

Decoupling: Divorcing Electricity Sales from Revenues Creates Win-Win for Utilities and Customers

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ABSTRACT

Current regulatory mechanisms have created incentive structures that discourage utilities from implementing energy efficiency, demand side management and other load reducing programs for their customers. These disincentives are driven by the existing regulatory linkage between how many kilowatt-hours (kWh) a utility sells and the size of utility's revenue stream. In recent years, there has been a significant discussion regarding "decoupling" a regulatory initiative designed to break the linkage between utility kWh sales and revenues, and remove the disincentives to load reducing initiatives. A number of states have discussed decoupling and few, most notably traditional first adopters California and Idaho, have implemented decoupling programs for the electric utilities. The following paper discusses the decoupling mechanism and explains how decoupling—when properly done—creates a win-win position for all parties involved.

Introduction

With the August headlines reading "U.S. breaks the all-time weekly demand record for electricity during national heat wave," (EEI, p. 1) still ringing in our ears, it is an appropriate time to revisit a core problem of the regulated utility as a business: a systemic conflict of interest. Currently, what is good for the utility often conflicts with the interests of American society at large. For example, as Kushler, York and Witte correctly point out,

the utility industry faces a "perfect storm" of high fuel prices, escalating construction costs, increased uncertainty surrounding cost-recovery for new generation plants, mounting concerns around system reliability, and looming environmental costs—particularly potential carbon emissions costs. In these circumstances, energy efficiency has become increasingly perceived as a viable—even preferred—resource option because of its unique attributes in positively addressing all these concerns. (Kushler, York and White, p. 3).

Yet despite the increased interest in and viability of energy efficiency¹ to meet both the utilities' needs and the public's concerns, current regulatory structures through most of the country create environments where utilities have a systematic disincentive to pursue energy-efficiency programs and objectives.

The fundamental conflict is created by the utility rate policy currently followed across most of 49 states, with the noteworthy exception of California.² This structure directly links

¹ For example, "when we look back at the greatest engineering achievement of the 21st century, it will be the universal access to energy efficiency." Jim Rogers, CEO, Duke Energy on April 17th, 2007 at ACEEE Conference on Energy Efficiency Finance.

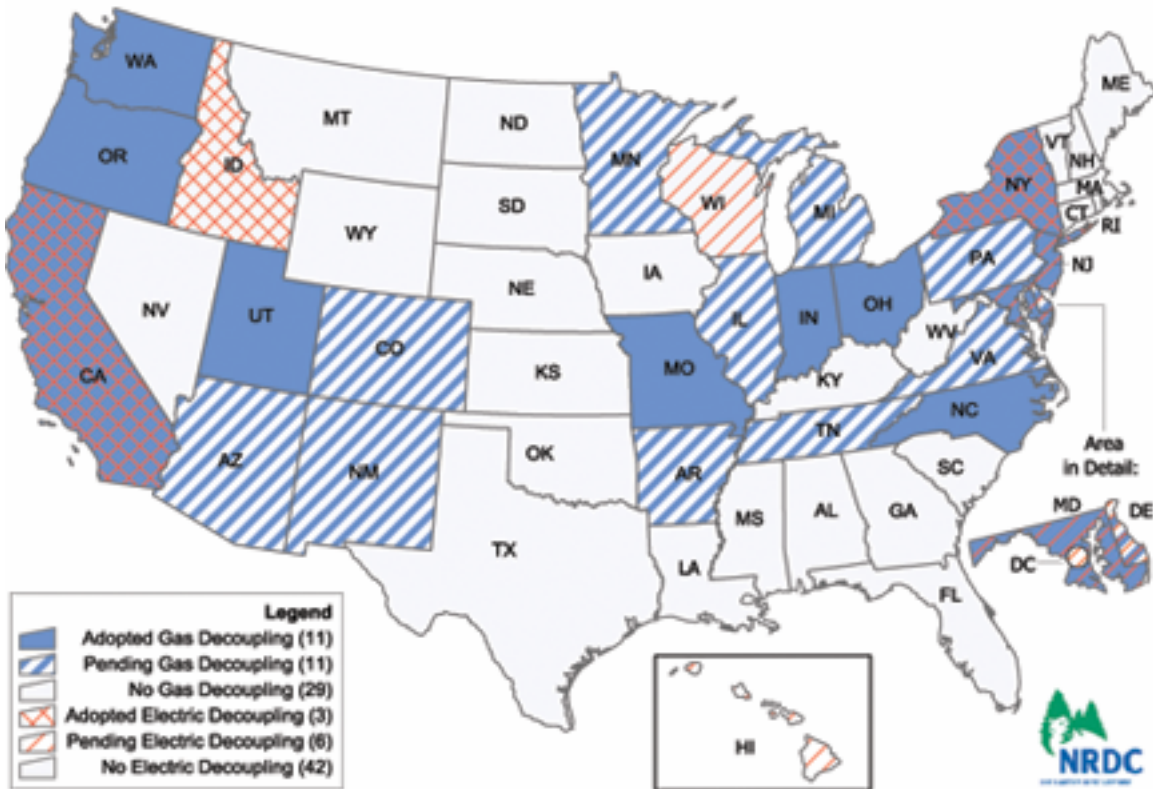
² For a simplified discussion of California's Decoupling policy, see one page overview published by the California Public Utility Commission; available at: www.cpuc.ca.gov/static/californiadecouplingpolicy.pdf. Recently, Idaho

electricity sales to an investor owned utility's revenues. Said another way, these utilities make more money by selling more electricity and they make less money by helping their customers use less energy.

Consequently, this disincentive, and the associated responsibilities utilities have to their shareholders, impair most utilities' willingness and ability to promote energy efficiency—in spite of the positive impacts energy efficiency can have on consumers' bills, electrical reliability, national security and the environment (Kushler, York and White, p. 3).

A number of states have looked at removing the disincentives of energy efficiency for utilities. These states include Connecticut, Idaho, North Carolina, Utah, Arizona, Maine, Minnesota, New Hampshire, New Mexico, Nevada, Rhode Island, Oregon, New York, Washington, Massachusetts, Wisconsin, Colorado and Maryland, as can be seen in the map below. In particular, Massachusetts (Howe, p. 1) and New York (NYPSC, p. 1) have announced that they are developing plans for utility revenue decoupling mechanisms to eliminate energy efficiency disincentives.

Gas and Electric Decoupling in the US



Source: Natural Resources Defense Council, 27 April 2006.

Power Company started implementing a pilot program using decoupling and Demand Side Management, which was approved by the Idaho Public Utilities Commission on March 12, 2007.

Decoupling Defined

The single best solution to remove the disincentive is called “decoupling.” Decoupling is regulatory process by which the linkage between electricity sales and utility profits and fixed-cost recovery is broken. Breaking the linkage between utility sales and utility revenues will remove the disincentives and stimulate utility investment in energy efficiency, renewable energy and distributed generation.

“Clearly, the most important disincentive to regulated utilities is a loss of revenue when they helps their customers with energy efficiency projects,” according to Devra Wang, director of the California energy program for the Natural Resources Defense Council. “Since utilities’ incentives are determined by their regulators or public governing boards, there is nothing inherent about this conflict, and regulators and governing bodies can and should remove this disincentive.” (Wang Interview, 2006).

For example, as noted by The Regulatory Assistance Project (RAP), for every one percent (1%) reduction in utility sales, the current system would result in a five percent (5%) reduction in utility profits. This clearly demonstrates why the utilities, especially those that are vertically integrated, possess such a strong disincentive to support and implement efficiency, demand-side management and other related programs (Moskovitz, p. 12).

Decoupling vs. Lost Revenue Adjustment Mechanism (LRAM)

Another commonly proposed approach to removing the disincentives for utilities to support energy efficiency is called the Lost Revenue Adjustment Mechanism. While some states had adopted a version of LRAM³, it has several drawbacks. First, the utility may receive a larger allowance for lost revenues, because those revenues are based on projected savings, not actual savings. Then, there is the legacy problem that utilities are still allowed to increase profits by fostering additional sales. A side-by-side comparison between decoupling and lost revenue adjustments is very illustrative, as can be seen in the chart below.

Benefits of Decoupling

It is worth noting that adjustments to the approved rate of return for capital investments—either supply or demand-side resources—are an important policy tool for state regulators. It allows regulators to calibrate the level of profits on each energy resource using a carrot and stick approach with an eye on energy efficiency, best practices and project management. As the most economically viable solution for removing the disincentives surrounding energy efficiency and creating performance-based incentives, decoupling will allow utilities to profit from doing the right thing.

³ For example, Kentucky and Nevada. For a fuller discussion of their programs and the LRAM approach in general, see Shirley, p. 13, 29-31.

Table 1: Decoupling vs. LRAM

Issue	Decoupling	LRAM
Does initiative remove all sales incentives for utility?	Yes	No
Does initiative remove a major disincentive to Demand-Side Management Projects?	Yes	No, removes some but not all.
What types of measurement and estimation activities are required?	Simple and Limited	Can extensive and complicated, but not necessarily
Can a utility project of an ineffective DSM project?	No	Yes, potentially.
Does the initiative remove the disincentive to efficiency policies?	Yes	No
Does the initiative reduce future rate case controversy?	Yes	No
Does initiative reduce revenue volatility for utilities?	Yes	Only in limited cases.

Source: United States Environmental Protection Agency, Table 6.2.2 (US EPA, p. 6-27).

“This combined approach, decoupling and energy efficiency, applies the appropriate principles and the appropriate methods to solve the disincentive of energy efficiency for utilities,” (Weber Interview, 2006) said Tory Weber, Energy Efficiency Regulatory Manager for Southern California Edison, an investor owned utility.

Additionally, removing this revenue-loss disincentive eliminates the single biggest obstacle to having utilities embrace energy efficiency as a resource. “Decoupling would be a tremendous improvement,” observes Dr. Martin Kushler, Director of the Utilities Program for the American Council for an Energy Efficient Economy (ACEEE), “because energy efficiency can save electricity at less than half the cost of building, fueling and operating a new power plant” (Kushler Interview, 2006).

Moreover, decoupling could open the door to meeting as much as two-thirds of new energy demand by reduced energy consumption, rather than building new power plants.

“The Alliance to Save Energy has joined with utility leaders, government officials and other key stakeholders to remove existing regulatory barriers and to create incentives that will insure greater utility investment in energy efficiency across the nation,” said Alliance President Kateri Callahan. “Ultimately, we all benefit from energy efficiency. The rewards include a cleaner environment and a more robust economy.” (Callahan Interview, 2006).

While decoupling is a necessary precursor to improving utility rate design, it cannot stand-alone. It must be accompanied by a reasonable cost-recovery mechanism to provide funding for utilities’ energy efficiency programs and other clean power initiatives such as distributed generation. Utilities should be able to receive a performance reward for their measured and verified clean energy successes. For example, “shared savings mechanisms” align

utility and customer interests by providing utilities with larger rewards when the programs provide larger savings for customers.

Here is how the shared savings financing program for customers works: A company can upgrade its equipment to improve its energy efficiency with no up-front capital investment. In exchange, the company repays the utility each month on the utility bill over a contract term—typically five years—using some of the energy savings to make the utility payment and keeps the rest of the savings. After five years, the customer keeps all future energy savings.

Conclusion

By bringing together these three approaches (remove disincentives, recover utility costs and establish performance rewards), state regulators can create an energy market where all major and minor stakeholders are on the same side. The battles over energy efficiency among customers, environmental groups, consumer groups, utilities, legislators and public service commissions could become a thing of the past. With the technological advancements in measurement and verification systems, a kilowatt saved can be proven to be a kilowatt saved no matter who institutes the savings.

Since the early 1970's, the United States economy has reduced the intensity of energy consumption to a point where we would be using 75% more energy with the investments in energy efficiency. "This means, remarkably, that energy efficiency contributed almost four times as much as new energy supply in the United States to meeting demand for energy services during the three decades since the 1973 oil embargo," (Levine, p. 27) stated Mark Levine, director of the Environmental Energy Technologies Division at the Lawrence Berkeley National Laboratory in California. Recently, it is estimated that the "U.S. annual energy bill is approximately \$1 trillion dollars. Without the energy efficiency investments of the last three decades, the energy bill would be \$1.5 trillion" (Levine, p. 29).

Currently, California is the only state that has a permanent program of using decoupling for investor-owned electric utilities. In addition, the recovery of costs and the re-establishment of performance incentives are now under review. According to Devra Wang, "With decoupling, cost-recovery and performance-based incentives, California will soon have all of the policies in place to ensure that cost-effective energy efficiency is truly the state's top priority resource. These policies are already accelerating efficiency program investments, saving customers billions of dollars and reducing global warming pollutants at the same time." (Wang Interview, 2006).

The results so far are impressive. California has doubled its energy efficiency targets and budgets in anticipation of meeting the majority of the need for new power by investing in energy efficiency. Based on today's dollars and electric rates, the net benefit in energy savings is expected to be \$10 billion over the next decade. For example, during the high-use summer months of 2002 in California, energy efficiency and "conservation yielded 11 percent in electricity savings and 16 percent of peak power savings" (Levine, p. 26). The major problem is the energy efficiency does not lend itself to visualization nor is it as sexy as renewables or the promise of a technological silver bullet.

"California boasts a unique and near-perfect alignment of energy policy and the utilities' business framework," (Rodriques Interview, 2006) stated Gene Rodriques, Director of Energy Efficiency, Customer Programs & Services Division, Southern California Edison Company. "The decoupling mechanisms adopted for the investor-owned utilities - working in tandem with the reinstatement of performance-based financial incentives for administration of the energy

efficiency portfolio - allow us to aggressively pursue energy efficiency for the benefit of our customers and the environment, while also benefiting our shareholders. As California's tremendously successful energy efficiency campaign attests, that's just good public policy” (Rodrigues Interview, 2006).

With the proper use of decoupling by the public service commissions and state legislators throughout the U.S., Americans can expect to harvest tens of billions of dollars in energy savings and reduce tens of millions of tons of emissions over the next decade. Our economic competitiveness depends on it.

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