant Efficiency by 2020–2030	150 GWe Plant Upgrades 46% New Plant Efficiency by 2020; 49% in 2030
Carbon Capture & Sequestration	None	Widely Deployed After 2020
PHEV	None	10% of New Vehicle Sales by 2017; 2%/yr Thereafter
DER	< 0.1% of Base Load in 2030	5% of Base Load in 2030

Source: EPRI

What this means for utilities

- Seriously addressing the challenges we face means that for the first time, utilities may have to sell less.
- No utility can survive selling less over the long-term with the current business model.
- Falling sales almost inevitably means shrinking margins or rising prices or both.
- We may need to reconsider the idea of selling energy service rather than electricity or gas.
- In any event, it means changes

Won’t selling less hurt the utility?



Miles Keogh, NARUC

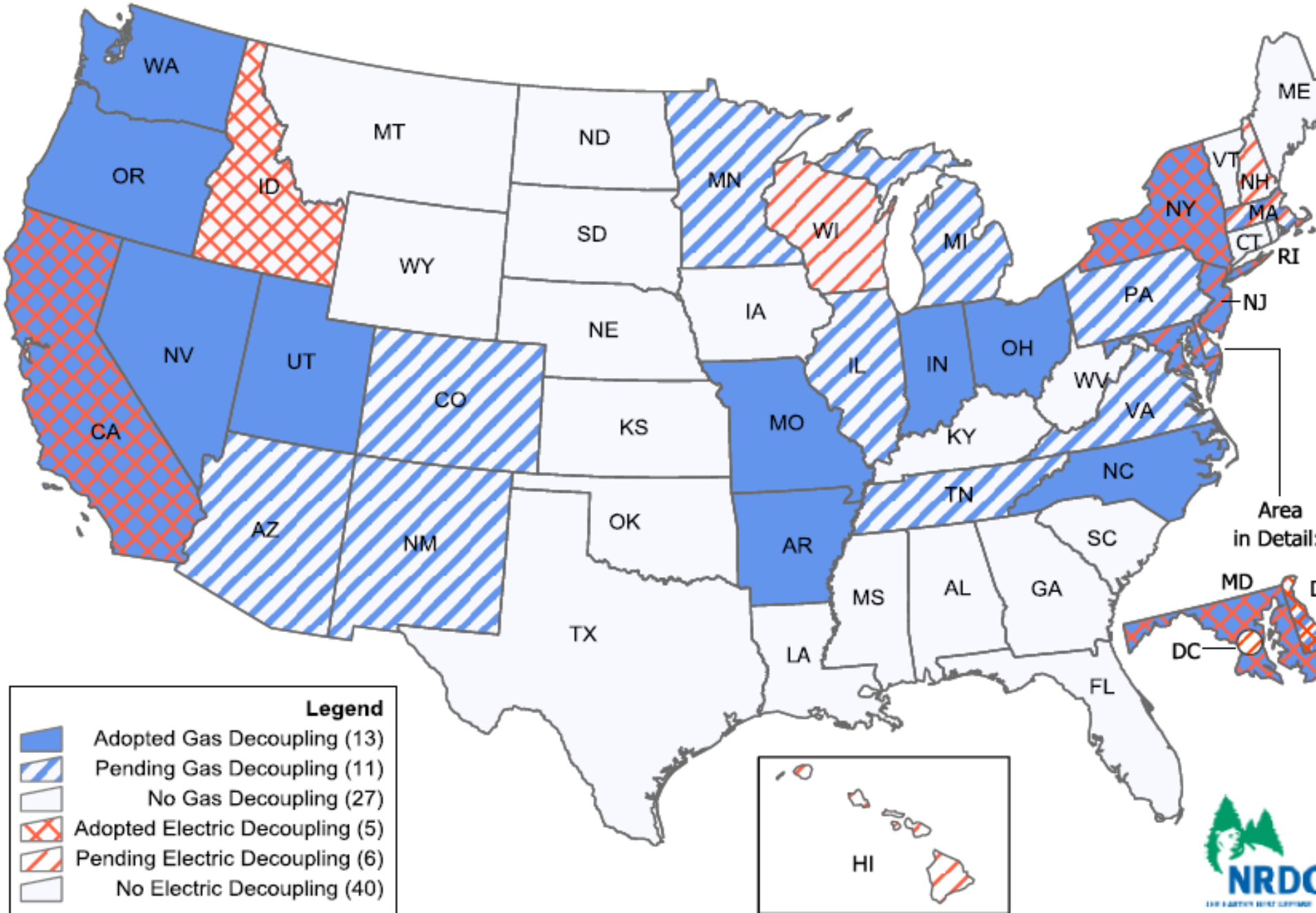
Yes: here's how

- Program costs – can they be recovered?
- Lost sales margins – can they be made up?
- The opportunity costs: why shouldn't we do something else (like build a power plant?)

How do we keep the wheels on this thing?

- Lost Margin Recovery
  - Estimate the sales reduction associated with EE
  - Calculate the associated margin under-recovery
  - Periodic true-ups
  - Can be complicated to determine what is actually lost
- Decoupling
  - Calculate allowed revenue or revenue per customer and allow utility to periodically true-up to this level based on changes in sales
  - Depending on the details, the adjustments can move prices higher or lower
  - May create subtle incentives for efficiency, but focus is on removing the incentive to promote sales.

Gas and Electric Decoupling in the US



It’s not as straightforward as it looks!

- LRAM can be complex; depends on EM&V (expensive, contentious!)
- Decoupling looks simpler, right?
  - Can quickly become complex to cover normalization
  - Can create some rate volatility. In reality the volatility associated with EE programs will be lower than with weather, fuel adjustment clauses, etc
  - Is removing disincentives enough?

- Rate design may be part of the solution
- Incentives may be a big part too

The carrot: incentives

- Just fixing program costs and lost margins doesn't make EE as attractive as generation.
- Basic options:
  - Enhanced ROE (Nevada, CA)
  - Performance Target Incentives
    - CT "performance management fees" for meeting certain savings and other performance targets
  - Shared Savings
    - CA utilities receive various shares of net benefits for achieving various levels of savings
    - MA shared savings to utilities for surpassing a range of performance targets
    - Penalties for under-performing relative to targets.

Incentives, Incentives

State	Type of Utility Performance Incentive Mechanism	Details
AZ	Shared Savings	Share of Net Economic Benefits up to 10 percent of total DSM spending.
CT	Performance Target Savings and other programs goals	Management fee of 1 to 8 percent of program costs (before tax) for meeting or exceeding predetermined targets. One percent incentive is given to meet at least 70 percent of the target, 5 percent for meeting the target, and 8 percent for 130 percent of the target.
GA	Shared Savings	15 percent of the net benefits of the Power Credit Single Family Home program.
HI	Shared Savings	Hawaiian Electric must meet four energy efficiency targets to be eligible for incentives calculated based on net system benefits up to 5 percent.
IN	Shared Savings/Rate of Return (utility-specific)	Southern Indiana Gas and Electric Company may earn up to 2 percent added ROE on its DSM investments if performance targets are met with one percent penalty otherwise.
KS	Rate of Return Incentives	2 percent additional ROE for energy efficiency investments possible.
MA	Performance Target Multi-Factor Performance Targets, Savings, Value, and Performance	5 percent of program costs are given to the distribution utilities if savings targets are met on a program-by-program basis.
MN	Shared Savings Energy Savings Goal	Specific share of net benefits based on cost-effectiveness test is given back to the utilities. At 150 percent of savings target, 30 percent of the conservation expenditure budget can be earned.
MT	Rate of Return Incentives	Two percent added ROE on capitalized demand response programs possible.
NV	Rate of Return Incentives	Five percent additional ROE for energy efficiency investments.
NH	Shared Savings Savings and Cost- Effectiveness Goals	Performance incentive of up to 8 to 12 percent of total program budgets for meeting cost-effectiveness and savings goals.
RI	Performance Targets Savings and Cost- Effectiveness Goals	Five performance-based metrics and savings targets by sector. Incentives from at least 60 percent of savings target up to 125 percent.
SC	N/A	Utility-specific incentives for DSM programs allowed.

How utilities provide energy efficiency may have to change

- To change how utilities do efficiency, we'll need to revisit:
  - Technology and the extent of its deployment
  - EM&V
  - Project and payback duration
  - Cost recovery and incentives
  - The culture of implementation – is this a resource or what?
- Consistent policy that keep the utilities financially whole can play a major role in changing utility resource acquisition culture.
  - Policies that leave a utility financially neutral (no reduction in earnings) will produce indifference to EE.
  - More utilities may move efficiency into a more (or most) prominent business line
  - We may need performance incentives to get there
  - Climate legislation may change the numbers significantly, but the details will be important

And for you?

- This means more programs
- More types of programs
- More providers of programs
- More support as a business line
- Some risks while things get worked out

Resources for States, Utilities and Stakeholders

- **National Action Plan for Energy Efficiency Guides and Papers**
  - Aligning Utility Incentives with Energy Efficiency Investment
  - National Action Plan Vision for 2025
- **Outreach Material and Tools**
  - Energy Efficiency Benefits Calculator
  - Communications Kit
  - Educational Briefings
- **Fact Sheets**
  - Building Codes and Energy Efficiency
  - Consumer Energy Efficiency
- **Sector Collaborative on Energy Efficiency**
  - Background Paper on Utility Data Availability
  - Energy Consumption Profiles for participating sectors

www.epa.gov/eeactionplan/

www.naruc.org/programs.cfm?c=Domestic

GovEnergy
www.govenergy.gov

Miles Keogh, NARUC

For More Information

- Miles Keogh
- NARUC
- 1101 Vermont Ave NW
  Suite 200, Washington DC 20005
- mkeogh@naruc.org

Don’t forget to fill out and drop off your session evaluations!