

Decoupling: Recent Developments on the Idea Everyone Is Still Talking About

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Introduction

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, US DOE and US EPA.

Richard Sedano was Commissioner of the Vermont Department of Public Service, 1991-2001, and presently serves on the Montpelier Planning Commission. He is the facilitator for the Mid-Atlantic Distributed Resources Initiative.



Topics

- Recent Work by RAP in Decoupling
 - ❖ Mid-Atlantic Distributed Resources Initiative
 - ◆ <http://www.energetics.com/madri/>
 - ❖ National Action Plan on Energy Efficiency
 - ◆ <http://www.epa.gov/cleanenergy/eeactionplan.htm>
- Green Mountain Power



Motivation for Decoupling

- Utilities lose revenues and profits when they or their customers invest in cost-effective energy efficiency
 - ❖ It's the issue nearly everyone talks about, but there has been little action
- Gas companies now are seeking “revenue stabilization” to address declining usage
- Can public and private interests better align?



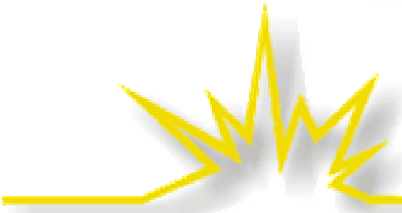
Traditional Regulation: The Throughput Problem

- Traditional ROR regulation sets *prices*, not *revenues*
 - ❖ The revenue requirement is simply an estimate of the total cost to provide service
- Without adjustment, consumption-based rates (\$/kWh and \$/kW) link profits to sales
 - ❖ The more kilowatt-hours a utility sells, the more money it makes
 - ❖ This is because, in most hours, the price of electricity is greater than the cost to produce it
 - ◆ *Utility makes money even when the additional usage is wasteful, and loses it even when the reduced sales are efficient*
- The profit incentive to increase sales is extremely powerful



Assumptions for A Sample Utility

Assumptions							
Operating Expenses	\$160,000,000						
Rate Base	\$200,000,000						
Tax Rate	35.00%						
Cost of Capital	% of Total	Cost Rate	Wtd. Cost		Dollar Cost Amt.		
			Pre-tax	After-Tax	Pre-Tax	After-Tax	
Debt	55.00%	8.00%	4.40%	2.86%	\$8,800,000	\$5,720,000	
Equity	<u>45.00%</u>	11.00%	4.95%	<u>7.62%</u>	\$9,900,000	\$15,230,769	
Total	100.00%			10.48%			
Revenue Requirement							
Operating Expenses	\$160,000,000						
Debt	\$5,720,000						
Equity	\$15,230,769						
Total	\$180,950,769						
Allowed Return on Equity	\$9,900,000						



Manager A: Purple Results
Manager B: Green Results
Which Manager Gets Promoted?

% Change in Sales	Revenue Change		Impact on Earnings		
	Pre-tax	After-tax	Net Earnings	% Change	Actual ROE
5.00%	\$9,047,538	\$5,880,900	\$15,780,900	59.40%	17.53%
4.00%	\$7,238,031	\$4,704,720	\$14,604,720	47.52%	16.23%
3.00%	\$5,428,523	\$3,528,540	\$13,428,540	35.64%	14.92%
2.00%	\$3,619,015	\$2,352,360	\$12,252,360	23.76%	13.61%
1.00%	\$1,809,508	\$1,176,180	\$11,076,180	11.88%	12.31%
0.00%	\$0	\$0	\$9,900,000	0.00%	11.00%
-1.00%	-\$1,809,508	-\$1,176,180	\$8,723,820	-11.88%	9.69%
-2.00%	-\$3,619,015	-\$2,352,360	\$7,547,640	-23.76%	8.39%
-3.00%	-\$5,428,523	-\$3,528,540	\$6,371,460	-35.64%	7.08%
-4.00%	-\$7,238,031	-\$4,704,720	\$5,195,280	-47.52%	5.77%
-5.00%	-\$9,047,538	-\$5,880,900	\$4,019,100	-59.40%	4.47%



Approaches Considered

- Rate Design
 - ❖ High fixed charges
 - ❖ Removes customer incentive for efficiency
 - ❖ Ignores real-life connection between consumption and costs
- Lost Revenue Adjustment
 - ❖ Tracks revenues lost from specific energy efficiency or distributed resource programs
 - ❖ High maintenance, potential for controversy & litigation
- Revenue Per Customer Decoupling
 - ❖ Easy to implement – data comes from customer billing records
 - ❖ Maintains customer incentives while removing utility disincentives



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



Some Key Decoupling Issues

- True ups
 - ❖ Utility gets revenues that rate case calculated
 - ❖ Adjusted by drivers of costs (not usage)
 - ❖ Frequency: more means more smaller changes
- Class Specific RPC or revenue forecast
- Can consumers benefit from more stable utility financials?



MADRI Model Rate Rider:

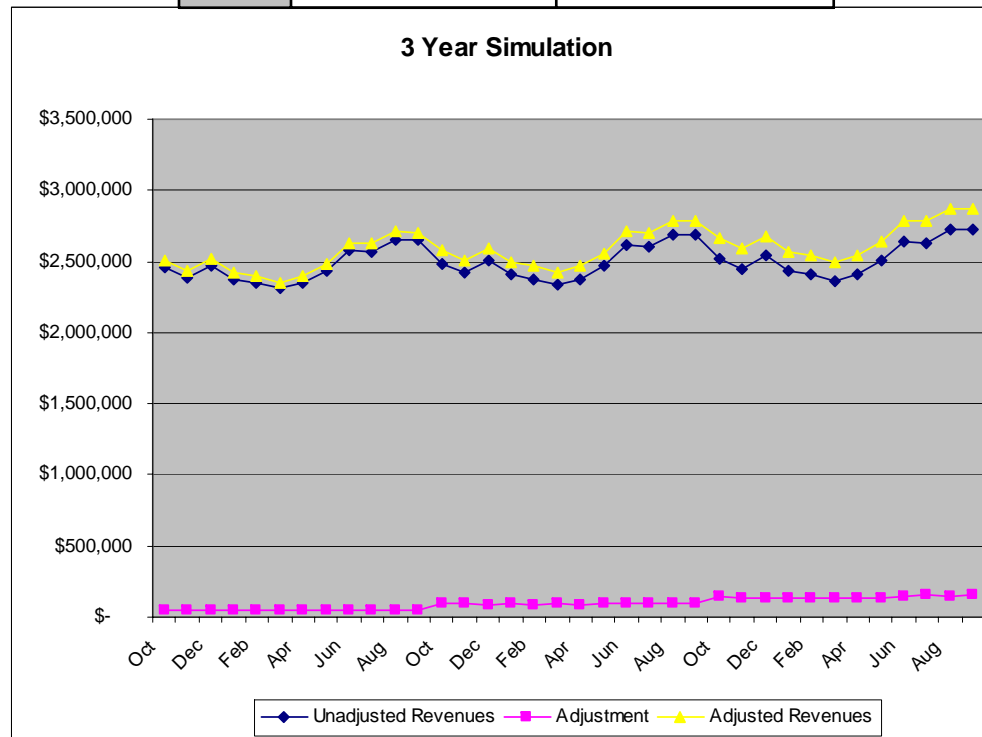
- Revenues = Number of Customers X Target Revenue per Customer
 - ❖ Changes in average customer consumption no longer changes revenues or profits
- Monthly Adjustments
 - ❖ Keeps adjustments smaller
 - ❖ Maintains seasonality of revenue stream
- Adjustments (through “K Factor”) can be made to reflect growth objectives/conditions

PPL Simulation:

Large General Service (LP-4):

2%/Yr. EE-DR & 3%/Yr. Customer Growth

Sum of Monthly Adjustments		
Year	Dollars	% Revenues
1	\$ 574,142	1.94%
2	\$ 1,136,800	3.80%
3	\$ 1,688,206	5.56%





A Note About Prices

- Customers do NOT all pay the same revenues!
- Customer Prices are still set on a volumetric basis
 - ❖ Class Average is driver for allowed revenue
 - ❖ Individual consumer bills still vary with consumption
- Consumers garner benefits of reduced consumption, while utility is held harmless from improved efficiency



A Note about Incentives

- Important to remove utility disincentives to distributed resource deployment
 - ❖ Efficient regulation (cost recovery)
- States may also want to add incentives
 - ❖ Performance based
- Absent decoupling, utilities may not object to limited EE for customer service and political reasons, but are not likely to search for DER opportunities



National Action Plan for Energy Efficiency

- Cooperative effort by US DOE and US EPA
- A Leadership Group of ~50 drawn from utilities, PUCs and other state offices, customers, NGOs
 - ❖ Chaired by Diane Munns (Iowa) and James Rogers (Duke)
- Key recommendation: align utility incentives with EE delivery; consider addressing throughput incentive

Examples of Decoupling				
	Type of Utility	Key Features	Related Rate Design Shifts?	Political/Administrative Factors
California	Investor-owned Electric and Gas	Balancing account to forecasted revenue Annual true-up	No	Driven by commission, outcome of crisis. Consensus oriented.
	http://www.epa.gov/cleanrgy/pdf/keystone/PrusnekPresentation.pdf http://www.cpuc.ca.gov/Published/Final_decision/15019.htm			
Maryland	Investor-owned Gas only	Revenue per customer cap Monthly true-up	No	Revenue Stability primary motive of utility Frequent true ups
	http://www.energetics.com/madri/pdfs/timmerman_101105.pdf http://www.bge.com/vcmfiles/BGE/Files/Rates%20and%20Tariffs/Gas%20Service%20Tariff/Brdr_3.doc			
Oregon	Investor-owned Gas only at present, investor-owned electric in the past	Revenue per customers cap Annual true-up	No	Revenue Stability primary motive of utility Renewed in 2005
	http://www.raponline.org/Pubs/General/OregonPaper.pdf http://www.advisorinsight.com/pub/indexes/600_mi/nwn_ir.htm http://www.nwnatural.com/CMS300/uploadedFiles/24190ai.pdf http://apps.puc.state.or.us/orders/2002ords/02-633.pdf			
New Jersey	Investor owned gas (proposed)	Revenue per customer	No	Explicit intent of utility to promote energy efficiency and stabilize fixed cost recovery
	http://www2.njresources.com/news/trans/newsrpt.asp?Year=2005 (see 12/05/05)			
Vermont	Investor owned electric (proposed)	Forecast revenue cap and costs, balancing account and true ups	No	Legislative change promoted utility proposal Small Utility Looking for Stability
	http://www.greenmountainpower.biz/atyourservice/2006ratefiling.shtml			

From
National
Energy
Efficiency
Action Plan,
forthcoming



Green Mountain Power: A Trial Plan

- After electric utilities in California and gas companies in many places, this is the only other electric utility company with a pending proposal.
 - ❖ Power supply adjustment
 - ❖ Base rate adjustment
 - ❖ Earnings sharing
 - ❖ Bounded rate adjustments



GMP's Plan

- Based on forecasted revenues (not RPC)
- Dead bands reduce “chatter” and give company incentive to be on “efficient” side
 - ❖ Efficiencies can be captured in future rate case
- Service Quality Plan
- Rating agencies: this plan will reduce ROE needed to maintain current rating by 90 bp



Learn More

- <http://raponline.org/Pubs/General/EfficiencyPolicyToolkit3-1-06.pdf>
- **Profits & Progress Through Least-cost Planning**
 - ❖ <http://www.raponline.org/Pubs/General/Pandplcp.pdf>
- **Profits and Progress Through Distributed Resources**
 - ❖ http://www.raponline.org/showpdf.asp?PDF_URL=Pubs/General/ProfitsandProgressdr.pdf
- **Performance-based Regulation For Distribution Utilities**
 - ❖ http://www.raponline.org/showpdf.asp?PDF_URL=%22Pubs/General/DiscoPBR.pdf%22
- **Performance-Based Regulation in a Restructured Electricity Industry**
 - ❖ <http://www.synapse-energy.com/Downloads/SynapseReport.1997-11.NARUC.PBR-in-a-Restructured-Electricity-Industry..97-U02.pdf>



Thanks for your attention

- ❖ rapsedano@aol.com
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- ❖ 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.*