Regulation toward More Energy Efficiency in Southeast US

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Richard Sedano
About the
Regulatory Assistance Project

- 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 was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.

- Funded by foundations and the US Department Of Energy. We have worked in nearly every state and many nations.

- Also provides educational assistance to stakeholders, utilities, advocates.
Today

- A sample from the regulatory workshops RAP delivers for PUCs on energy efficiency
- Focus is on:
  - How to move customers toward efficient choices and
  - How to address business incentives for utilities associated with delivering and supporting energy efficiency
Energy Efficiency Programs

- Increasing numbers of states have them
- Because energy efficiency doesn’t just happen
Market Barriers Facing Energy Efficiency

- Awareness
- Information, Knowledge, Confidence
  - Customers, stores, contractors, suppliers, etc.
- Opportunity to make a decision
- Upfront cash
- Long run cash, Financing
- Split Responsibility (the renter’s dilemma, new construction, supply chains)
What is an Energy Efficiency Program?

- A business plan to address barriers to investment in cost-effective energy efficiency (with ancillary benefits)
  - Create conditions for customer to say “YES!”
  - Best program does **just** what is required to motivate action by the key decision-maker
    - Who is the decision-maker?
    - What is the problem or barrier?
    - What is the answer?
Use of Financial Incentives for Customers

- All ratepayers paying program participants to do something helpful to all: EE a resource
  - Not a give-away or promotion

- Justified by Benefit/Cost analysis
  - Cheaper than supply over long run

- Manage incentives carefully
  - Link amount to desired effect, expect to ramp down incentive as higher standard becomes ordinary, watch for new tech needing support
Delivering Energy Efficiency Through Utility Rates

- Consumers pay because there are system benefits to all from energy efficiency
  - Utilities or 3rd party administrator oversee
  - Network of implementation contractors
- Supply chain of services and products
  - Trade allies
- Leadership guides, reinforces success
- Regulators oversee progress and direction
Leadership and Clarity

- Leadership is important with energy efficiency
  - It is a departure from traditional strategies to meet energy needs. Some professionals are skeptical of energy efficiency value despite record of success.
  - 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?
Rates vs. Bills: EE as a Strategic Resource

- Energy efficiency affects rates
  - Immediate increase to pay for programs
  - Long run effect on rates depends on magnitude of avoided cost
    - Significant avoided costs may lead to lower rates even with lower sales

- In the short run, energy efficiency lowers bills to participants, raises bills to non-participants
Energy efficiency reduces total system costs
- By definition, based on Benefit/Cost screening
- Allows more money in general economy to go to investment, saving, fun, etc.

Non-participants may pay more or less on their bills in the long run, depending on magnitude of avoided costs
- Avoidable generation can be pretty expensive!
Energy Efficiency as a Cost of Service and a Resource in Leading States

- **SPENDING**: Energy efficiency programs represent 2 - 4.5% of the cost of electricity in states with significant programs.

- **SAVINGS**: These are producing annual energy savings of 1 - 2% compared with sales.
  - Several states on track to get to these levels of savings based on statute or commission order.
Aside: Industrial Customers and Energy Efficiency

- Global competition
  - Motivates energy efficiency investments
  - Limited by internal capital requirements and internal rate of return rules (≤ 2 yr payback)

- Value to utility customers is a different perspective
  - More EE is justified by Benefit/Cost tests
  - Programs acquire this added increment
    - Opt out strands this resource, self direct can work
Ancillary Benefits of Energy Efficiency

- **Environment**
  - The cleanest kWh is the one not used

- **Quality, Comfort**
  - Efficient products and processes also tend to be of higher quality and better engineering; living and working spaces work better

- **Economic Development**
  - State can use availability of EE as a quality enhancement in attracting businesses, jobs
How Much Is Possible?

- A new plan by the Northwest Power and Conservation Council finds that achievable, cost-effective energy efficiency could meet 85 percent of forecasted load growth in the four-state region over 20-year study period
  - Pacific NW has high proportion of electricity vs. gas, high per-capita electricity use, low cooling loads, long history of efficiency

- Technology delivering new ways to save
PUC challenges

- Statutory Direction/Foundation
- Trade off of value and cost
  - To get benefits, include costs in rates
- EE is different from other things utilities do
  - About customers
  - Markets and technologies changing, misfires
- Rules? Or just do energy efficiency in dockets?
- Regional programs (utility-utility, electric-gas)
- Leadership, get incentives right, equity, strategic resource, promote innovation not just compliance
Major EE Trends

- Whole building programs vs. widget replacement: “Deep” savings
- Smart grid, smart policies
- Carbon regulation, Air regulation and foundational energy policies
  - Most of these policies make sense anyway
- Improved labels, codes and standards raise the floor for new buildings and products
High Regulation Purpose: Addressing Incentives

Utility Business Incentives regarding efficiency
- Cost recovery
- Reversing the throughput incentive
- Providing performance incentives

Customer Incentives regarding efficiency
- Prices (how much can I save?)
- Programs (how easy is it to save?)
Cost Recovery

➢ Rate cases include EE costs
  – Forward looking (better for EE)
  – Historic

➢ Tariff rider for energy efficiency
  – Addresses inherent ups and downs in EE programs and their costs
  – Widely used, credited with calming effect
  – May not be authorized in your state
The Throughput Incentive

- Existing rates are designed to produce revenues to cover fixed costs from last rate case
- Incremental sales add or subtract to revenue available to cover fixed costs
- Utility motivations toward energy efficiency are influenced by this mathematical effect
  - Especially if EE targets are significant
# How Changes in Sales Affect Earnings

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<thead>
<tr>
<th>% Change in Sales</th>
<th>Revenue Change</th>
<th>Impact on Earnings</th>
<th>Actual ROE</th>
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<tbody>
<tr>
<td></td>
<td>Pre-tax</td>
<td>After-tax</td>
<td>Net Earnings</td>
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<tr>
<td>5.00%</td>
<td>$9,047,538</td>
<td>$5,880,900</td>
<td>$15,780,900</td>
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The “throughput” incentive is at odds with public policy to supply electric power services at the lowest total cost
  - Inhibits a company from supporting investment in and use of least-cost energy efficiency resources
  - Encourages the company to promote incremental sales, even when they are more costly than measures to avoid them

Ratemaking policy should align utilities’ profit motives with public policy goals: acquiring all cost-effective resources, whether supply or demand

The utilities’ throughput incentive promotes inefficient outcomes, even where:
  - there is programmatic energy efficiency and
  - third-party administration of energy efficiency programs.
Solving the Throughput Incentive

➢ Utility can become indifferent to sales volume

➢ Decoupling
  – Revenue requirement becomes more important than rate
  – Rates reconciled periodically

➢ Lost revenue recovery (ex post)
  – Regulatory problems in the 90s

➢ Change rates to recover more in customer chrg
  – Unintended consequences
Financial Incentives

- Comparability with other uses of utility money
- Performance driven
  - Indicators should support the public interest
- Make EE important to utility management
  - But not too much either (pass front page test)
1989 NARUC Resolution

➢ “Reform regulation so that successful implementation of a utility’s least-cost plan is its most profitable course of action”
Resources

- Report to Minnesota PSC on Decoupling
- Presentation on Utility Incentives (contact me)
- Smart Grid, Smart Policies IssuesLetter
- National Action Plan for Energy Efficiency
  – Now State Energy Efficiency Action Network

RAP is tasked to help PUCs, so commissioners and staff can contact me if assistance would be timely.
Thanks for your attention

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- http://www.raponline.org
- RAP Mission: RAP is committed to fostering regulatory policies for the electric industry that encourage economic efficiency, protect environmental quality, assure system reliability, and allocate system benefits fairly to all customers.