



Cost Recovery for Demand-Side Programs through Revenue Decoupling: An Economist's Perspective

**Law Seminars International
Current Utility Rate Case Issues and Strategies**

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Outline

- Revenue decoupling at a glance
- Misalignment of utilities' incentives
- Trends
- Revenue Decoupling mechanisms
- Conclusions



Revenue Decoupling at a glance

What is Revenue Decoupling?

- Economists talk about “Revenue Caps” and “Revenue Yield” as regulatory regimes that could be implemented to regulate tariffs during a tariff period
 - A Revenue Cap sets a revenue target, and tariffs are designed to reach that target. If the target is not reached, there is an adjustment mechanism to recoup/return the difference
 - A Revenue Yield sets an average target revenue. Each period, the difference between the target and the achieved average revenue is calculate, and an adjustment mechanism similar to that of a revenue cap is used to account for the difference
- The layman’s term in the U.S. for these regimes is “Revenue Decoupling.” Revenue Decoupling is commonly known as a mechanism to divorce sales and revenues so that certain specific programs or objectives that might reduce sales can be achieved without undermining the ability of the utility to collect revenues



Misalignment of utilities' incentives

Incentives not aligned

- The main problem in implementing demand-side and other programs is that these programs reduce sales and rate base, and this hurts the utilities' bottom line
- For example, a DSM program aimed at achieving a 1% reduction in consumption the following year will also reduce sales and revenues for the utility by 1%
- On top of that, there are implementation costs that are included in the rate base. These implementation costs increase tariffs and provide additional signals to reduce consumption (through price elasticity)

Seen as a solution to align incentives

- The UK implemented the first revenue yield: Changes after the “Power Station Effect” (a huge increase of sales of natural gas to power plants) decreased the average revenue, and the utility got, instead, a tariff increase as a result
- Revenue Decoupling has been used in the U.S. for a long time and for other purposes, such as to reduce sales and to promote customer investments (distributed generation)
 - This is economically inefficient (potentially increasing tariffs so a few could generate on their own)
- In some places, Revenue Decoupling was abandoned (not because of the decoupling mechanism) and then adopted again

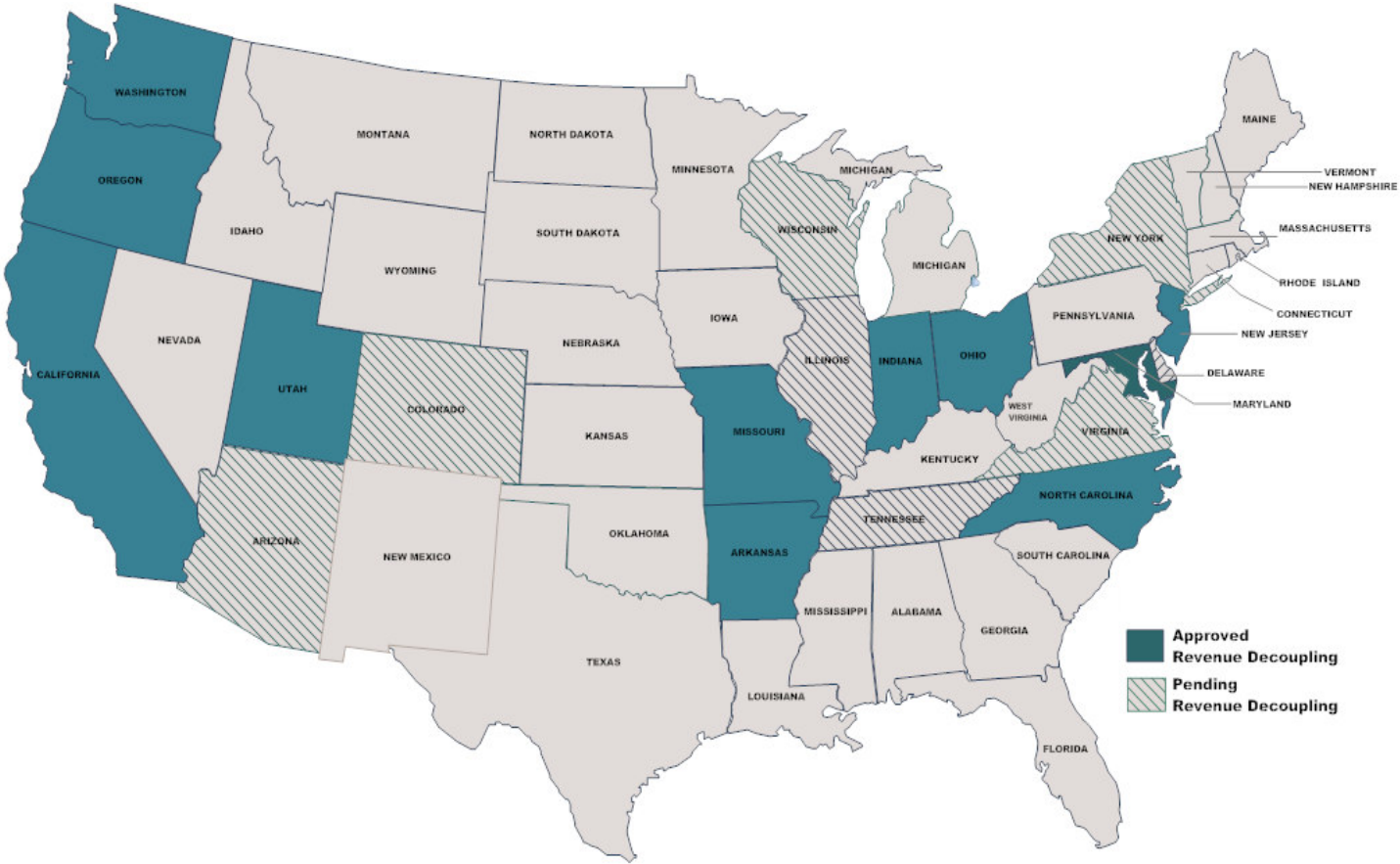


Trends

Trends

- More DSM programs are being implemented
- Internationally, revenue caps have been widely adopted, but they have suffered from bad design at the outset
- Natural gas utilities have been advocating Revenue Decoupling to achieve revenue stabilization. Many PUCs have been open to adopting these mechanisms
- Lately, more electric utilities are adopting DSM programs

Spreading of Revenue Decoupling



Source: American Gas Association website



Revenue Decoupling mechanisms

Alternative mechanisms

- Revenue Decoupling can be implemented in two ways
 - Partial Revenue Decoupling, which covers some types of customers or collects for certain types of programs or events
 - Total Revenue Decoupling
- The Revenue Decoupling mechanism could be adopted based on total revenues or on a measure of average revenue
- It is difficult to find two mechanisms that are identical. The characteristics of each utility shape the mechanism

Mechanics for incorporating a Revenue Decoupling mechanism

- Design should occur during a rate case procedure, and implementation should occur during the regulatory period
- The rate case is no different than any other (a cost-of-service study or other studies are still undertaken)
- The differences occur when defining the tariff. Depending on objectives and targets, a certain design might be adopted
- A specific formula adjustment and true-up mechanism, or specific changes to a revenue-sharing mechanism, might be adopted as part of the program
 - A true-up mechanism compares an achieved amount against a target and accumulates the difference into an account that is added to the rate base for tariff-making purposes
 - If the target revenues are \$100, and only \$90 is collected, the difference (\$10) is included in the rate base, and tariffs are increased to collect the \$10 in the next period

Adopting a Revenue Decoupling mechanism

- It is important to first define the objective that is sought and to ask why Revenue Decoupling is needed
 - Would the mechanism be applied overall or would it stop after reaching a specific target?
- Then the mechanism is defined over either some or all customer classes
- Once adopted how often would the true-up mechanism be applied?
 - Quarterly, biannually, annually?
- Should the targets in the mechanism be adjusted with a formula? Which components?
 - If a revenue target of \$100 is to be adjusted by wholesale inflation that increased by 5%, the new target would be \$105 [\$100 times (1+5%)]

How it works

- If a total revenue target is set
 - If the company sells less, the difference is calculated, and tariffs increase in the next period to collect the shortfall
 - If the company sells more, the additional revenues are returned to customers in the next period
 - The targets are reset (or not)
- If taking into account growth within the period
 - Average use per customer times the number of new customers is added to the previous target
 - Actual revenues are compared with the target adjusted revenues and the same mechanism as before is adopted
- If using averages
 - Use average revenues per customer for comparison

What is achieved

- Divorcing revenues from sales achieves revenue stabilization and provides incentives for utilities to implement certain programs
- Tariffs are still divorced from costs, as in other PBR mechanisms, and utilities have the incentive to reduce costs and capture savings
- Savings are passed on to customers either partially (through a revenue-sharing mechanism) or totally (in the next tariff review when resetting rates)

Pitfalls?

- Revenue Decoupling is not perfect
- When implemented, it fully eliminates all demand risk from utilities, and this might be both good and bad
- It adds volatility to rates, as opposed to applying other performance based regulation (PBR) mechanisms
 - PBRs are regulatory regimes designed to motivate economic efficiency by trying to reach a competitive outcome through incentives for the utilities to reach certain performance goals
- The implementation of certain programs, in combination with a recession, might either increase tariffs too much or create liabilities owed to the utility
- If a DSM program is implemented without performing a cost-benefit analysis, and costs outweigh the benefits, the implementation of a Revenue Decoupling mechanism could be a double whammy for customers (a not cost-effective program and potentially higher rates)



Conclusions

Cost recovery for DSM programs

- DSM programs do not fit within the utilities' objectives in the traditional regulatory regime
- Creativity in regulatory design has been the solution for implementation
- Environmental goals and utilities' bottom lines have been married with alternative regulatory mechanisms such as Revenue Caps/Revenue Decoupling
- Revenue Decoupling is a general concept that encompasses many, different regimes
- If the DSM program is not cost effective, a Revenue Decoupling mechanism might not benefit customers



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Leonardo R. Giacchino, Ph.D., is a Partner with Bates White, LLC. Over the course of more than 20 years, Dr. Giacchino has worked in more than 25 countries on over 100 projects addressing economic and regulatory issues for U.S. and international businesses, investors, governments, and organizations. Dr. Giacchino has provided testimony in numerous forums, including U.S. federal district court, FERC, the London Courts of International Arbitration (LCIA), the International Centre for Settlement of Investment Disputes (ICSID), and the International Arbitral Center of the Austrian Federal Economic Chamber. Dr. Giacchino is the coauthor of *Fundamentals of Energy Regulation*, published in 2007 by Public Utilities Reports, Inc.

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