Regulatory Barriers and Opportunities

Eliminating Disincentives, Creating the Right Incentives

Iowa Utilities Board

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The Regulatory Assistance Project

RAP is a non-profit organization, formed in 1992, that provides workshops and education assistance to state government officials on electric utility regulation. RAP is funded by the Energy Foundation and the US DOE.

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.***

Who We Are

- **Cheryl Harrington** is an attorney and cofounder of RAP. She was Commissioner of the Maine Public Utility Commission for nine years during which she served as Vice Chair of NARUC's Energy Conservation Committee. She has taught utility resource planning in just about every state except Nebraska.
- **Richard Sedano** Richard Sedano is a Director of The Regulatory Assistance Project. Prior to joining RAP, he served as Commissioner of the Vermont Department of Public Service (VDPS) for nine years, and in staff positions for seven more. The VDPS represents utility consumers in all regulatory matters, and is the state's energy office and consumer advocate. Mr. Sedano served as chair of the National Association of State Energy Officials from 1998-2000. was commissioner of the Vermont Department of Public Service, 1991-2001, member of the Secretary of Energy's Task Force on Reliability, 1998-99.

EE is a Long Term Economic Resource

- EE has the same energy and capacity values as generation facilities, transmission lines, pipelines and distribution facilities.
- EE is considerably cheaper than most supply-side alternatives, lowering total revenue requirements.
- Iowa has long recognized the economic value of EE.

Regulatory Barriers

- Regulatory practice does not really support EE investment.
- Unless it is modified, utilities will carefully contain their EE investments.
- It usually takes broad stakeholder consensus to modify current regulatory practice.

The Effect of Energy Efficiency on Utility Profits

- With a fully-reconciled fuel clause, every lost sale means lost profits.
- Even without a fully-reconciled fuel clause, if retail rates are above short-run market prices, every lost sale means lost profits.
- The numbers can be very large – a 1% reduction in sales can mean a 5% reduction in profits for gas and electric companies.

The Relationship Between Lost Sales and Lost Profits is not Linear

- Greater savings reduction cause a *geometric* decrease in revenues and profits.
- A 2% decrease in sales could cause a 20% decrease in earnings.
- You must run the numbers for your utilities to understand the effects of lost sales on earnings.

Incentive Regulation

- *All regulation is incentive regulation*
- You just have to figure out what the incentives are…

What Rate Cases Do

- **Revenue Requirement =** Expenses + (Capital x Cost of Capital)
- **Rates =** Revenue Requirement / Forecasted Sales
- ***Theoretically, rates embody the relationship established between sales and cost in the rate case. This creates the "reasonable opportunity" for the utility to recover costs and make a profit.***

Cost and Sales Reality

- Costs do not vary in lock step with sales.
- Fuel or commodity costs vary with sales – but those costs are recovered in separate fuel cost adjustments, independent of the rate case.
- Typically a base fuel/commodity cost component in base rates and the balance is recovered through fuel adjustment.

Fixed Costs Typically Vary Little Between Rate Cases

- Fixed Costs do not escalate with sales growth in the short run – between rate cases. (More likely to be align with customer growth.)
- For every incremental therm sold, more fixed costs are recovered. All sales contribute to profits.
- For every therm forecasted (relied upon in setting rates) that is not sold, fixed costs are under recovered.
- Most of the time, between rate cases, there is a powerful incentive to increase sales.

Bottom Line

- Every therm/kwh sold adds to profits
- Every therm/kwh lost to efficiency or customer side distributed resources cuts profits
- AND The numbers are overwhelming
- **If this continues there is little chance of significant (increased) utility investment in EE or customer-side DR**

Rates x Sales = Total Revenues

- Two Ways a Utility can Increase Profits:
  - **Increase Sales**
  - **Reduce Costs**

- Guess which is more fun?

A Word About Rate Design

- Generally, rates should be aligned with margin costs of consumption.
- Inclining blocks and TOU rates good practice when marginal costs of consumption are rising.
- But… TOU rate designs make the lost sales/lost revenue concerns worse as more revenue recovered in peak periods.
- TOU works much better for a decoupled utility.

Lost Margin Recovery Mechanisms

- Measures energy savings and makes up lost revenue.
- Does not remove sales incentive.
- Best financial outcome is when EE fails early.
- Measurement intense – lots of room for squabbles.
- Does not address rate design issues
- Experience in Hawaii particularly frustrating – 13 years and counting.

Rate of Return Incentives

- Bonus for return on equity for efficiency investment.
- Does not reduce sales incentive
- May encourage maximum spending on measures with minimum savings.
- Washington (1980 – 1990): Utility invested heavily in heat pump retrofits in mobile home parks – to prevent migration to natural gas.
- *Can be done along with decoupling.*

Fixed / Variable Rate Design

- For example: $30/month + variable energy cost
- Eliminates sales incentive
- Weakens consumer incentives for self-initiated efficiency.
- May attract uneconomic load – space heating and water heating.
- Shifts revenue collection from large users to small.
- Fixed costs vary, too.

Real-Time Pricing

- Often advocated by market theorists.
- Many customers do not/cannot pay attention to the meter.
- Disliked by consumers due to volatility.
- Uneconomic metering for small consumers.
- Only addresses generation component of pricing – distribution capacity costs can be significant at the margin.

Moving Efficiency Outside the Utility

- Efficiency Vermont/ Efficiency Maine/Energy Trust of Oregon
- Utility collects and remits revenue
- Funds have been raided for general gov. budgets
- Efficiency company has no exposure to lost utility margins.
- Willingness of utilities to cooperate requires legislation and ongoing political support.
- May not optimize geographic focus of investment without utility involvement.

Revenue Normalization Mechanisms

- Establish an approved revenue requirement, and adjust rates as needed over time to sustain it.
- Breaks the sales incentive.
- Reduces volatility of utility earnings
- Allows management to focus on reducing costs – which will benefit consumers after next general rate proceeding.

Examples of Revenue Normalization Mechanisms

- CA - All gas & electric IOUs
- MD, OR -- gas only (MDPSC, Calvin Timmerman; contact in ORPUC, Lisa Schwartz)
- NC- Piedmont Gas
- DC- Washington Gas (Rick Morgan, DCPSC)
- NJ - gas filings pending for NJ Natural Gas (NJBPU, Mike Winka)
- OH - gas filings pending for Vectren (Ohio Consumers' Counsel, Janine Migden-Ostrander)
- WA – gas filings pending for PSE and Cascade

Elements of a Revenue Normalization Mechanism

- Determine “revenue per customer” in general rate proceeding.
  - By class
  - System Overall
  - May exclude resource costs if there is a fuel / purchased power mechanism.
- Measure actual revenue variations (due to weather, conservation, economic changes and other causes.)
- Apply a true-up mechanism over future months or future year.

Benefits of a Revenue Normalization Plan

- Stable earnings for the utility
- Eliminates concerns about conservation, fuel switching, or other sales reductions.
- Rating agencies like the stable earnings; utility can have a lower equity capitalization ratio for the same bond rating.
- Customers on budget billing have fewer adjustments / delinquencies.

Design Criteria

- Must do
  - Get the structure right to produce the right incentives
  - Get the numbers right to be fair to utility and consumers
- Other considerations
  - Weather risk
  - Economic risk

Getting the Numbers Right

- Design decoupling formula to approximate revenue growth (and perhaps pattern) under traditional regulation
- Why?
  - To avoid windfall gains and losses
  - To minimize annual rate changes
- If risks shift consider effect on cost of capital

Decoupling Formula

- Basic formula for RPC approach
  - Allowed rev = allowed rev/cust * # of cust
  - More specifically,

  Allowed rev = K * allowed rev/cust * # of cust
- K is designed to allow revenue growth to approximate revenue growth w/o decoupling

Growth Rates – MN Examples

- Xcel historical growth, 1998-2004 - Residential
  - Cust growth 1.3%
  - Sales growth 2.3%
  - Revenue growth 2.54% (inc. fuel?)
- 2004-2006 per rate case filing
  - Cust growth 1.4%
  - Sales growth 2.6%
  - Revenue Growth ? Assume 2.8%?

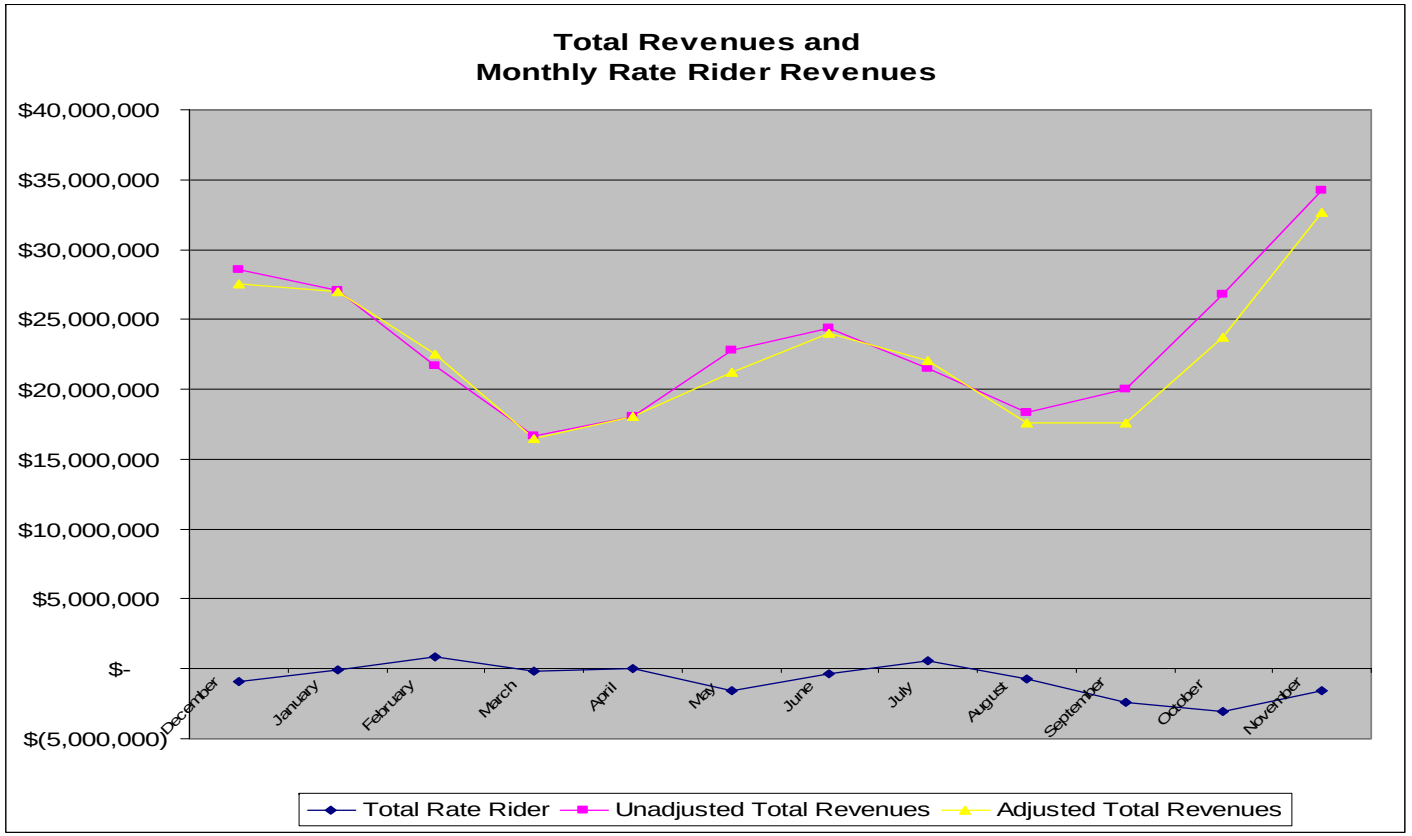
Revenue Growth

- NSP existing revenue growth is about 2.8% per year.
- Use/cust is growing
- Setting revenue growth at customer growth would
  - Give NSP less $
  - Lead to annual reconciliations giving money back to consumers
  - May or may not be reasonable on a cost basis

RAP/MADRI Model

- Spreadsheet based analysis that computes “k” factor and shows month to month operation
- Monthly revenue shapes

MADRI Example



Weather Risk

- Typical decoupling plans shift weather risk to customers
- Not unique to decoupling plans, rate design changes can have similar results (most of the proposed residential increase is in rate elements that are not affected by weather)
- When deciding risk allocation consider who can best bear risk, the cost implications of changing risk, the added administration of weather normalizing

Resource Needs

- Commission attention needed
- At the time of rate cases
  - Getting the formula numbers right takes care but the data needs are already part of typical rate cases
  - Define key terms: how customers are counted
- Monthly or annual reconciliation
  - Much more routine than FAC.

Five Point Plan for Achieving Consensus on Decoupling

- Significant Energy Efficiency Investment Commitment
- Good Rate Design
- Capital Structure Adjustment
- A Collar on Maximum Possible Adjustment
- Periodic Rate Cases

Who Are the Stakeholders?

- Utilities
  - Internal incentives/competition within the company for capital and status (promotion and pay).
- PUC's
- Consumer Advocates
- Customer Groups
  - Different classes have different interests
- Environmental NGO's
- Providers of EE products and services

Learn More

- **http://raponline.org/Pubs/General/EfficiencyPolicyToolkit3-1-06.pdf**
- **Profits & Progress Through Least-cost Planning**
  - http://www.raponline.org/showpdf.asp?PDF_URL='Pubs/General/P%26plcp%2Epdf'
- **Profits and Progress Through Distributed Resources**
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