Special Comment

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Impact of Conservation on Gas Margins and Financial Stability in The Gas LDC Sector

Summary Opinion

- Moody's surveyed its 34 gas LDCs (local distribution companies) as to the impact of customer conservation on their volumes of consumption and gross margins and found that 18 could quantify the loss in per customer volume consumption.
- Only four of the 18 LDCs had ratemaking mechanisms in place to recover on a regular basis the lost margins due to conservation.
- Upon closer examination of certain gas utilities, it appears that customer gas consumption patterns are more responsive to changes in gas prices (price elasticity) than to any other single factor.
- Conservation is an important part in balancing the national gas supply and demand equation but under traditional regulatory frameworks in many states, few gas utilities have the incentive to actively encourage gas conservation and promote education in gas usage efficiencies among their customers.
- With the likelihood that gas prices will remain high and volatile, conservation is expected to become a more formidable force in influencing gas consumption in the residential and commercial customer segments going forward.
- Utility commissioners in various states differ as to their approach in allowing their gas utilities to recover lost margins on account of consumption variations resulting from conservation. Those commissions with the more supportive regulatory frameworks, tend to allow mechanisms for recoveries of revenues lost to conservation and have utilities with stronger financial profiles.
- More LDCs are becoming aware of the conservation factor and the impact that this has on their customers' gas usage and the utilities' profitability, and are considering applying for the appropriate rate design changes.
- Moody's believes that having utility rate designs that compensate the gas LDCs for margin losses caused by variations in gas consumption due to conservation as with variations due to weather, would serve to stabilize the utility's credit metrics and credit ratings. Utilities having these ratemaking mechanisms also tend to carry "A" credit ratings.

Introduction

The rising impact of conservation in determining customer gas consumption levels has been more insidious than other more noticeable variables, such as those caused by weather (see Moody's October 2002 Special Comment titled *Negative Rating Trend For Local Gas Distribution Companies: Impact of Diversification And Warm Weather*). It is curious however, how some state utility commissions recognized the potential impact of customer conservation on gas utility gross margins much earlier than other states, and made special provisions in their regulatory framework to accommodate for this variable. Perhaps some states are more attuned to the benefits of environmental conservation, have better regulatory support from their utility commissions or their customers are more cognizant of the need for compensating their utilities for their fixed costs. Whatever the reasons, it is clear that in some states the factor of conservation is fully understood and accepted into the gas utility rate-setting regime while in others the educational process is slower and more difficult due to historical differences between the utility on the one hand vs. public advocates and utility commission staff on the other, often viewing each other as traditional adversaries operating in a *zero-sum* environment.

What is noteworthy, is that with the growing awareness that natural gas supplies are becoming increasingly limited and that gas prices have been increasing in price and volatility in recent years, more LDCs are searching for reference points which might serve to yield them potential solutions to their problems of variable, and oftentimes, unpredictable customer consumption. If a utility's state commission is not sympathetic to the issue, the utility could draw examples from neighboring state commissions or reach across the country to other states, where the recognition of conservation and its impact on ratemaking mechanisms could have some relevant practical experiences that might be applicable to the utility's own regulatory jurisdiction. This is what appears to be happening as more gas LDCs confront a common issue that is only now rising to the level of national awareness.

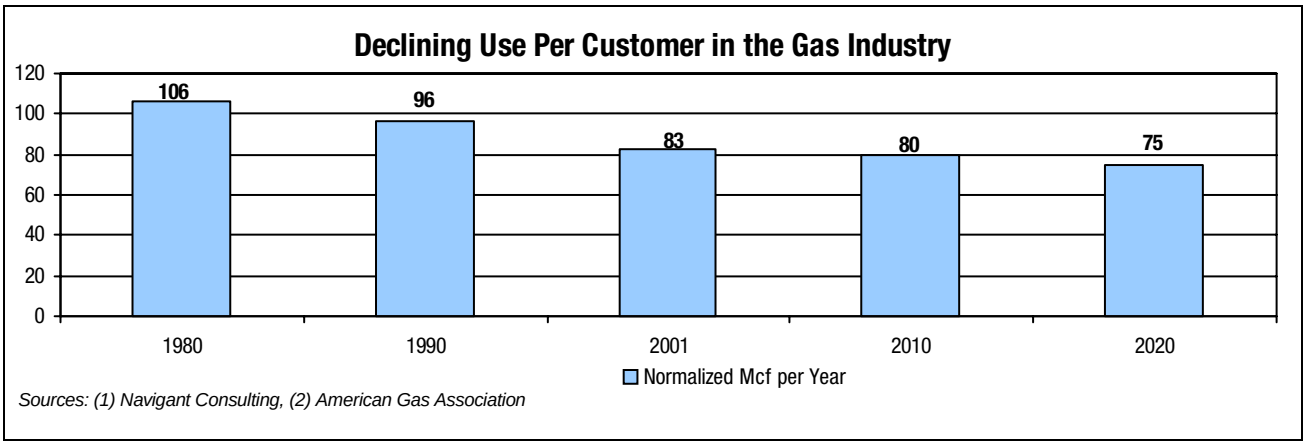
Also, as more LDCs and utility commissioners speak with one another, a greater appreciation for some of the forces affecting this segment of the energy industry develops and rate designs or the mechanisms for dealing with common issues become more accepted and might eventually become the norm. It is interesting to observe that an element of *cross-pollination* appears to be taking place where companies have become more willing to share their ideas and experiences with one another and state commissioners through the National Association of Regulatory Utility Commissioners (NARUC) are becoming more open to new approaches in dealing with their own regulatory issues in a land dominated by a *patch-work* of 50 independent state regulations. Nevertheless, the utilities that have established the appropriate ratemaking mechanisms in place first are usually the ones that fare the best in terms of financial earnings stability and credit strength, a status that appears to have been consciously achieved in cooperation with their regulators rather than being merely fortuitous or coincidental.

Conservation and Traditional Utility Rate Structures

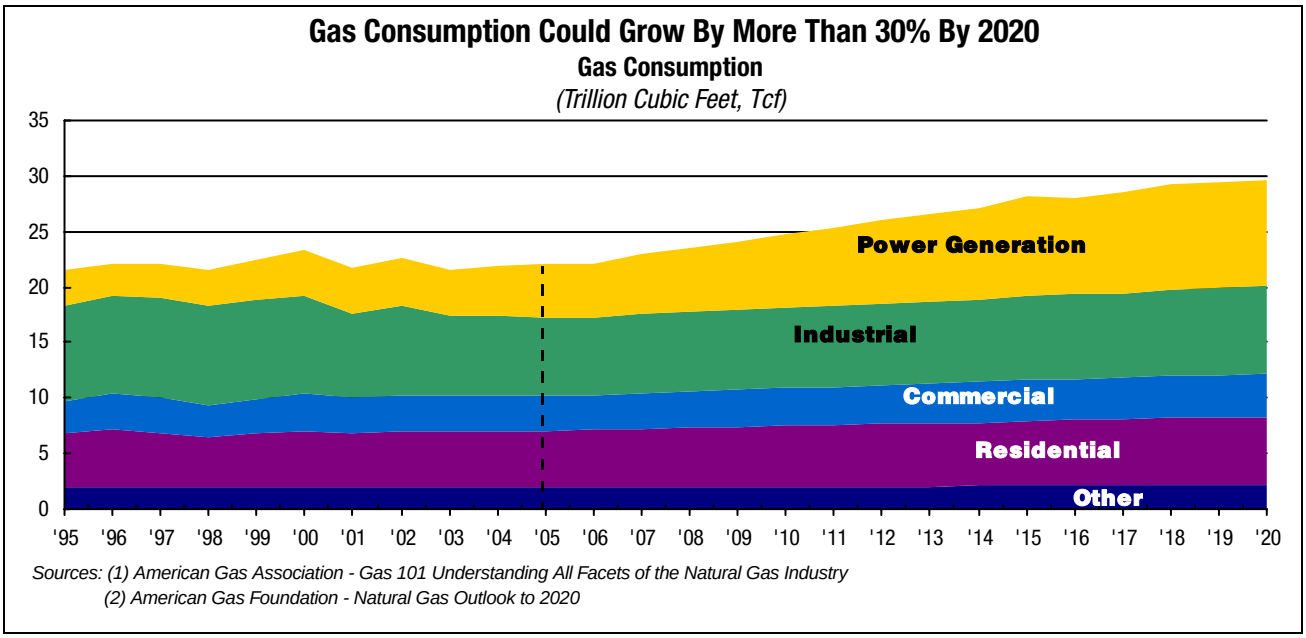
Moody's defines "conservation" as any technical advancement that improves home heating or the gas appliance efficiencies as well as the curtailment of consumption on account of high gas commodity prices. With this in mind, we surveyed our portfolio of 34 gas LDCs to inquire as to the possible impact that conservation might have on their customer gas consumption (primarily residential, as they comprise the largest class of firm customers for most LDCs compared with commercial or industrial customers, with the latter often subject to interruptible service) and the effect on their gas margins. Of the 34 LDCs, 18 were able to quantify the effect on their gas volumes and all 18 showed varying declining amounts and percentages in per customer consumption. However, only four had ratemaking mechanisms in place to recover these lost margins. The declines in per customer volumetric gas consumption ranged from 6% to 22% over a ten year period depending on the individual state. Interestingly, declines occurred whether LDCs were urban or rural[1], slow growing or rapidly growing.

The trend of declining use per customer in the gas industry also appears to be supported by a study done by the American Gas Association (AGA) released in September of 2004, as depicted in the following graph. This study suggests that the declining consumption trend is likely to continue for several more years, although our research indicates that some companies are more affected than others.

1. *Moody's defines urban as any city or town that is served by the LDC's main gas line in a contiguous flow of proximity for 100,000 or more customers. Any number less is considered rural.*



Interestingly enough, in his keynote address in January 2005, Laurence M. Downes, Chairman of the American Gas Association, stated that continued energy efficiency is an important factor in helping balance the limited accessible supply of natural gas in the United States along with the rise in gas demand on the part of electric power generators, industrial and commercial users and the need for increased housing in the country.[2]



However, in the July 2004 Joint Statement made by the AGA and the National Resources Defense Council (NRDC), a nationally recognized environmental group based in San Francisco, admission is made to a fundamental flaw in the way gas utility rates are traditionally structured in many states: namely, that the high fixed costs of operating a gas distribution system are only fully recovered when customers consume the gas volumes upon which their traditional rates are designed. If there is little or no consumption, the LDC is unable to recover its costs. Under this scenario, gas companies have no desire to encourage energy conservation or promote gas efficiency education among consumers. This conflict is stated more succinctly by Jon Stoltz, Senior Vice President of Regulatory and Gas Supply at Cascade Natural Gas Corporation in Seattle, Washington, when he said, "Our financial responsibilities and corporate citizenship responsibilities are at odds. The utility is forced to choose between conservation and profitability."[3]

One solution proposed by the Joint Statement of the AGA and the NRDC requested the National Association of Regulatory Utility Commissioners to consider and support any mechanism that uses automatic rate true-ups to ensure

2. *Investment Outlook for the Natural Gas Industry,* presented by Laurence M. Downes before the New York Society of Security Analysts, January 27, 2005, slide 7, "Continued Energy Efficiency is Important."
3. "Decoupling Through A Payment Stabilization Mechanism," White Paper by John Stoltz, April 21, 2005, p.1

that a utility's recovery of authorized fixed costs are not dependent on variations in gas sales. These ratemaking mechanisms are sometimes referred to as "decoupling," "conservation tariffs" or "conservation margin trackers."

We should note that this conservation problem is particular to the gas and not the electric power industry sector, where average kilowatt-hour of usage per customer has been generally rising over time. This may necessitate some careful explanations with regulators as they attempt to understand some of the differences between the gas and the electric power sectors.

In an attempt to better appreciate some of the decoupling mechanisms currently in use, Moody's considered three examples of how gas utilities were dealing with the impact of conservation. The first example is that of Southwest Gas Corporation (Baa2 senior unsecured, negative outlook) based in Las Vegas, Nevada; the second, Northwest Natural Gas Company (A3 senior unsecured, stable outlook) based in Portland, Oregon; the third, Southern California Gas Company (A2 senior unsecured, stable outlook) based in Los Angeles, California.

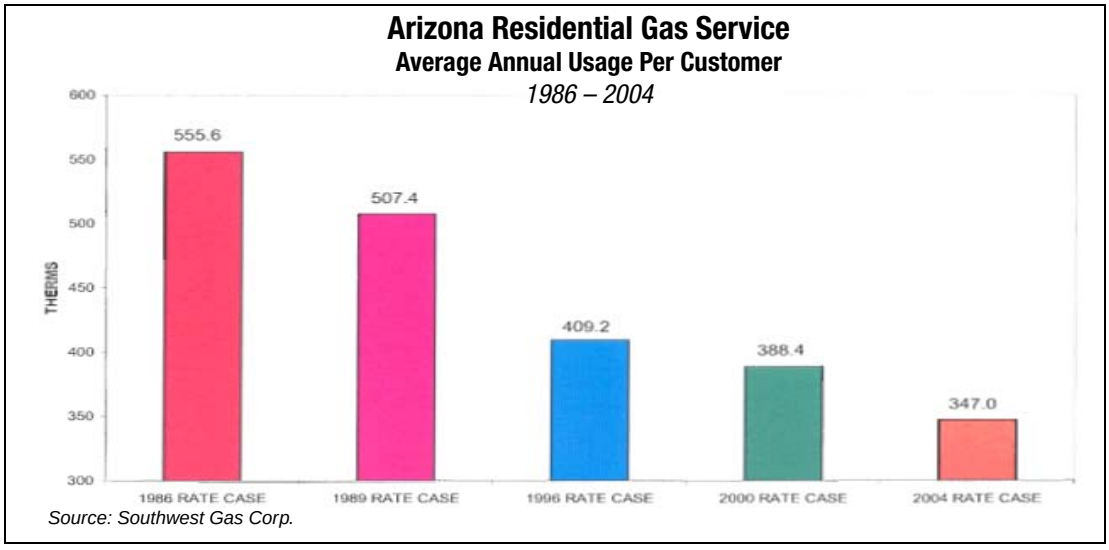
Southwest Gas Corporation

In February of 2004, Moody's changed the outlook on Southwest Gas Corporation to "negative" from "stable." The company was already one of the fastest growing LDCs in the country with a customer base expanding at the rate of 5.4%p.a. According to their CEO, Jeffrey W. Shaw, the company was growing at the equivalent rate of one gas LDC each year. This rapid growth has resulted in regulatory lag, as capital expenditure cost recoveries could not keep up with up-front growth expenditures and led to increased financial leverage.

In addition, the company had announced that 2003 earnings were lower on account of warmer than normal weather for two consecutive years with 2003 being one of the warmest in over 100 years. All these factors impacted the company at a time when it had no conservation margin trackers or weather normalization mechanisms in place. Subsequently, it was able to gain a conservation margin tracker in California, but this only covered about 10% of its service territory, leaving the remaining 90% of gas margins exposed to variable gas consumption.

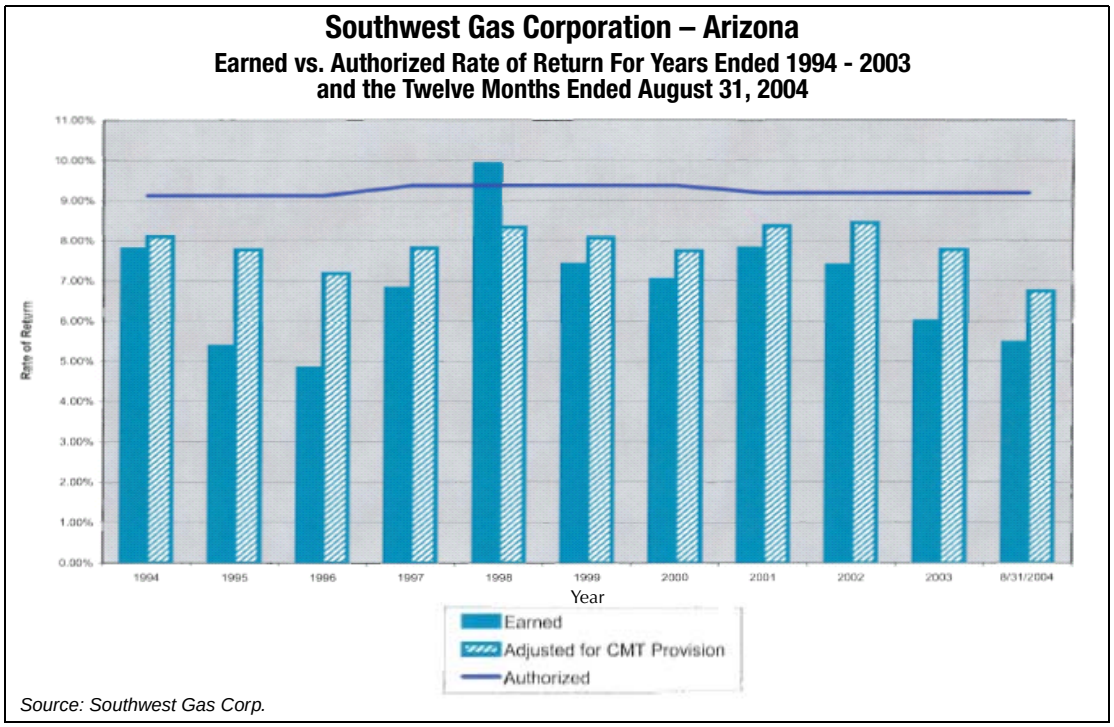
In December of 2004, Southwest Gas decided to file a new rate case in Arizona which accounts for about 55% of its gas margins. In this rate case, a new rate design was introduced in Arizona for the first time in the form of a conservation margin tracker that would capture declining gas volumes on account of both conservation and weather variables when compared against a baseline consumption level.

The mechanics of this rate design appear to be straightforward. The company first establishes a revenue requirement that would cover all costs of systems operation (excluding gas commodity costs), and then it apportions this number among the residential class of customers by dividing by the total volume of gas sold to each residential customer. As new customers are added onto the gas distribution system, they also help absorb the costs of operation.



The first graph for Southwest Gas shows a steady 37.5% decline in annual per customer usage of gas over 18 years, or 2.1% p.a., with the consumption data weather-normalized. What is noteworthy is that despite the rapid growth in customer base in Arizona (Phoenix being one of the fastest growing cities in the country), per customer consumption is still falling.

The second graph for Southwest Gas demonstrates an inability to earn its authorized rate of return in Arizona (as depicted by the solid bars), which lie below the approximately 9%authorized overall rates of return (depicted by the horizontal line near the top), equivalent to an 11% return on equity. The gap is closed somewhat by the addition of a new conservation margin tracker (CMT) as proposed by the company in its new rate case for Arizona, but even then it falls short of earning the full authorized rate of return, a shortfall that needs to be met by other means such as exercising tighter standards when considering new expansions into more remote desert areas of the state. The spike in realized earnings in 1998 represents an unusual year when winter weather was 27% colder than normal, a windfall which the company is willing to forgo in exchange for more stable earnings over time.



Source: Southwest Gas Corp.

In its Arizona rate filing, Southwest Gas also anticipates the support of the Southwest Energy Efficiency Project (SWEEP), a regional environmental group promoting energy efficiency in the southwestern states including in Arizona. Environmental groups such as SWEEP add an independent voice in support of energy conservation and they seem to acknowledge the need for gas utilities to obtain a fair rate of return on their investments in order to accomplish their environmental objectives.

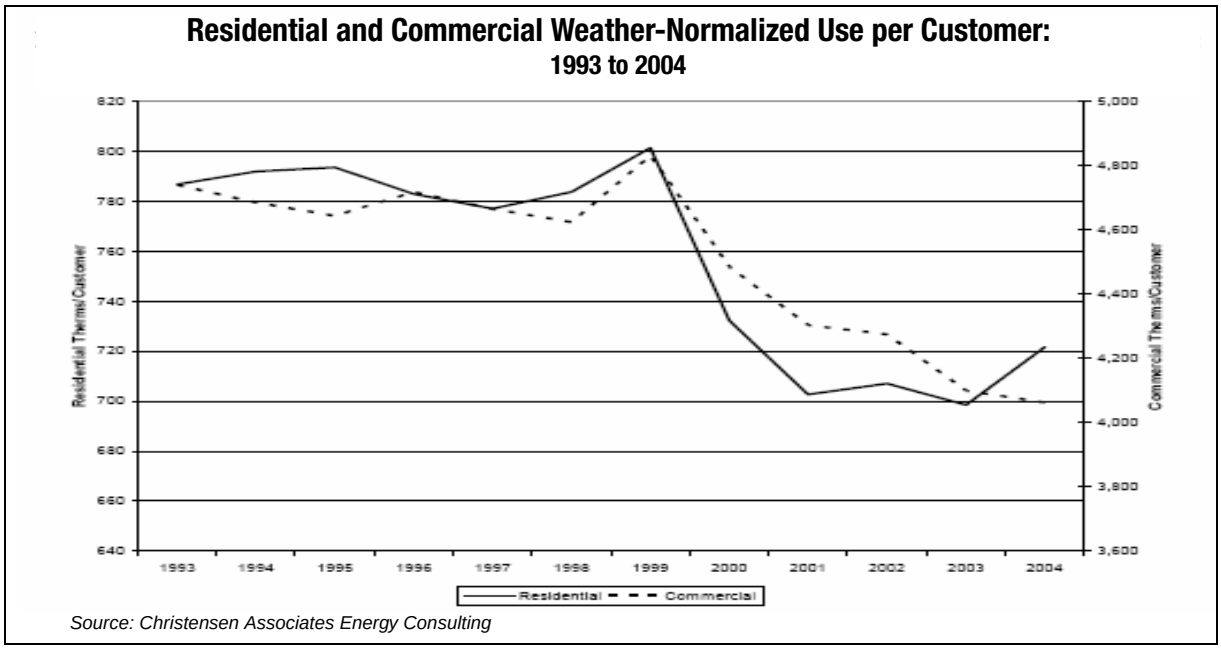
Northwest Natural Gas Company

Northwest Natural had applied for a full decoupling mechanism covering both conservation and weather factors but only obtained a conservation tariff or Distribution Margin Normalization (DMN) from the Oregon Public Utility Commission (PUC) in 2002. Its conservation tariff was granted for a limited period of three years and expires in September of 2005. In 2003, the company applied for and obtained a separate five-year weather normalization clause that operates independently of the DMN. As a condition for its DMN renewal, Northwest Natural was required to have an independent study done to determine the relative success of the rate design, and this task fell upon Christensen Associates Energy Consulting, from whom we obtained certain charts for this report.

The DMN has two essential components, 1) a price elasticity adjustment to a predetermined baseline of consumption and 2) a deferral account that captures 90% of the month-to-month deviations between actual and expected volumes. The deferred amounts are treated as adjustments to be refunded or collected in the following year.

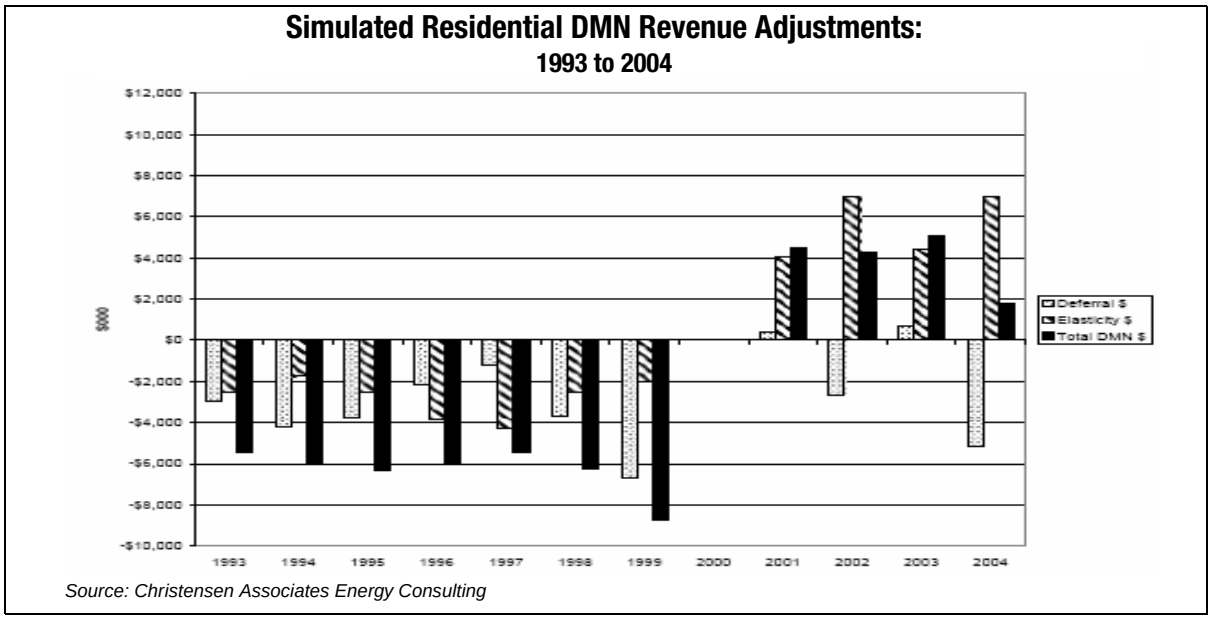
The result is that Northwest Natural's conservation tariff was able to realize an additional $3.5 million in 2003 gross margins and another $1 million in 2004 gross margins. The company also received the endorsement of the NRDC in its rate design application, which served as an independent advocate for the rate design mechanism in support for its conservation tariff application.

In the first chart for Northwest Natural, we note that both residential and commercial usage per customer were fairly constant over the 1990's when they take a sudden and sharp decline in 1999 through 2001, following a much publicized rise in natural gas prices. The slight recovery in late 2003 on the part of residential customers is due to a temporary period of declining gas prices. This chart demonstrates how in the case of Northwest Natural, customer usage is inversely correlated with changes in gas prices.



Source: Christensen Associates Energy Consulting

The second chart for Northwest Natural shows a simulated run using 2000 as a base year for the DMN, with bars above the "zero" line representing collections made by the company for conservation adjustments and bars falling below the "zero" line representing amounts to be refunded to customers. Focusing on the right side of the graph during the years when the DMN was in effect, we note that the price elasticity component represented by the cross-hatch bars are a more significant factor in the adjustment mechanism than the gray-shaded bars representing the deferral component of the DMN.



Source: Christensen Associates Energy Consulting

Southern California Gas Company

SoCal Gas is by far the largest pure gas LDC in our portfolio of 34. It also operates in a state that has one of the most progressive and supportive gas utility regulatory frameworks in the country. For example, unlike most states, California allows the use of monthly purchase gas adjustments (PGA) using short-term forecasted gas prices. When considering utility rate applications from its gas utilities, it applies a 12 month forward test period for cost recoveries, thereby helping to reduce regulatory lag. Finally, it has for many years supported the use of 100% gas balancing accounts, whereby gas LDCs are able to recover in gross margins what they lose on account of weather, conservation or other variables affecting customer use of natural gas.

In January of each year, SoCalGas sets out to recover all costs allowed by the California PUC during that year, plus any under collections or over collections of revenues from the previous year.

The total revenue requirement is divided by the forecast of sales by customer class during the year. Actual revenues are tracked against authorized revenues in balancing accounts during the year. At the end of the year, the under or over collection of revenues due to conservation, weather variation, or other conditions are then added to the subsequent year's revenue requirement to set new rates for the following year. The result is that gas sales variations do not affect net profitability of the utility.

A sample schedule of SocalGas' balancing accounts for the year 2004 appears in the table below. Note that the company finds itself with an undercollection status for 2004 of about $42 million in the lower right bottom column. This sum requires a 3% increase in system total rates for 2005.

SoCal Gas Present and Proposed Regulatory Account Balances (M$)

Account Name	4/01/04 Amortization			Proposed 01/01/05 Amortization			Proposed Change		
	Core	Noncore	Total System	Core	Noncore	Total System	Core	Noncore	Total System
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Affiliate Transfer Fee Memorandum Account (ATFA)	(47)	(6)	(53)	0	0	0	47	6	53
2. Aliso/Goleta Tracking Account (AGTA)	0	23	23	0	107	107	0	84	84
3. Brokerage Fee Account (BFA)	0	5	5	0	131	131	0	126	126
4. Catastrophic Event Memorandum Account (Northridge)	(1)	(0)	(1)	0	0	0		0	1
5. Core Fixed Cost Account (CFCA) [2]	(70,929)	0	(70,929)	(58,869)	0	(58,869)	12,060	0	12,060
6. Economic Practicality Shortfall Memorandum Account (EPSMA)	0	(13)	(13)	0	187	187	0	199	199
7. El Paso Settlement Proceeds Memo Acct (EPSPMA)	0	0	0	(218)	0	(218)	(218)	0	(218
8. El Paso Turned-Back Capacity Bal Acct (EPTCBA)	4,111	7,374	11,486	6,049	10,850	16,900	1,938	3,476	5,414
9. Enhanced Oil Recovery Account (EORA)	7,562	771	8,333	9,005	918	9,922	1,442	147	1,589
10. Hazardous Substance Cost-Recovery Account (HSCRA)	4,271	7,661	11,932	4,609	8,267	12,877	338	607	945
11. Interstate Transition Cost Surcharge Account (ITCSA)	0	(13,666)	(13,666)	0	18,667	18,667	0	32,332	32,332
12. Intervenor Award Memorandum Account (IAMA)	88	157	245	12	21	32	(76)	(137)	(213
13. Montebello True-Up Tracking Account (MTTA)	18,554	7,952	26,506	0	0	0	(18,554)	(7,952)	(26,506
14. Natural Gas Vehicle Account (NGVA)	(714)	(979)	(1,693)	(2,026)	(2,776)	(4,802)	(1,312)	(1,798)	(3,109
15. Noncore Fixed Cost Account (NFCA)	0	17,007	17,007	0	18,621	18,621	0	1,614	1,614
16. Noncore Fixed Costs Tracking Account (CCSI subaccount)	0	(7)	(7)	0	(95)	(95)	0	(88)	(88
17. Noncore Fixed Costs Tracking Account (MPO subaccount)	0	(1)	(1)	0	0	0	0	1	1
18. Noncore Storage Balancing Account (NSBA)	200	359	559	102	183	285	(98)	(176)	(274
19. PITCO/POPCO Transition Cost Account (PPTCA)	(217)	(389)	(606)	(518)	(929)	(1,447)	(301)	(540)	(841
20. Post-Retirement Benefits Other Than Pensions (PBOPS)	(20,410)	(2,555)	(22,965)	(10)	(1)	(11)	20,400	2,554	22,954
21. Research, Development & Demonstration Expense Account (RDDEA)	(0)	(0)	(0)	0	0	0	0	0	0
22. Reseach Royalty Memorandum Account (RRMA)	(22)	(3)	(24)	(44)	(5)	(49)	(22)	(3)	(25
23. Self-Generation Program Balancing Account (SGPBA)	6,807	12,208	19,015	4,375	7,847	12,222	(2,432)	(4,361)	(6,793
24. Wheeler Ridge Firm Access Charge Memorandum Account (WRFACMA)	(3,062)	(383)	(3,446)	(855)	(107)	(962)	2,207	276	2,484
25. **Balancing Account Subtotal**	(53,809)	35,517	(18,292)	(38,387)	61,884	23,497	15,422	26,367	41,789

Notes:

1. Balances shown include franchise fees and uncollectibles expenses.

2. Includes the Baseline Memorandum Account (BMA)

Source: Southern California Gas Company

The advantage of this procedure is that it is automatic and tends to work like "clockwork." In the absence of protest, after 40 days of presenting its annual Advising Letter of the status of its balancing accounts to the California Public Utility Commission, the adjusted rates go into effect. SoCalGas has been successfully using this methodology for margin recovery for over 20 years.

Another LDC that has a similar balancing account mechanism in place for gas system cost recovery is Alabama Gas Corporation (Alagasco, A1 senior unsecured, stable outlook). Alagasco's "rate stabilization and equalization" enables the utility to earn each year within a band of its allowed rates of return in the range of 13% return on equity. This formulaic approach that has been in place in Alabama for over 20 years is just only now being adopted in states such as South Carolina.

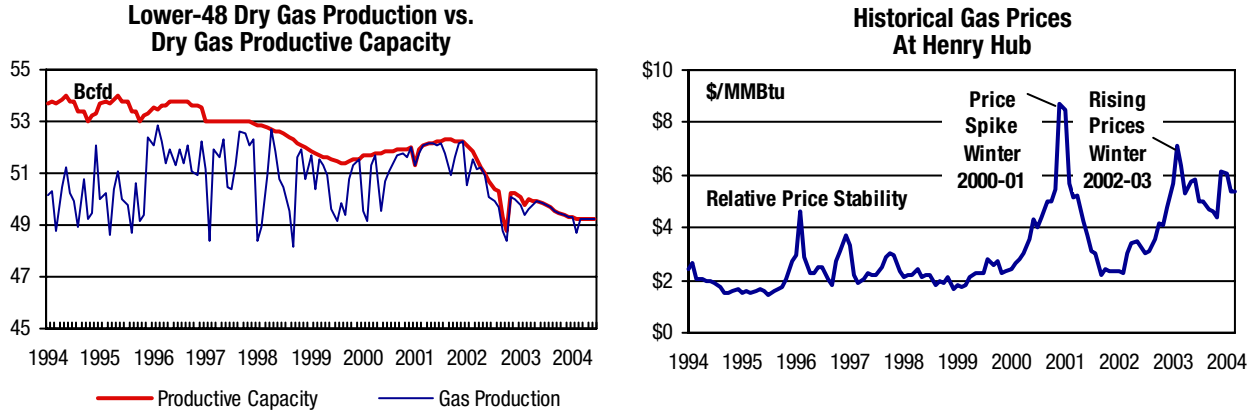
Conclusion

While declining per customer usage of gas has been occurring for many years in many parts of the country, only a handful of the 34 LDCs in our gas portfolio have ratemaking mechanisms in place to recover the utility's fixed costs on a consistent and comprehensive basis. These companies also tend to carry "A" credit ratings.

In reviewing our three examples, we observe that these mechanisms were achieved through careful coordination with interveners and with the support of environmental groups.

We expect that the decline in per customer gas usage at the residential and commercial level is a national phenomenon that is likely to persist as gas becomes more expensive and demand outstrips available supply. The charts below from the AGA and the Energy and Environmental Analysis suggests that beginning in late 1999 gas prices have become decidedly more volatile and show a generally rising trend. As noted in the case of Northwest Natural, customers are more likely to curtail their gas usage under conditions of rising gas prices.

Tightening Demand And Supply Curves = Price Volatility



Sources: (1) American Gas Association -Gas 101 Understanding All Facets of the Natural Gas Industry, (2) Energy and Environmental Analysis (EEA)

In coming months, we anticipate that more gas LDCs will be applying for these decoupling mechanisms either as stand-alone conservation tariffs as done by NWNatural or as part of an overall balancing account approach as done by SoCalGas, taking both conservation and weather factors into consideration. Companies that have announced their intention or are in the process of applying for these new ratemaking mechanisms include Cascade Natural Gas in Washington State, Piedmont Natural Gas in North Carolina and Washington Gas Light in their Maryland jurisdiction.

Finally, Moody's believes that having utility rate designs that compensate the gas LDCs for margins lost on account of variations in conservation as with variations in weather, would serve to stabilize a utility's credit metrics and credit ratings.

Related Research

Special Comments

Comparative ROE Attributes of US Local Gas Distribution Companies, July 2004 #87301

Negative Rating Trend For Local Gas Companies: Impact of Diversification And Warm Weather, October 2002, #76344

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