DOE Technical Assistance Program

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

The Parker Ranch installation in Hawaii

The Role of Public Utility Commissions in Energy Efficiency Program Delivery

August 31, 2011

Presenter: Richard Sedano
Principal and Director
Regulatory Assistance Project

What is TAP?

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

DOE's Technical Assistance Program (TAP) supports the Energy Efficiency and Conservation Block Grant Program (EECBG) and the State Energy Program (SEP) by providing state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs.

TAP web portal: http://www1.eere.energy.gov/wip/solutioncenter/

TAP offers:

- One-on-one assistance with EE and RE program/project design and implementation
- Extensive online resource library, including:
  - Webinars
  - Events calendar
  - TAP Blog
  - Best practices and project resources
- Facilitation of peer exchange

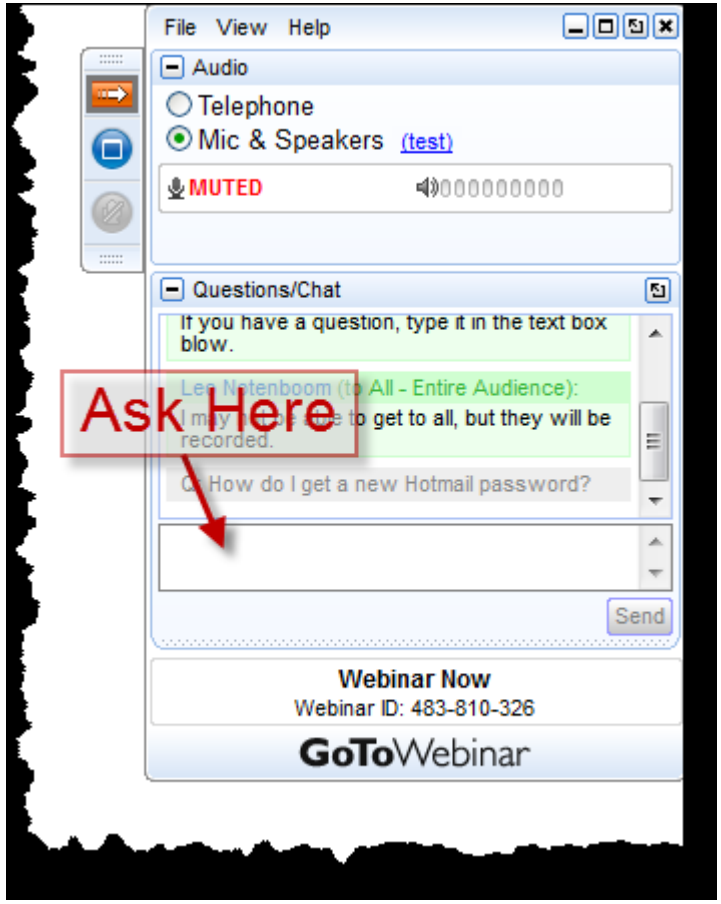
Today's Webcast

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Welcome! This webinar is hosted by Johanna Zetterberg, US DOE
- Part of a 7-part series created for 5 states (Kentucky, Mississippi, Texas, Puerto Rico, and Alaska) with a cooperative agreement and funding under the State Energy Program with DOE.
- Under the cooperative agreement, these states are developing policy and program frameworks to support investment in cost-effective energy efficiency for the long term.
- The activities states undertake through the cooperative agreement funding are expected to build on the foundation of the National Action Plan for Energy Efficiency.
- More information is at: http://www1.eere.energy.gov/wip/energy_efficiency_action.html

Questions and Answers

- All participants will be muted to reduce background noise.
- If you have a question, please submit it through the question box.



RAP | Energy solutions for a changing world

Energy Efficiency Does Not Just Happen: The Role of the Good Regulator in Assuring Good Performance

Stimulating Energy Efficiency Action in States Webinar

Presented by Richard Sedano

August 31, 2011

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Introducing RAP and Rich

- RAP is a non-profit organization providing technical and educational assistance to government officials on energy and environmental issues. RAP Principals all have extensive utility regulatory experience.
  - Richard Sedano directs RAP's US Program. He was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.

Questions We Will Address
Broad Scope, Depth? We'll See

- What is the role of the PUC in promoting and regulating EE programs? What authorities and tools do they have/use (incl cost effectiveness tests)? How do they interact with other decision makers such as legislatures and the utilities?
- What are the planning and/or policy mechanisms that are frequently used in support of a quantified energy savings target?
- What is an EE program and do they work? What is a typical profile of an EE program portfolio? What does the evolution from Quick Start to comprehensive look like? How are programs funded, designed, administered, and evaluated?
- How have stakeholder processes supported EE efforts in this context successfully in states?

Good Regulation Generally Promotes

- Good Utility Performance
- Fair Rates
- Just and Reasonable Costs
- Review of Performance, Improvement
- Transparency
- Consistency

Stability, Wisdom, Competency, Discipline

What do we want from utility regulators?

Good Regulation:
A Framework for Energy Efficiency

- Advance Review of Programs
- Performance Objectives and Targets
- Costs included in rate case, or in a rider with commission review, or a SBC
- Business incentives addressed
- Evaluation, Measurement, Verification of programs and process
- Planning, Collaboratives
- Politics minimized

Big Picture is Key

- A regulatory process and program administration system has many details
  - And many staff to mind them
- The commission is in a unique position to assure that the whole energy efficiency operation is working well
  - A sound framework makes it easier for regulators to maintain a good overview

Energy Efficiency Program Review

- Programs tell a story
  - What is the market, what is the market failure? How will the program address the failure? How does the program relate to other programs and markets? How will you know if you are succeeding or failing? How do you know if you've won? What likely changes (markets, technology) will occur in the program and when would they be implemented? Costs? Benefits?

Little Roseanne Rosannadanna, you ask a lotta questions!
It’s always something!

Program Portfolios

- Regulators often want all customers to have the **opportunity** to participate in a program – **equity** (does not mean equal)
  - Customer classes
  - Geography
- Clarity, Consistency and Consensus are important to maintain this focus over time

Typical Program Categories

- (Lost) Opportunity Programs
  - Some choice is going to happen, intervene
- Retrofit Programs
  - It works, but it could work better
- Market Transformation
  - Change first thought, available options
- Low Income Market is different, important
- Emerging markets and technology

Thumbs on the scale

- Sometimes, commissions are directed (or decide for themselves) that some bias in programs is appropriate – for example:
  - Low income markets
  - Industrial markets or Prominent in-state businesses
  - Public buildings
  - Avoiding location specific T&D investments
- **Cream-skimming** means getting least cost savings even if other cost-effective savings are available on site (budget limits)

Advance Review

- Programs must serve the public interest
  - They will work
  - They are cost-effective
  - They have a context
  - They will evolve
- Process minimized
  - Annual review is the obvious choice but for some programs may be too frequent

Cost-Effectiveness Tests

- Standard tests
- Each takes a distinct perspective
  - Economy-wide or Distributional
- All perspectives useful
- Question for commission:
  - Screening with objective standard?
  - Commission applies judgment?
- Problem: states are distorting and unbalancing the most used test, the TRC

Problem with the TRC

- Total Resource Cost Test is most used test
- Many states distort TRC, removing non-energy benefits, handicapping programs from an economy-wide perspective
  - Best to use pure TRC
  - If commission only wants to reflect system value, don't count participant costs either: use Utility Cost Test

Table 3-2. Summary of Benefits and Costs Included in Each Cost-Effectiveness Test

	Distributional Tests			Economy-wide	
Component	**PCT**	**PACT**	**RIM**	**TRC**	**SCT**
Energy- and capacity-related avoided costs		Benefit	Benefit	Benefit	Benefit
Additional resource savings				Benefit	Benefit
Non-monetized benefits					Benefit
Incremental equipment and installation costs	Cost			Cost	
Program overhead costs		Cost	Cost	Cost	Cost
Incentive payments	Benefit	Cost	Cost		
Bill savings	Benefit		Cost		

Source: Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects.

Note: Incentive payments include any equipment and installation costs paid by the program administrator.

From the National Action Plan for Energy Efficiency Guide to Cost Effectiveness

Rates vs. Bills

- Many are sensitive to rates
- Consumers pay bills
- Commissions who approve large energy efficiency budgets must believe that the short term rate increase of 1-4% is worth getting long-term, long-lasting cost savings and perhaps other non-energy benefits

Energy Efficiency Program Spending and Savings

- For highest spending states for electric EE:
  - Spending ranges beyond **4%** of utility revenues
  - Savings are approaching **2% of sales and 2% of peak**
- Realistic to consider **offsetting** or **exceeding load growth** with energy efficiency alone or in combination with customer-sited generation and demand response

Cost Recovery

- EE tends to be the most scrutinized utility work area
  - Why? I think because of financial incentives to customers, potential for abuse in handing out incentives, and equity concerns among neighbors
- EE also a high priority resource, meriting special attention

Cost Recovery

- Traditional approach: include the costs in a rate case just like any other utility cost
- System Benefit Charge: often imposed by legislature to assure funding levels
  - Is SBC a floor or a ceiling?
- Rider: A base cost level allowed to adjust periodically based on actual deviations
  - Fits EE since markets are always changing

Business Incentives

- Utility is a dominant influencer of customers
  - Customers make decisions on energy efficiency
- Will utility be enthusiastic, innovative promoters of energy efficiency service?
  - Or will compliance be the order of every day?
  - Is EE just a social program? Is the CFO upset?
- Regulators control business incentives

Business Incentives Regulators Control

- Utility can be motivated by fear of disallowance of misspent costs and penalties, as with other utility work
- Utility can be motivated by the way incremental sales or savings influence revenue
- Utility can be motivated by performance targets attached to money (+ and -)

Metrics: Be Careful, they **will** drive behavior
Outputs generally better than Inputs

- Savings (kWh, kW, diff by class)
- Participation
- Market Share
- Process
- Satisfaction
- Spending
- Cost per saved kWh

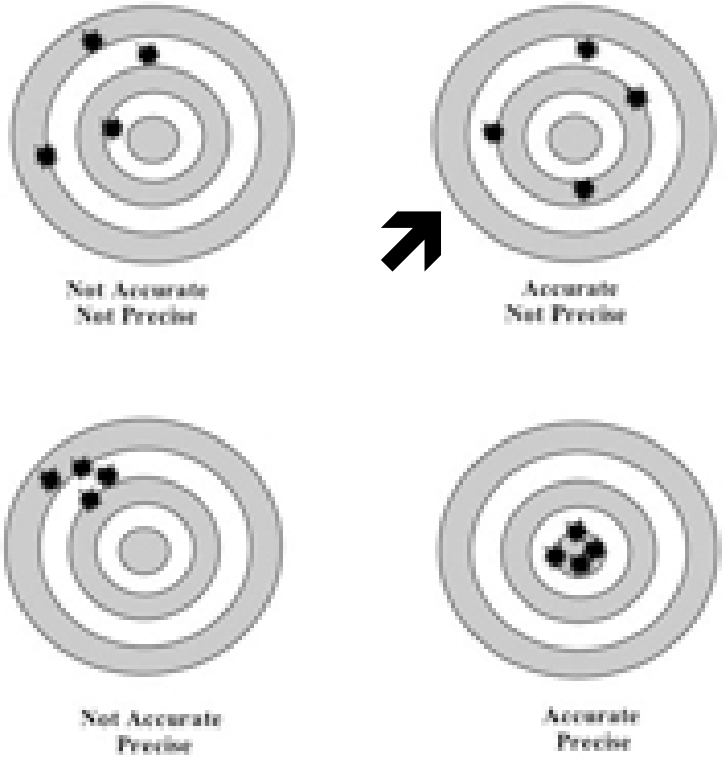
Where a state is in EE program evolution makes a difference: inputs may be more important **early**, while the **long run** favors attention to outputs

Evaluation Measurement Verification

- Commission needs to be able to assess value to consumers from investment in EE
  - Savings **attribution** to utility important
  - **Net**
- System planners also need to know how EE will influence future investment
  - Savings important regardless of attribution
  - **Gross**
  - Attribution costs money

Important Impact Evaluation Concerns

- Accuracy vs. Precision
- Bias
- System operator needs reasonable expectation of accuracy



Administration: Key Support or Bloated, Lazy Management?

- Sure, we want dollars to go into buildings, but smart systems (which could be expensive) can improve effectiveness
- Requires process assessment
- Cannot judge effectiveness by just asking for cost percentage
- Sound management and cost control always good, of course

Quick Start Programs

- Use tested programs in a similar markets elsewhere just to get started
  - Put away the “not invented here” impulse
  - Make good (not best) use of limited funds
- Over time, build a comprehensive portfolio of programs and services
  - As funds increase
  - As key actors settle and raise their abilities

AEP SWEPCO Arkansas Programs for 2007-2009

- Emergency Load Management SOP QSP
- Commercial and Industrial SOP QSP
- Residential and Small Commercial ENERGY STAR®Compact Fluorescent Lighting QSP
- Residential and Small Commercial ENERGY STAR® Appliance QSP
- Statewide Targeted Residential Energy Efficiency QSP For Severely Energy Inefficient Housing
- Statewide Energy Education “Energy Efficiency Arkansas” QSP

Billy Berny, presentation 2008

Reporting

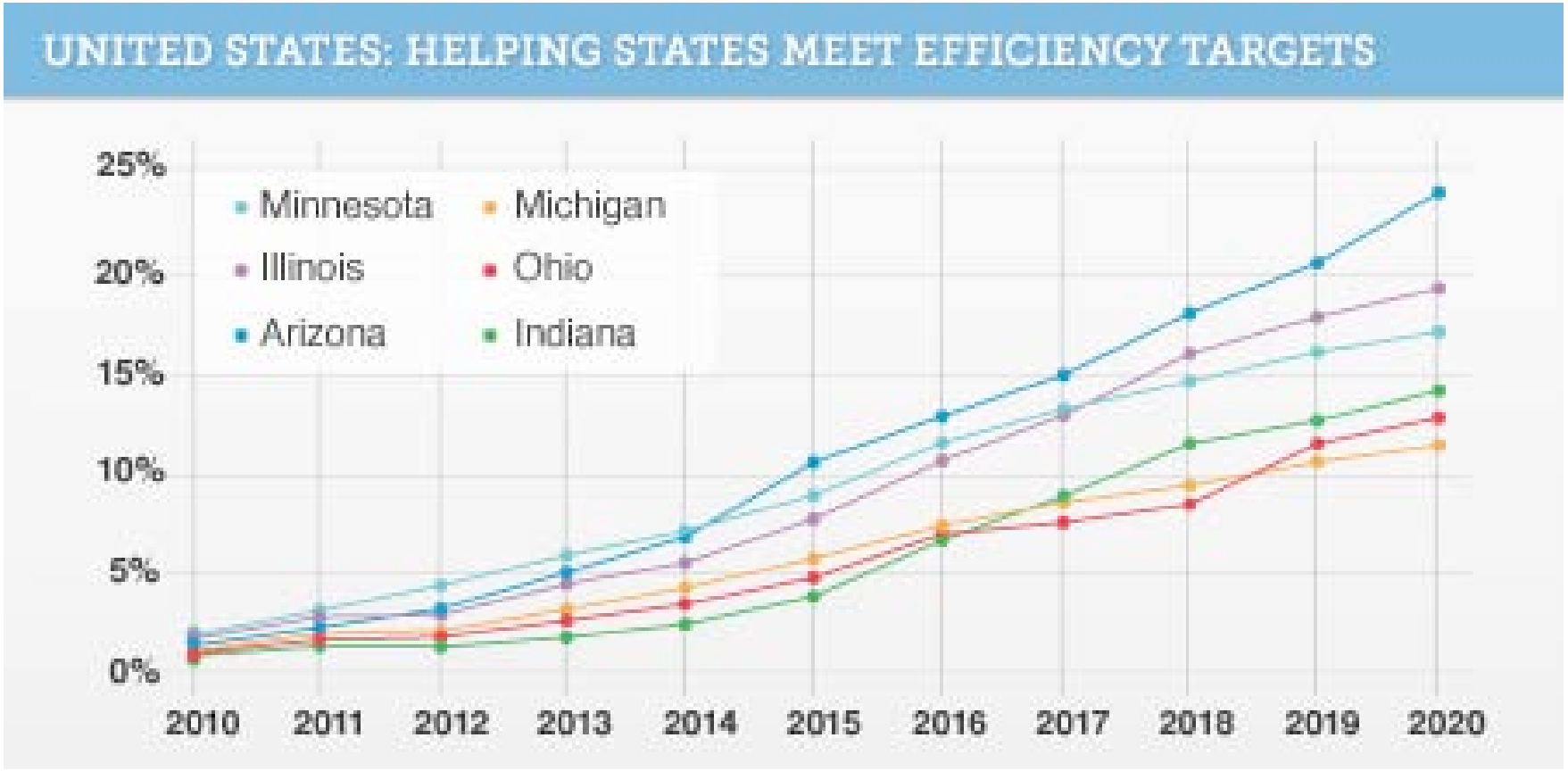
- Year end reports are useful to demonstrate success (quantitative and qualitative), program areas to change
  - Even if the legislature does not ask, produce a report

Planning and Collaboratives: Value and Transparency

- How much energy efficiency is valuable?
  - An integrated resource plan can give accuracy
    - Plus a good assessment of avoidable T&D, geo-targeted
    - But it is not an easy answer – EERS is precise, but …
  - Periodic potential (market) assessment
- Between program reviews, how do you know how they are doing?
  - Collaboratives or similar processes
  - EE very dynamic due to changing markets and technology – program nimbleness takes work but leads to better results

Cumulative Effects of Energy Efficiency

in 6 states with EERS



Communication between Regulator and Utility

- Program Review
- Cost Recovery
- EM&V
- Reporting
- Collaborative or Equivalent
- Communication on Energy Efficiency is generally greater than on any other topic

Commissions and Energy Efficiency

- Some state statutes clearly direct or permit the commission to order jurisdictional utilities to deploy energy efficiency or at least to consider it
- Other state statutes are silent on energy efficiency, but do focus on more general directives about "**least cost resource procurement**" and "**just and reasonable rates**", which can interpreted as supporting EE

Commissions and Energy Efficiency

- Some commissions issue rules governing their oversight of energy efficiency
  - More so with states recently engaging
- Some commissions use their general "least cost" authority and oversee via orders and precedent or with generic investigations

Commissions and Energy Efficiency

- Some commissions see the environment as integral to energy
  - Societal perspective
  - Risk management
    - Climate change
    - EPA Compliance
- Energy Efficiency is a low cost path toward environmental compliance

Politics – Helpful or Disruptive

- Coherent policies flowing from statutes and consistent support creates a stable business environment to deliver programs
  - Publicize success stories, growing businesses
  - Agitators for disruption denied
- Conflicting statutes and regulation designed for conflict can stifle quality and growth
  - Problems get more profound as aspirations for savings increase
- Raids: Bad; Threats: Bad; Guidance: Good

Examples

- Where the PUC followed its own administrative process in issuing an order mandating an EERS, independent of legislative action;
  - Arkansas, Vermont, Arizona, New York, Indiana
- Where the legislature passed a bill mandating an EERS, and then delegated the authority to the PUC to draft the guidelines for complying with and implementing the EERS; and
  - Many states, including PA, OH, IL, MN
- Where a PUC required utilities to meet a target or standard through the IRP process.
  - Missouri, Montana, Idaho, Utah

Good source ACEEE: Energy Efficiency Resource Standards (U112 June 2011)

Resources

- National Action Plan for Energy Efficiency
  - A library of reports and action guides
    - http://www.epa.gov/cleanenergy/energy-programs/suca/resources.html
- Regulatory Assistance Project
  - Presentations to states, notably May 2011 to Alabama PSC
  - Database of state policies and primary sources
    - http://www.raponline.org/featured-work/rap-offers-state-by-state-analysis-of-energy-efficiency

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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