Revenue Decoupling

A Policy Brief of the Electricity Consumers Resource Council

Every complex problem has a simple solution too good to be true, and it usually is.

Attributed to H.L. Mencken

Introduction

For over two decades advocates of ratepayer-funded energy efficiency and load reduction programs have recommended that the 'link' between utility's revenues and its sales be 'decoupled' to eliminate a utility's disincentive to sponsor such programs. The argument is that the combination of the utility management's fiduciary duty to shareholders and the use of rates based on a revenue requirement, that includes sales in its calculation, discourages utilities from being competent vendors of energy efficiency and load reduction services.

Revenue decoupling (RD) is generally defined as a ratemaking mechanism designed to eliminate or reduce the dependence of a utility's revenues on sales. It is adopted with the intent of removing the disincentive a utility has to administer and promote customer efforts to reduce energy consumption and demand or to install distributed generation to displace electricity delivered by the utility's T&D system. In regulatory parlance, RD takes the form of a tracker or attrition allowance in which authorized per customer margins are subject to a true-up mechanism to maintain or cap a given level of revenues or revenues per customer. Variations from the targeted sales or revenues are subsequently recaptured from ratepayers through a surcharge or credit.

In a significant departure from traditional cost-of-service principles, which historically provides utilities with only the opportunity to earn a fair return, RD guarantees actual earnings at the level of authorized earnings. Under RD, a utility is indifferent to the impact of sales levels or when the sales occur because of changing economic conditions, weather, or new technologies.

ELCON members are strong supporters of energy efficiency and are world-class practitioners of innovative technologies that reduce their energy costs to improve their competitiveness. But ELCON strongly opposes decoupling because it disrupts and distorts the utility core business functions and is not a particularly effective way of promoting energy efficiency or anything of benefit to customers. Time and time again decoupling has been tried in several states, only to be suspended because it unduly interferes with the overall regulatory process. ELCON believes that there are other ways to promote energy efficiency and load reduction services that have proven to be more effective. This paper describes the simple mechanics of decoupling, why decoupling has historically failed and is not likely to be any more effective in future applications, and proposes alternative regulatory policies that more effectively focus on market transformation and the effective delivery of demand-side services.

The Mechanics of Revenue Decoupling

An Illustrated Example of An Annualized RD Mechanism[1]

Base Year Assumptions

	Year One	Year Two
Utility's Operating Costs (A)	$4 billion	$4 billion
Utility's Rate Base (B)	$5 billion	$5 billion
Authorized Return to Equity Owners (ROE)	10%	10%
Authorized Earnings to Equity Owners (C) (10% of $5 billion)	$500 million	$500 million
Utility's Authorized Revenue (A + C)	$4.5 billion	$4.5 billion
RD Balance Account (D)	0	$45 million
Baseline Sales (E)	45,000 GWh	45,000 GWh
Base Rate per KWh (A + C)/E	$0.10	$0.10
Effective Rate per KWh (F) (A + C + D)/E	$0.10	$0.101

Actual Sales Year

Actual Sales (G) (1% diviation from baseline forecast)	44,550 GWh 1% Below Baseline	45,450 GWh 1% Above Baseline
Actual Revenues Collected (H) (F × G)	$4,455 million	$4,590 million
Unadjusted Earnings to Equity Owners (I) (H minus A)	$455 million	$590 million
Reported ('Authorized') Earnings (C)	$500 million	$500 million
Actual ROE (I/B)	9.1% Reduction of 90 basis points	11.8% Increase of 180 basis points
Reported ('Authorized') ROE	10%	10%
End-of-Year Balance Account (D) (A + C) minus H	$45 million	($90 million)

[1] This is a simplified example of revenue decoupling that assumes no variable T&D costs or change in the number of customers. Also, tax implications and accounting for price elasticity are ignored.

How Decoupling Works

RD mechanisms can take several forms but all accomplish the same thing: customer rates are automatically adjusted to immunize utility earnings from sales fluctuations.

The first example is illustrated on the spreadsheet on page 2. It provides a simplified form of mechanism in which true-ups are done on an annual or multi-year basis. The process usually starts with a baseline determination of a utility's revenues that may include the anticipated consequences of a DSM program. This is the 'base case' in the illustration.

The illustration holds this baseline constant over a two-year period. In the first year, actual sales are 1% below the baseline amount; in the second year actual sales are 1% above the baseline. The result is a revenue shortfall in the first year of $45 million. Absent any other offsetting revenue recovery mechanism, this shortfall reduces earnings to equity owners and the expected ROE. This illustrates a main argument of proponents of RD that any small reduction in sales can produce a significant reduction in the utility's allowed earnings. In the example, the actual ROE is 9.1%, a reduction of 90 basis points from the allowed ROE of 10%.

Applying the RD mechanism in the second year, revenues are adjusted by increasing the customer rate upwards to ensure that sufficient revenues are collected to achieve the allowed ROE. However, actual sales are 1% above the baseline amount and the utility over collects $90 million. The actual ROE is 11.8% or 180 basis points above the allowed ROE. This simple example highlights the potential year-to-year volatility of the RD mechanism.

With compounding economic events (e.g., recessions), the accrual account can grow quite large unless more frequent rate cases or true-ups are ordered. RD mechanisms tried in the past tended to generate substantial accruals that quickly became a dilemma for regulators and a burden for ratepayers.

The second example (on page 4) illustrates decoupling on a revenue-per-customer (RPC) basis. The base year revenue collected per customer (RPC) on an average customer class basis is fixed, and the annual charge is then typically allocated on a monthly, normalized basis over a reference year. Each month the actual revenues collected per ratepayer are compared to the allowed monthly RPC and the difference is either credited or debited to a balancing account. Customers would still be billed on a per-unit consumption basis, but the rate would be trued-up based on actual revenues collected per customer. This prevents the utility from earning additional profit from unexpected sales but also ensures that the utility recovers its costs resulting from unexpected customer growth. For unexpected declines in sales per customer and/or declines in the number of customers, the mechanism works the same way. Under- or over-recoveries in any month are automatically trued-up the following month or at the end of the year.

The RPC mechanism highlights the 'blunt instrument' nature of decoupling. The utility is made whole for earnings losses that go beyond the limited losses caused solely by energy efficiency and load reduction programs. The net effect of the true-up mechanism is to put the utility's revenue stream on autopilot. This isolates utility management and equity owners from the normal business risk inherent to the utility industry, notwithstanding that the existence of a ROE is to reward equity owners with a return on their investment that includes a sizeable risk premium commensurate with the business risk. In short, an RD mechanism makes retail electric distribution service virtually risk free for utilities.

The Mechanics of Revenue Decoupling

An Illustrated Example of Revenue-Per-Customer (RPC) Mechanism With Monthly True-Ups [2]

Base Year Allowed RPC

For a Base Year Month

Base Year Rate per kWh (A)	$0.10
Base Year (Month) Sales in kWh (B)	1 billion
Base Year (Month) Revenue (A x B)	$100 million
Base Year Number of Customers (C)	1,000,000
Allowed RPC (A x B)/C	$100

Calculation of Revenue Adjustment

For A Single Month

Base Year Rate per kWh (A)	$0.10
Actual Sales for the Month (D) 5% Reduction from Baseline (B)	0.95 billion
Actual Revenues for the Month (E) (A x D)	$ 95 million
Actual Number of Customers (F)	1,010,000
Allowed RPC	$100
Allowed Revenues (G) (F x E)	$101 million
Revenue Adjustment (H) (G - E)	$6 million
Forecasted Next Month Sales (I)	1.0 billion
Rate Adjustment (True-Up) (H/I)	$0.006

This adjustment is added to rates for sales the following month, or at the end the year.

[2] This example assumes that sales per customer decline but the number of customers grows.

ELCON Position & Recommendations

A. *Decoupling Promotes Mediocrity In The Management Of A Utility.*

The primary function of a regulated electric utility is and will always be to efficiently sell and deliver electric energy to customers. For investor-owned utilities, the profit-motive is a legitimate and practical means to incent utility managers to operate their business in a competent and efficient manner. There also need not be any conflict with 'unselling' the business' primary product by offering energy efficiency and load reduction services.

Firms in many industries meet the competition by selling a range of products competing for different segments of the market share. But in regulated industries, such as electric utilities, rate structures and regulatory policies may have to be aligned to make this work. The attractiveness of revenue decoupling to many utility executives is that it will immunize the company's earnings or revenues from sales fluctuations. This can only promote mediocrity and indifference to the utility's core business, a situation that should not be in the best interests of either advocates of selling or unselling the energy product.

B. *Decoupling Shifts Significant Business Risk From Shareholders To Consumers With Only Dubious Opportunities For Net Increases In Consumer Benefits.*

Decoupling does not create an economic incentive promoting greater energy efficiency or load reduction. It establishes, at best, utility indifference to these objectives. At the same time, it undermines customer efficiency efforts and muddles price signals to consumers. For example, conservation efforts are rewarded with higher future rates, while excessive consumption paradoxically produces bill credits. This is a cynical way to induce energy conservation that is not likely to be effective. Decoupling only removes an alleged disincentive while at the same time creating real disincentives for competent management of the business. The Maine Public Utilities Commission stated in 2004:

> Revenue decoupling does not ... provide any positive incentive for utilities to promote or support energy efficiency or conservation programs; it only makes them financially neutral to such activities.

There is growing national concern that utilities are under-investing in infrastructure and not adequately planning for the future needs of their customers. Why this situation has been allowed to happen is troublesome given that for many utilities their allowed return is already above their actual cost of capital. Regulatory policies need to refocus utility management on its core responsibilities to efficiently sell and deliver electric energy and to make prudent long-term investments. Regulators must not bargain with their utilities from a weak position that assumes that financial incentives in excess of a reasonable return is necessary for ordinary business behavior. For all practical purposes RD mechanisms put utility management on autopilot and this will only further encourage them to ignore their core business, the value of economic development in their franchise area, and the broader needs of the utility's customers. These objectives are at least as important as any attempt to only eliminate a disincentive to energy efficiency.

An important feature of the financial structure of investor-owned utilities is that the utility's shareholders assume normal business risk. This is the risk-reward model that pervades private businesses in the US and global economies. Shareholders are best able to diversify business risk and market-based economies strive on this basis. Utility ratepayers are least able to do so; yet it is the expressed intent of RD mechanisms to shift risk from shareholders to consumers, a radical

departure from standard regulatory policy intended to balance the interests of equity owners and ratepayers.

Proponents of RD mechanisms almost always support preserving the utility's allowed return on equity at a level that assumes the shareholders retain such risk. Getting utility management to buy into the scheme would be difficult otherwise. Hence RD mechanisms are an attempt to force energy efficiency and load reduction programs at any cost and with no regard for the economic welfare of the impacted ratepayers.

Using RD mechanisms in conjunction with general rate cases also can have a ratchet effect on revenues and rates to the extent the RD adjustments in between rate cases are memorialized in the next rate case. For these and other reasons there is ample justification for dismissing the alleged value of RD mechanisms in ratemaking.

C. *Decoupling Eliminates A Utility's Financial Incentive To Support Economic Development Within Its Franchise Area. This Includes The Incentive To Support The Well Being of Manufacturers And Their Workforce.*

Promoting growth in sales through the addition and expansion of business enterprises is a key area where utility financial incentives and local public interests are precisely aligned. Revenue decoupling breaks that alignment. While its sole purpose is the elimination of the alleged disincentive to a utility's active support for energy efficiency and load reduction programs, it also eliminates the financial incentive to actively promote the economic development of the utility's franchise area. More specifically, it neutralizes the financial incentive to attract new commercial and industrial businesses—and new job opportunities—to the utility's franchise area, and to support the well being of its existing commercial and industrial customers, unless those customer classes are specifically exempt from the RD mechanism. ELCON believes that regulatory policies should promote greater customer focus, not less.

D. *Revenue Decoupling Mechanisms Tend To Address 'Lost Revenues' And Not The Real Issue, Which Is Lost Profits.*

To the extent that rates based on sales create a disincentive for utility efforts to promote energy efficiency and load reduction, the problem is in the rate design and the failure to abide by long-standing cost-of-service ratemaking principles. RD mechanisms have the effect of shifting the recovery of the utility's fixed costs into the customer (or demand) charge of base rates where they belonged in the first place. Thus, from one perspective, RD can be viewed as a stopgap ratemaking mechanism to overcome rate designs that have been used and abused for other misguided policy objectives such as the imposition of cross-class subsidies and stranded cost recovery. The complexity of RD mechanisms also makes them very expensive to administer and regulate. This greatly reduces the transparency of the ratemaking process and, even more so in the public mind, reduces the logic of cost causation.

The ability of a utility to have the opportunity to earn a fair return on assets that are prudently incurred and that remain used and useful is a grand compromise of regulation that has withstood the test of over a hundred years of practice. Any increased opportunity for a utility to earn its authorized rate of return must be commensurate with an increase in business risk, not the reverse!

There is no inherent inconsistency that a utility would both sell and 'unsell' electric energy if rates are appropriately designed for the different services. Selling competing products and services is a common business choice and need not be a moral dilemma only for utility executives. There are examples of state ratemaking practices such as shareholder performance incentives that create

more explicit economic inducements for promoting energy efficiency and load reduction. These practices avoid the collateral damage created by the 'blunt instrument' nature of RD mechanisms.

E. The First And Most Important Step Regulators Can Take To Promote Energy Efficiency Is To Send The Proper Price Signals To Each Customer Class.

In the short term, seasonal weather variations are the predominant cause of variations from sales forecasts. For example, unseasonably mild winters can lead to below forecast sales. In the longer term, economic growth in the form of increased customer accounts and usage drive electric sales and revenue growth. Ratepayer investments in energy efficiency gradually moderate energy sales growth. Load shifting efforts from peak to off-peak periods may not reduce overall kWh sales, but should lower the cost of supplying that energy.

Thus the first and most important step regulators can take to ensure that ratepayers themselves are induced to make energy efficient investments and behavioral changes is to implement retail rates that send the proper price signals to each customer class. This includes allocation of fixed costs to customer (or 'demand') charges and time-variant energy charges. The Energy Policy Act of 2005 directs the states to consider expanded deployment of time-based pricing and advanced metering, and ELCON strongly encourages states to pursue this path to more efficient pricing rather than the futile pursuit of decoupling mechanisms.

Large industrial customers are almost always on some form of time-of-use rate, with a demand charge, and this rate structure is extremely valuable to the customer for evaluating the cost-effectiveness of energy efficiency improvements in their manufacturing facilities. Large industrial customers do not look for guidance from utilities on how to co-optimize their energy consumption and manufacturing activities, and 'decoupling' does not make utilities experts in these matters. By further blunting price signals to ratepayers, RD mechanisms actually undermine incentives for customers to invest in more efficient appliances and equipment because the reward for reducing consumption is higher rates in the future. ELCON members believe that a utility's fundamental responsibility is to efficiently sell and deliver energy at the lowest possible cost, and appropriate price signals are an essential component of that objective.

F. Several States Have Successfully Used Alternative Entities—Including Government Agencies—For Unselling Energy. This Creates An Entity Whose Sole Mission Is To Promote Energy Efficiency, And Retains A Separate Entity Whose Responsibility Is To Efficiently Sell And Deliver Energy.

Some states believe that simultaneously selling and unselling electric energy is a real conflict of interest and have assigned the administration of the unselling function to an independent entity or agency whose mission is dedicated to promoting energy efficiency and load reduction. This policy recognizes that another entity—the utility—must be responsible for efficiently selling and delivering electric energy. States that have taken this path are Wisconsin, Maine, New Jersey, Ohio, Vermont, Oregon, New York, and Connecticut.

In New York, for example, the New York State Energy and Research Development Authority (NYSERDA) is charged with the responsibility for demand-side programs, and is funded by a systems benefit charge that is collected by the utilities. Wisconsin established *Focus On Energy* as a public-private partnership offering energy information and services to residential, business, and industrial customers throughout the state. There services are delivered by a group of firms contracted by the Wisconsin Department of Administration's Division of Energy.