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Decoupling: The Vehicle For Energy Conservation?

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Decoupling: The Vehicle For Energy Conservation?

Although decoupling rate mechanisms have been in effect since the early 1980s, they were initially introduced only on a limited basis. Recent changes, including rising global warming concerns, and soaring commodity prices and building material costs, have brought decoupling to the forefront of the U.S. utility sector. To address some of the challenges, regulators are turning towards energy-efficiency programs and focusing on decoupling as the means for their implementation. In general, Standard & Poor's Ratings Services views decoupling as beneficial to the utilities' credit quality. Nevertheless, achieving energy conservation through decoupling may present risks and unforeseen challenges.

Traditional Rate Mechanism

Utility regulators have historically set electricity rates that allow the utility to recover its operating costs and earn a return on equity. Once the new rate is realized, it will remain in effect until the completion of a subsequent rate case. During the interim period, a utility's actual distribution revenues earned may fluctuate from the amount forecasted due to changes in the weather and the regional economy. For example, if the weather is warmer than expected, customers will use more kilowatt-hours (kWh) and the utility will earn more distribution revenue than was previously forecasted. Conversely, if there is an economic downturn, customers will use less kWh and the utility's actual revenues would be less than projected.

Under the traditional rate mechanism, every kWh sold adds to a utility's profits and every kWh lost due to conservation reduces profits. Thus, a utility's traditional response to higher electric demand was to increase its rate base by adding generation. There was no incentive to lower demand through an energy-efficiency program. This can be especially frustrating to both the utility and to its customers when the most cost-effective solution is to reduce demand rather than to increase supply. To attempt to resolve this inherent conflict, regulators and utilities have turned to decoupling.

Is Decoupling The Solution?

Decoupling is a mechanism that severs the relationship between sales and revenues, thereby allowing a utility to earn a predetermined level of distribution revenue regardless of the actual kWh sold. There are several variations as to how decoupling is computed, including normalizations for weather and number of customers, and caps for maximizing the rate adjustment. Still, its basic principle is that a true-up mechanism is applied to actual sales, allowing the utility to earn a predetermined level of distribution revenue. Similar to traditional rate mechanism, decoupling charges customers based on rate per kWh, but adjusts the rate to ensure that the predetermined distribution revenue is earned. By using a decoupled rate mechanism, the utility is indifferent as to the amount of kWh customers consume. This mechanism removes the disincentive for utilities to conserve, and allows a utility to execute an energy plan of either supply growth or demand reduction based on solid economics and/or other policy issues. Other potential benefits for decoupling include the following:

- Fewer rate cases filings, which result in lower overall costs for the utilities;
- Reduced need for new power plants whose costs have skyrocketed during the past five years; and

- Overall lower customer bills due to energy conservation.

However, decoupling on its own doesn't guarantee that a utility will implement a successful energy-efficiency program; it only ensures that a utility is indifferent as to the customer's usage. To persuade a utility to actively and successfully implement an energy-efficiency program, some regulators have established a separate program that provides penalties and incentives for meeting certain energy-efficiency standards. For example, Arizona Public Service Co. has $10 million annually in base rates for energy efficiency and the utility may earn an incentive of up to 10% of the net economic benefits based on its energy-efficiency performance.

Credit Implications Of Decoupling

Standard & Poor's views decoupling as a positive development from a credit perspective. Decoupling allows utilities to project cash flow more accurately and avoid much of the earnings volatility from changes to weather/economy under traditional rate mechanism. To decouple sales and revenues, most regulators use a tracking mechanism, such as a balancing account, to record deviations from the financial projections. Standard & Poor's will only consider a decoupled mechanism good for credit quality if it minimizes the lag time before deferrals are included in rates, and does not subject the rate changes to a protracted prudence review.

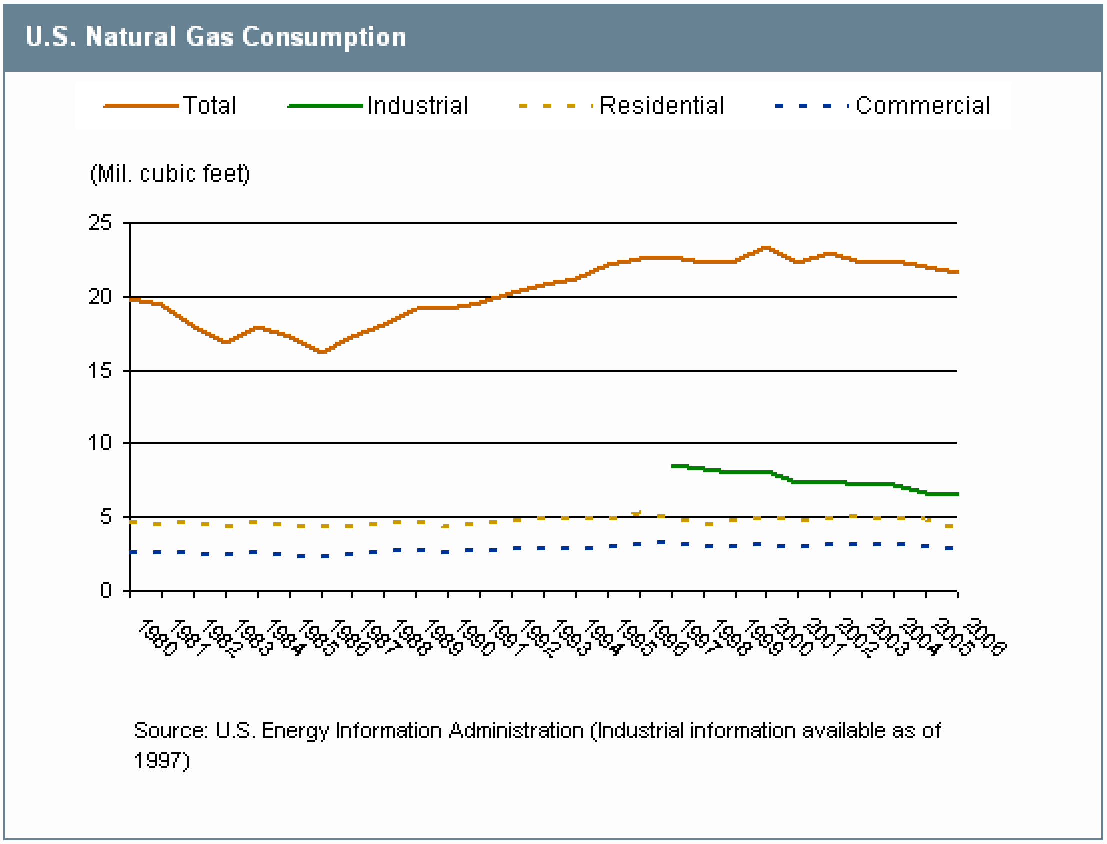
Nevertheless, decoupling has not been widely adopted due to the following factors:

- Some utilities prefer the traditional rate mechanism, which provides for a windfall when the weather is hotter than normal;
- Decoupling may shift the risk of sales volume variations associated with weather/economy from the utility to the customer;
- Regulators may require a lower ROE in exchange for decoupling's reduced risks;
- Decoupling's guaranteed level of distribution revenue, regardless of actual performance, may promote mediocrity in the management of a utility and cause a decline in customer service; and
- Previously failed decoupling experiences.

Gas Decoupling More Prevalent

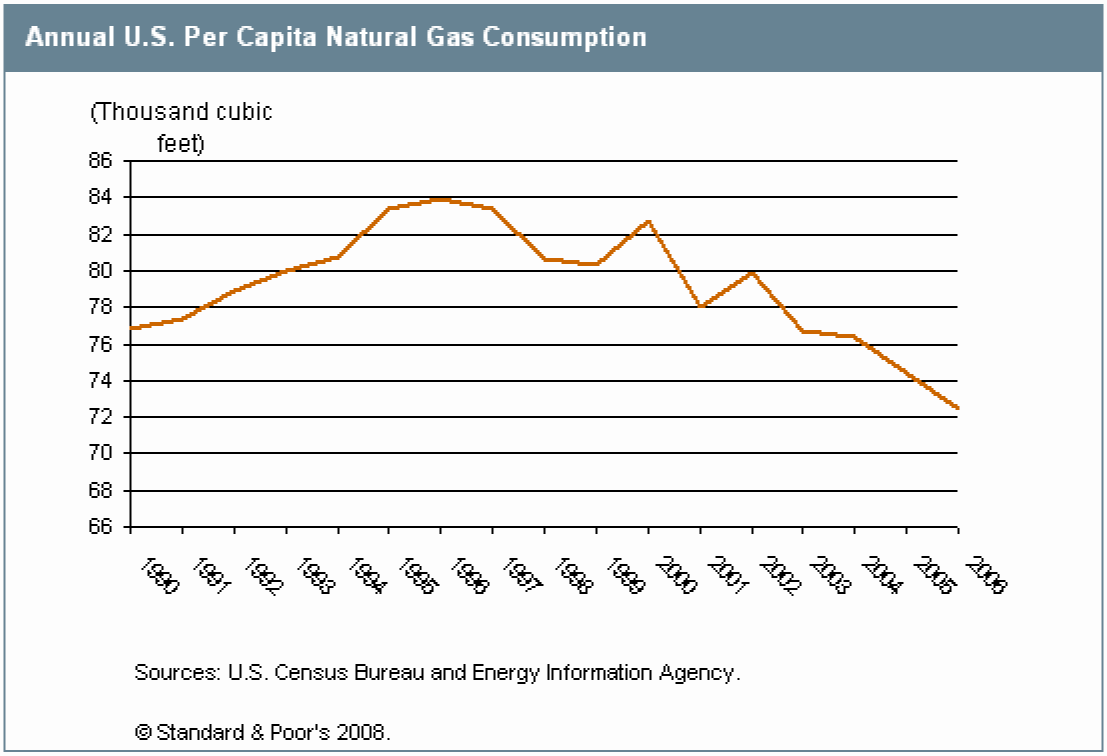
Regulators have approved and implemented decoupling mechanisms for gas utilities in 11 states and for electric utilities in only three states. This discrepancy can be traced to the per-customer usage of each commodity (see charts 1 and 2). Natural-gas use per customer has been in decline since the 1980s due to the improvement in housing insulation, the installation of efficient gas boilers, and global warming.

Chart 1



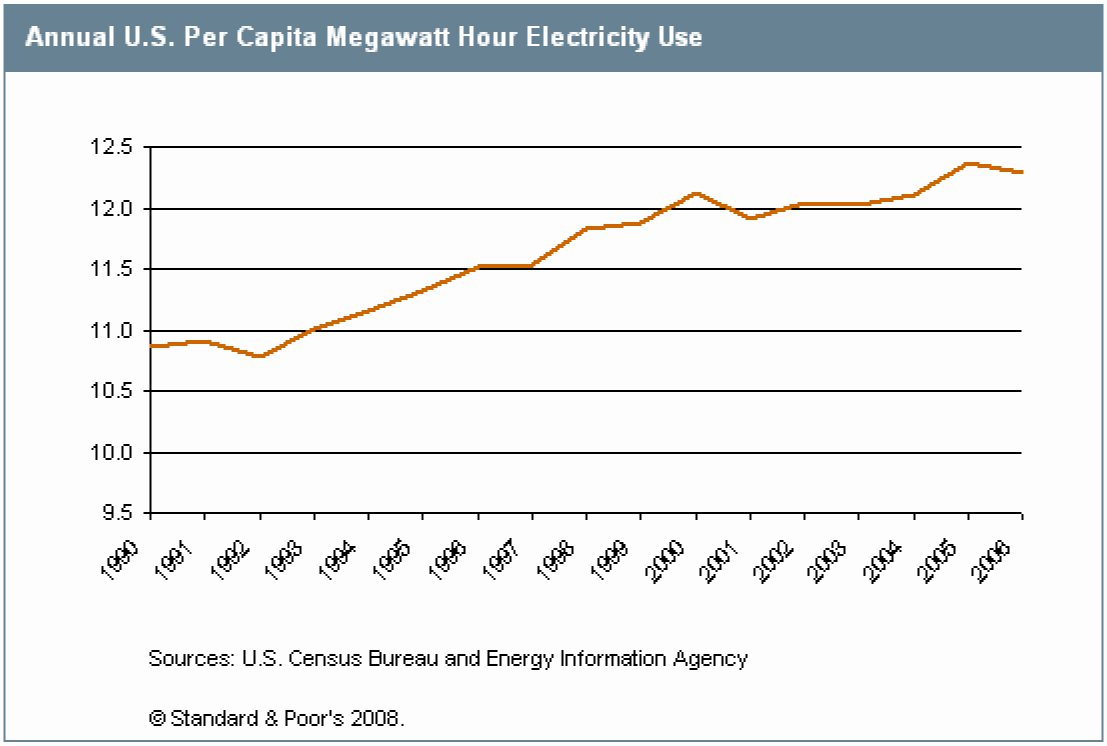
Source: U.S. Energy Information Administration (Industrial information available as of 1997)

Chart 2



Electricity use per customer, for the most part, has increased over the same period (see chart 3). Despite the availability of energy-efficient air conditioners, refrigerators, and light bulbs, electric use per customer has risen due to larger homes and greater use of technology.

Chart 3



To help offset the earnings loss due to energy efficiency, gas utilities have been working with regulators to establish a decoupling mechanism. On the other hand, electric utilities may potentially face lower earnings due to decoupling because they would have to forgo the potential benefits of warmer weather or an upturn in the economy.

Decoupling's Pros and Cons

Some decoupling mechanisms isolate the kWh consumption changes solely from energy efficiency and are not affected by energy changes due to the weather/economy. These types of decoupling mechanisms effectively preserve the status quo that the risk of weather/economy remains with the utility. For example, the Illinois Commerce Commission recently approved a gas decoupling mechanism for the Peoples Gas Light and Coke Co. that provides a credit/charge to customers when the weather varies from normal and theoretically retains the risk of weather with the utility. However, these mechanisms can be complex and for the most part, many of the existing decoupling models are directly affected by changes to weather/economy and thereby shift those risks to the customer from the utility. Reacting to this shift in risk, advocacy groups and regulators have requested that customers be compensated in the form of a lower authorized ROE for utilities. These basic changes to historical risks and assumed returns have been partially attributable for the resistance towards implementing a decoupled rate mechanism.

Maine

Another setback for decoupling has been some of the past failures of its implementation. In the 1990s, Maine introduced a decoupling mechanism that led to an abrupt rise in electricity rates, and the state ultimately abandoned the program. The steep rate hike was due to the recession, rise in deferred balances over an extended period instead of a periodic true-up, and no cap on the rate increase. This and other similar experiences point to the potential risks involved when implementing a decoupled mechanism and its unintended consequences.

California

California is the most successful example of the use of a decoupling mechanism. California first set up decoupling in 1982 and has subsequently combined it with various energy-efficiency incentive programs. This has led to today's per capita use of electricity in California to be virtually the same as in the 1980s and compares favorably to the significant increase of per capita electricity usage for the rest of the country. As of 2006, California had the lowest per capita use of electricity in the U.S. (see table). California was able to achieve these results by making energy efficiency a top priority and requiring utilities to invest in energy efficiency whenever it was cheaper than procuring power. In addition, the state successfully collaborated with businesses, non-profit organizations, government agencies, and utilities to work together to implement conservation solutions. California is clearly the best example of how implementing a decoupling mechanism can be an integral part of the overall conservation package.

Annual Per Capita Megawatt Hour Electricity Use*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Wyoming	25.9	25.6	25.1	25.1	24.4	23.1	23.5	24.1	23.7	24.0	25.0	26.3	25.9	26.5	26.9	27.9	29.1
Kentucky	16.5	17.2	17.8	17.9	18.8	19.2	19.6	19.4	19.0	19.7	19.3	19.7	21.3	20.7	20.9	21.4	21.1
Alabama	14.8	14.9	15.0	15.4	15.9	16.3	16.9	17.1	18.0	18.1	18.8	17.8	18.6	18.7	19.3	19.6	19.8
District of Columbia	16.3	17.0	16.8	17.4	17.5	17.8	17.7	17.8	18.2	18.3	18.6	18.8	19.2	19.0	19.7	20.3	19.5
South Carolina	15.9	16.0	16.1	16.8	16.7	17.4	17.7	17.8	18.5	18.4	19.1	18.4	19.0	18.6	19.0	19.1	18.7
Louisiana	15.1	15.2	15.2	15.7	16.1	16.6	17.1	17.2	17.5	17.5	18.1	16.7	17.7	17.4	17.8	17.2	18.3
West Virginia	12.9	13.1	13.2	13.4	13.6	14.2	14.3	14.4	14.6	15.0	15.3	15.4	15.8	15.7	16.0	16.7	17.9
North Dakota	11.0	11.4	11.2	11.6	11.9	12.2	12.8	12.7	12.7	14.1	14.7	15.4	16.1	16.5	16.5	17.0	17.6
Tennessee	15.8	15.8	15.6	15.5	15.8	15.4	16.2	15.8	16.5	16.5	16.8	16.7	16.9	16.6	16.9	17.3	17.1
Indiana	13.3	13.7	13.6	14.3	14.5	14.9	15.1	15.0	15.3	16.0	16.1	16.0	16.5	16.2	16.6	17.0	16.8
Arkansas	11.6	11.9	11.8	12.9	13.1	13.7	14.0	14.2	15.0	15.0	15.5	15.5	15.7	15.8	15.9	16.7	16.6
Mississippi	12.5	12.7	12.7	13.1	13.6	13.9	14.4	14.4	15.2	15.5	15.9	15.5	15.9	15.9	15.9	15.8	16.2
Idaho	17.8	17.3	17.7	16.9	17.4	16.7	18.1	18.2	17.6	17.8	17.6	16.0	15.4	15.6	15.7	15.3	15.5
Nebraska	11.3	11.7	11.0	11.5	12.1	12.6	12.8	13.4	13.6	13.4	14.2	14.4	14.9	14.9	14.8	15.4	15.5
Oklahoma	13.5	12.4	11.9	12.5	12.5	12.5	13.0	13.2	14.1	13.6	14.3	14.3	14.2	14.4	14.5	15.2	15.3
Texas	13.9	13.8	13.5	13.8	13.9	13.9	14.4	14.5	15.1	14.7	15.2	14.9	14.8	14.6	14.3	14.6	14.6
Montana	16.4	16.6	15.9	15.3	15.3	15.3	15.6	13.4	15.8	14.8	16.1	12.6	14.1	14.0	14.0	14.4	14.6
Iowa	10.6	11.0	10.7	11.3	11.6	12.0	12.2	12.5	12.9	13.0	13.3	13.5	14.0	14.0	13.9	14.5	14.6
Georgia	12.4	12.3	12.2	12.8	12.6	13.1	13.5	13.3	14.1	14.0	14.5	14.0	14.4	14.2	14.5	14.5	14.4
Kansas	10.9	11.3	10.7	11.3	11.5	11.7	12.0	12.2	12.8	12.6	13.3	13.3	13.5	13.5	13.6	14.2	14.4
North Carolina	13.5	13.6	13.7	14.2	13.9	14.3	14.4	14.2	14.5	14.5	14.8	14.5	14.7	14.4	14.7	14.8	14.3
Missouri	10.5	10.9	10.4	11.1	11.2	11.6	11.9	12.0	12.5	12.4	13.0	13.0	13.2	13.0	12.9	14.0	14.0
Virginia	11.7	11.9	11.9	12.5	12.5	12.8	13.0	12.8	13.1	13.3	13.6	13.4	13.8	13.8	14.1	14.4	14.0
Nevada	13.4	12.8	13.1	13.1	13.4	13.1	13.5	13.7	13.5	13.6	13.8	13.4	13.5	13.5	13.4	13.5	13.9
Delaware	12.4	12.5	12.3	12.9	13.0	13.1	13.0	13.5	13.6	13.6	14.3	14.3	14.9	15.4	14.2	14.4	13.5
Ohio	13.1	13.3	13.1	13.4	13.8	14.2	14.1	14.1	14.1	14.5	14.5	13.7	13.4	13.3	13.5	14.0	13.4
Washington	18.6	18.4	17.3	17.1	16.2	16.1	15.9	16.0	16.4	16.9	16.3	13.1	12.4	12.8	12.9	13.3	13.3
Oregon	15.0	14.9	14.3	14.6	14.4	14.4	14.9	14.7	14.0	14.0	14.7	13.2	12.9	12.7	12.7	12.8	13.0
Minnesota	10.7	11.0	10.5	10.8	11.1	11.6	11.7	11.7	11.8	11.8	12.1	12.2	12.4	12.5	12.5	12.9	13.0

Annual Per Capita Megawatt Hour Electricity Use*(cont.)																	
South Dakota	9.1	9.5	9.1	9.6	9.8	10.0	10.4	10.4	10.5	10.6	11.0	11.4	11.7	11.8	11.9	12.6	12.8
Florida	11.0	10.9	10.8	11.0	11.2	11.5	11.6	11.5	12.1	11.9	12.2	12.3	12.6	12.8	12.6	12.7	12.6
Wisconsin	10.0	10.3	10.1	10.5	10.8	11.2	11.2	11.4	11.7	11.9	12.1	12.1	12.3	12.3	12.3	12.7	12.5
USA	10.9	10.9	10.8	11.0	11.2	11.3	11.5	11.5	11.8	11.9	12.1	11.9	12.0	12.0	12.1	12.4	12.3
Arizona	11.3	11.0	11.1	10.9	11.1	11.0	11.4	11.5	11.4	11.5	11.8	11.7	11.5	11.5	11.7	11.7	11.9
Pennsylvania	9.6	9.7	9.7	9.9	10.1	10.3	10.4	10.5	10.6	10.5	10.9	11.0	11.4	11.4	11.6	12.0	11.8
Maryland	10.3	10.5	10.4	10.8	10.9	11.1	11.1	10.9	11.1	11.2	11.4	11.5	12.6	13.0	12.1	12.3	11.3
Illinois	9.7	10.1	9.6	10.0	10.2	10.5	10.4	10.4	10.7	10.7	10.8	10.9	11.0	10.8	11.0	11.4	11.1
New Mexico	9.1	9.1	9.0	9.1	9.4	9.5	9.8	9.9	10.1	10.0	10.3	10.2	10.4	10.3	10.5	10.8	11.0
Michigan	8.8	9.0	8.8	9.2	9.5	9.8	9.9	9.9	10.2	10.5	10.5	10.2	10.4	10.8	10.6	10.9	10.7
Colorado	9.3	9.3	9.1	9.1	9.3	9.2	9.5	9.5	9.6	9.6	9.9	10.0	10.2	10.2	10.1	10.3	10.4
Utah	8.9	8.9	9.0	8.9	9.1	9.2	9.6	9.6	9.6	9.9	10.3	10.1	10.0	10.1	10.1	10.0	10.2
Maine	9.4	9.2	9.3	9.6	9.3	9.3	9.4	9.5	9.2	9.4	9.5	9.5	8.8	9.2	9.4	9.4	9.3
Vermont	8.4	8.3	8.6	8.7	8.7	8.7	8.8	8.9	8.9	9.1	9.2	9.1	9.1	8.7	9.2	9.5	9.3
New Jersey	8.1	8.3	8.0	8.3	8.3	8.3	8.2	8.0	8.2	8.5	8.3	8.6	8.7	8.9	9.0	9.5	9.2
Alaska	7.7	7.5	7.4	7.3	7.5	7.7	7.9	7.9	8.2	8.5	8.5	8.6	8.5	8.5	8.7	8.8	9.1
Connecticut	8.3	8.2	8.2	8.2	8.5	8.4	8.5	8.5	8.6	8.8	8.8	8.9	9.0	9.2	9.3	9.5	9.1
Massachusetts	7.5	7.4	7.5	7.5	7.6	7.6	7.7	7.7	7.8	7.8	8.1	8.2	8.4	8.6	8.7	8.9	8.7
New Hampshire	8.1	7.9	8.0	7.8	7.8	7.8	7.8	7.7	7.7	8.1	8.2	8.2	8.2	8.6	8.5	8.6	8.5
Hawaii	7.5	7.5	7.5	7.4	7.5	7.7	7.8	7.7	7.6	7.8	8.0	8.0	8.1	8.4	8.6	8.3	8.3
New York	7.2	7.1	7.0	7.1	7.1	7.0	7.1	7.1	7.2	7.4	7.5	7.6	7.7	7.5	7.5	7.8	7.4
Rhode Island	6.4	6.3	6.3	6.5	6.5	6.5	6.5	6.6	6.7	6.9	6.9	7.0	7.1	7.3	7.4	7.5	7.3
California	7.0	6.8	6.9	6.7	6.8	6.7	6.8	7.0	7.2	7.0	7.2	7.2	6.7	6.9	7.1	7.1	7.3

*Sorted based on 2006 data.

Sources: U.S. Census Bureau and Energy Information Agency

Overall, Standard & Poor's views decoupling as positive for the credit quality of a utility. However, there are many other complex issues that regulators and utilities must consider, including unintended consequences, when establishing a decoupling rate mechanism. During the past 25 years, some companies have executed a successful energy-efficiency program (i.e., Northwest Natural Gas Co. and Pacific Gas and Electric Co.) through the use of decoupling, while others have failed (i.e., Puget Sound Energy Inc., and Central Maine Power Co.). As issues such as global warming continue to be part of the political landscape, increased focus on energy conservation appears inevitable, as well as the pressure for individual states to properly implement a decoupling mechanism to help facilitate conservation.