

Understanding the Ratemaking Implications of Linking Profits and Sales

Presentation to NARUC Workshop:
Aligning Regulatory Incentives with Demand-Side Resources

August 2, 2006

David Moskovitz

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



*177 Water St.
Gardiner, Maine USA 04345
Tel: 207.582.1135
Fax: 207.582.1176*

Website:

<http://www.raonline.org>



Energy Efficiency Incentives

- More than 20 years of experience demonstrates energy efficiency is a very large and low cost resource.
- Energy efficiency is clean, cheap, and fast.
- It reduces
 - market prices for gas and power,
 - market power,
 - transmission congestion,
 - Air and water pollution
 - and it improves reliability
- Energy efficiency is good for all except utilities



Incentive Regulation

- All regulation is incentive regulation
- Do you really know how utilities make money given regulatory and accounting practices in your state?



Bottom Line (for most States)

- Every kWh sold adds to profits
- Every kWh lost to efficiency or customer side distributed resources cuts profits
- AND the numbers are overwhelming
- **If this continues there is little chance of any significant utility investment in these resources**



Good News

- It wasn't always this way
- Basic economic principle: prices should equal cost. If so, increased revenue from increased sales are offset by increased costs leaving profits unaffected
- Utility costs have been shifted to consumers or deferred for later recovery
 - Fuel and purchased power
 - AFDC
- Existing perverse incentives were not created intentionally and they can be fixed



How the System Works

- **Regulation and utility profits do not work as you might expect!**
- Rate cases focus on costs to reach revenue requirement
- Once case ends prices are all that matter
 - Actual revenue, costs, profits are not bound to rate case findings



Rate Theory

➤ Historic test year

- Historic cost/ historic sales= price
- Price captures the relationship between revenue and costs until the next rate case.
- Higher sales next year will be offset by higher costs leaving profit constant
- Is relationship changes it is time for a new rate case
- Theory was good but is no longer true



Rate Theory

➤ Future test year

- Projected cost/ projected sales= price
- Price captures the relationship between revenue and costs
- Theory was good but rate case litigants know it's not true
- Want proof? Why is sales forecast a large issue?



Profits

- Once rate case ends prices are all that matter
- Profits = revenue – costs
 - Revenue = price * sales
- Costs = utility costs



There are Costs and Then There are Utility Costs

- Over the years many costs that used to be part of this equation have been shifted to consumers through adjustment clauses and deferred accounting
- Traditional utility, no adjustment mechanisms
 - Profit = Price – marginal power cost
 - High marginal cost mean some utilities have some incentive to encourage energy efficiency
 - California in 2001 was instructive
- Most utilities, with adjustment mechanisms
 - Profit = price – average power cost
 - High marginal cost do not matter – utility can buy power for 10 cents, sell it for 7 cents and make money!



How the System Works

- Profits = revenue – utility costs
- Revenue linked to sales
- Utility costs are unrelated to volume *in the short run* (that is, from rate case to rate case)
- Thus: if efficiency causes volume to decrease, utility profits drop



The Numbers: Typical Vertically Integrated Utility

➤ 1% sales loss yields 5%
cut in profits!



Better Pricing Is Not The Solution

- Better prices to consumers, revealing the full marginal cost, is a good idea and should be done
- BUT better prices including TOU prices, inverted block rates, critical on-peak prices, and others do not solve the utility's financial problem and, even worse, create a new set of perverse incentives
- Example: TOU prices move most utility profits to on-peak sales



Restructuring Does Not Help

- Same company divested of generation
 - 1% sales loss 11% loss of profits
- Some states' treatment of stranded costs (e.g., Maine's) actually double the disincentive for energy efficiency



Three Steps to Solve the Problem

- Decide what incentives you want utility to face
 - 1989 NARUC Resolution makes sense: *adopt reforms that ensure that the successful implementation of a utility's least-cost plan is its most profitable course of action.*
- Get the structure right
- Get the numbers right



Right Structure

- Address the throughput incentive
 - Decoupling profits from sales is the best option
 - Lost revenue mechanisms can help energy efficiency but leave throughput incentive intact
- Address incentives
 - 2 cent supply or energy efficiency should be more profitable than 3 cent supply or energy efficiency



Right Numbers

- Fixing the structure will be seen as an opportunity to address other unrelated issues
- Right numbers means designing a mechanism that yields no predictable windfall gain or loss



Conclusion

- Getting the incentives right is the most important decision a regulator can make
 - Same is true for consumer advocates and utilities
- Energy efficiency is the cheapest cleanest option
- It should be the utilities first option: now you know why it's the last



NARUC 1989 Resolution

Resolution in Support of Incentives for Electric Utility Least-Cost Planning

WHEREAS, National and International economic and environmental conditions, long-term energy trends, regulatory policy, and technological innovations have intensified global interest in the environmentally benign sources and uses of energy; and

WHEREAS, The business strategy of many electric utilities has extended to advance efficiency of electricity end-use and to manage electric demand; and

WHEREAS, Long-range planning has demonstrated that utility acquisition of end-use efficiency, renewable resources, and cogeneration are often more responsible economically and environmentally than traditional generation expansion; and

WHEREAS, Improvements in end-use efficiency generally reduce incremental energy sales; and

WHEREAS, The ratemaking formulas used by most state commissions cause reductions in utility earnings and otherwise may discourage utilities from helping their customers to improve end-use efficiency; and

WHEREAS, Reduced earnings to utilities from relying more upon demand-side resources is a serious impediment to the implementation of least-cost planning and to the achievement of a more energy-efficient society; and

WHEREAS, Improvements in the energy efficiency of our society would result in lower utility bills, reduced carbon dioxide emissions, reduced acid rain, reduced oil imports leading to improved energy security and a lower trade deficit, and lower business costs leading to improved international competitiveness; and

WHEREAS, Impediments to least-cost strategies frustrate efforts to provide low-cost energy services for consumers and to protect the environment; and

WHEREAS, Ratemaking practices should align utilities pursuit of profits with least-cost planning; and

WHEREAS, Ratemaking practices exist which align utility practices with least-cost planning; now, therefore, be it

RESOLVED, That the Executive Committee of the National Association of Regulatory Utility Commissioners (NARUC) assembled in its 1989 Summer Committee Meeting in San Francisco, urges its member state commissions to:

- 1) consider the loss of earnings potential connected with the use of demand-side resources; and
- 2) adopt appropriate ratemaking mechanisms to encourage utilities to help their customers improve end-use efficiency cost-effectively; and
- 3) otherwise ensure that the successful implementation of a utility's least-cost plan is its most profitable course of action.

Sponsored by the Committee on Energy Conservation, Adopted July 27, 1989



Learn More

- **Profits & Progress Through Least-Cost Planning**
 - http://www.raonline.org/showpdf.asp?PDF_URL='Pubs/General/P%26plcp%2Epdf'
- **Profits and Progress Through Distributed Resources**
 - http://www.raonline.org/showpdf.asp?PDF_URL=Pubs/General/ProfitsandProgressdr.pdf
- **Performance-Based Regulation For Distribution Utilities**
 - http://www.raonline.org/showpdf.asp?PDF_URL=%22Pubs/General/DiscoPBR.pdf%22
- **Performance-Based Regulation in a Restructured Electricity Industry**
 - <http://www.synapse-energy.com/Downloads/pbr-naruc.doc>