State Policy Series: Impacting Industrial Energy Efficiency

Natural Gas Revenue Decoupling Regulation: Impacts on Industry

Revenue decoupling is a type of rate design that Public Utility Commissions (PUCs) use to delink a utility's revenues from the volume of gas distributed. With revenue decoupling regulation, a natural gas utility's revenues are essentially fixed by the PUC. If a utility's actual revenues are above the fixed level due to a larger volume of sales than expected, customers receive a credit from the utility for the difference; if actual revenues are below the fixed level due to a smaller volume of sales than expected, the utility issues a customer surcharge for the difference. To this end, a utility's revenues are decoupled from its volume of sales because its revenues are fixed as sales fluctuate.

Revenue decoupling has a number of benefits, such as smoothing variations in customer bills and utility earnings. In recent years, it has gained more attention in states across the country because it removes a utility's incentive to increase sales. As long as utilities have an incentive to increase sales, they tend to have a disincentive to promote energy efficiency. States that are motivated to reduce energy consumption have turned to natural gas revenue decoupling as a means to align utility interests with state energy policies.

Traditional vs. Revenue Decoupling Rate Case

In a traditional rate case, a regulatory body—typically a PUC—determines the utility's authorized level of revenue by establishing the expenses a utility can recover for its distribution service and operating costs, as well as a reasonable return on equity for shareholders. Gas costs are excluded from the authorized revenue calculation because they are passed on directly to customers. By dividing the authorized revenue by the expected volume of natural gas distribution, the regulatory body determines a rate—or price per unit of delivery—that the utility is authorized to collect for natural gas distribution.

Revenue decoupling is a relatively simple amendment to traditional rate design. There are two primary concepts:

1. A traditional rate case uses a forecast of sales to set a rate whereas revenue decoupling uses actual sales to set a rate. Because actual sales can only be known after-the-fact, revenue decoupling calculates an adjustment at a later date.
2. A traditional rate case allows revenues to fluctuate around a fixed-rate price, whereas revenue decoupling allows a rate price to fluctuate around a fixed level of revenues.

States with Natural Gas Revenue Decoupling

The United States has seen an upward trend in the use of natural gas revenue decoupling amongst state and utility regulators. Between mid-2007 and early-2010, the number of states that adopted natural gas revenue decoupling grew from 10 to 18, representing an 80% increase. As of January 2010, 18 states use natural gas revenue decoupling:

- Arkansas
- California
- Colorado
- District of Columbia
- Illinois
- Indiana
- Maryland
- Massachusetts
- Minnesota
- Nevada
- New Jersey
- New York
- North Carolina
- Oregon
- Utah
- Virginia
- Washington
- Wisconsin
- Wyoming

The following are states with PUCs considering natural gas revenue decoupling regulation for a natural gas utility:

- Kansas
- Michigan
- Nebraska
- Tennessee

The majority of the states with the largest industrial natural gas consumption have not adopted natural gas revenue decoupling. Of the 15 states with the largest industrial natural gas energy consumption, only 6 states—California, Colorado, Illinois, Indiana, Minnesota, and Wisconsin—have adopted revenue decoupling and 2 others are considering the policy.

In addition, PUCs rarely apply revenue decoupling to a natural gas utility's industrial customers. As of May 2010, only two states—California and Massachusetts—have ordered natural gas revenue decoupling for industrial customers.

Natural Gas Efficiency Programs: Industrial Impacts

The U.S. industrial sector constitutes a large share of the U.S. economy. In 2008, industry was responsible for generating $2.1 trillion and accounted for 15% of total gross domestic product. Not surprisingly, industry consumes nearly 30% of all direct natural gas in the United States and produces roughly 1,670 million metric tons of carbon dioxide (CO_2) emissions annually. Due to its large share of energy consumption, the industrial sector can play an important role in achieving state energy goals.

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Revenue Decoupling Benefits and Challenges

	Benefits of Revenue Decoupling	Disadvantages of Revenue Decoupling
Customers and Utilities:	• Reduces volatility in a utility's revenue and customers' bills. • Provides more equity between customers and the utility because decoupling is based on actual revenues rather than estimates. Decoupling helps remove the zero sum game between a customer and a utility. • Significant energy conservation has the potential to cause a gradual decline in gas commodity prices as overall demand is reduced	• Customers may not understand how decoupling serves their long-term interests because they may experience extra surcharges in the short term. Delays in surcharges and credits on customer bills may dilute a customer's perceived risk reduction to fluctuating energy bills. • Some perceive volatility in utility revenues as being in the rate payer's best interest—in other words, rate payers should benefit when weather is mild or they adopt energy conservation measures.
Regulators and Utilities:	• May reduce controversy in utility rate cases because assumptions in rate cases are later reviewed and adjusted. • May reduce the frequency, length, and cost of rate cases.	• Regulators must conduct a true-up calculation to adjust for discrepancies between estimated and actual authorized revenues, which can be a complex process.
States and Utilities:	• Removes incentive for utilities to discourage public policies that promote energy efficiency and green house gas reductions. • Causes state and utility resources to be more efficient because they are not working against each other to reduce and increase energy use, respectively.	• Although revenue decoupling allows utilities to recover lost revenues from declining sales in a particular year, the utility does not recover marginal loses in future years.
Energy Efficiency:	• Removes utilities' incentives to increase volumetric sales. • Utilities are in a good position to reach customers with energy efficient opportunities and education; thus removing the barriers for utility energy efficiency programs helps achieve energy reductions.	• Revenue decoupling removes the incentive to encourage energy consumption, but it does not in itself provide an incentive to invest in energy conservation programs.
Stakeholders:	• As per capita natural gas use continues to decline, investors are beginning to perceive states and utilities with innovative rate designs that align energy efficiency and company profits as better investments.	• Revenue decoupling could shift the risk between utility shareholders and ratepayers. • Revenue decoupling removes the penalty for energy conservation in the short term, but it does not improve a shareholders return on equity in the long run.

A 2009 American Gas Association study found there were 81 natural gas utilities in program year 2008 that had implemented an energy efficiency program in the United States. Of the 75 natural gas utilities that responded to the survey in full, 99% provided energy efficiency incentives for residential customers, 67% provided commercial and small industrial initiatives, and 1 program provided measures to commercial and industrial (C&I) customers only. Survey results indicated that more utilities offered residential programs, they spent more on residential customers, and their residential customers participated far more often. However, the report also found that the energy efficiency programs for industrial and commercial customers accounted for nearly 53% of total energy savings—compared with only 33% savings from residential customers. ***Dollar for dollar, investments made in industrial and commercial energy efficiency captured both energy-savings and greenhouse gas emissions reductions more effectively than investments for residential customers.***

California, the third largest industrial consumer of natural gas in the U S, was the first and only state to decouple natural gas rates for industrial customers until Massachusetts followed suit. The California PUC has cited revenue decoupling for both electric and natural gas utilities as a primary reason for the achievements in energy savings the state has experienced in the last three decades. The Massachusetts Department of Public Utilities designed its revenue decoupling policy for natural gas as a direct response to the state legislature's energy reductions goals.

Natural gas utilities in all other states continue to operate under an incentive to sell more natural gas distribution to the customers that consume the largest amounts. For states with mandated energy-reduction targets, there is a significant opportunity to achieve industrial energy savings by aligning natural gas utilities' financial interests with state energy goals. An examination of the revenue decoupling mechanisms applied to natural gas utility's industrial customers in Massachusetts and California provides examples for how PUCs might address the unique and non-homogenous character of large natural gas customers in a revenue decoupling policy.