

Exhibits

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the :
Application of Duke Energy:
Ohio, Inc., for an :
Increase in Gas Rates. :

Case No. 07-589-GA-AIR

In the Matter of the :
Application of Duke Energy:
Ohio, Inc., for Approval :
of an Alternative Rate :
Plan for its Gas :
Distribution Service. :

Case No. 07-590-GA-ALT

In the Matter of the :
Application of Duke Energy:
Ohio, Inc., for Approval :
to Change Accounting :
Methods. :

Case No. 07-591-GA-AAM

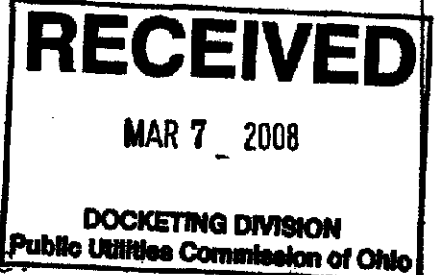
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PROCEEDINGS

before Mr. Richard Bulgrin and Ms. Greta See,
Attorney Examiners, at the Public Utilities
Commission of Ohio, 180 East Broad Street, Room 11-C,
Columbus, Ohio, called at 9 a.m. on Thursday,
March 6, 2008.

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07-589-GA-AIR
07-590-GA-ALT
Case Number 07-591-GA-AAM

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EXHIBIT

COMPANY Exhibit
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A Consumer Advocate's View: Decoupling and Energy Efficiency PUBLIC UTILITIES FORTNIGHTLY June, 2006

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June, 2006

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HEADLINE: A Consumer Advocate's View: Decoupling and Energy Efficiency

BYLINE: BY JANINE MIGDEN-OSTRANDER; Janine Migden-Ostrander is the consumers' counsel for the state of Ohio. Contact her at 614-466-8574. The author expresses gratitude for the expertise and assistance of Wilson Gonzalez, senior regulatory analyst at the Office of the Ohio Consumers' Counsel. His work has helped further the agency's vision of producing benefits for residential utility consumers through energy-efficiency efforts.

HIGHLIGHT:

Two sides of the same coin.

BODY:

When I became the Consumers' Counsel for the state of Ohio in April 2004, natural-gas prices were hovering between \$ 7/Mcf and \$ 8/Mcf (thousand cubic feet). In the next year and a half, Ohioans saw gas prices double, peaking at a residential statewide average of \$ 16.89/Mcf in the month of September 2005. n1 The latter reflects the exacerbation of prices, already high, by hurricanes Katrina and Rita in the gulf region. Residential customers across Ohio struggled to pay their gas bills. Particularly hard hit were customers in the 150th to 250th percentile of the poverty guideline, for whom no federal or state programs were available. These customers, who traditionally struggle, but manage nevertheless to pay their bills and make ends meet, found themselves overwhelmed.

----- Footnotes -----

n1 See U.S. EIA monthly residential gas prices,
http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_a_EPGO_PRS_DMcf_m.htm.

----- End Footnotes -----

Prior to the upsurge in natural-gas prices in 2004, energy bills for Ohio's low-income customers were \$ 740 million more than what is generally accepted as affordable. n2 To say we have a problem on our hands is an understatement.

----- Footnotes -----

n2 From "Energy Efficiency: Ohio's Best Defense Against High Natural Gas Prices," Midwest Energy Efficiency Alliance (MEEA), 2006. Original low-income data from Fisher, Sheehan, and Colton, "On the Brink: 2005, The Home Energy Affordability Gap," Belmont, Mass. Affordability is at the 185 percent of poverty definition. See <http://www.fsconline.com/work/heag/05/states/ohio.pdf>.

----- End Footnotes -----

Although prices might moderate after the Gulf Coast recovers from the hurricanes, the \$ 3/Mcf to \$ 5/Mcf lower prices that customers historically had depended upon in the 1990s probably are gone. n3 Given this, policymakers must search for long-term solutions that maintain the affordability of natural-gas service now and in the long run. Supply options such as increased production from drilling and the importation of liquefied natural gas (LNG) are at least five years away, and there is no guarantee that once available, they will in fact reduce the overall price of gas. n4 These options come to consumers with considerable cost. For example, LNG will be priced on the world market much like oil is today.

----- Footnotes -----

n3 City Gate prices in Ohio ranged from \$ 3/Mcf to \$ 5/Mcf in the 1990s, see U.S. EIA, <http://tonto.eia.doe.gov/dnav/ng/hist/n3050oh3a.htm>.
n4 For example, EIA's *Annual Energy Outlook 2006* (with projections through 2030) indicates that the future will bring increases in energy demand while Alaskan natural-gas production (if authorized), and production from the lower 48 states will not offset the impacts of resource depletion. Another report by the American Gas Association, *Evaluating U.S. Natural Gas Production, 2006*, concurs with EIA by saying that "the net result is that today even record numbers of annual well completions only keep up with the annual declines in more traditional producing wells and production on the whole remains flat."

----- End Footnotes -----

Another concern is the long-term availability of supplies to customers. Demand for natural gas in the United States is increasing steadily. In 1990, the United States consumed 19 Tcf (trillion cubic feet). This is expected to escalate to 27 Tcf by 2025. n5 By 2010, naturalgas-fired facilities will comprise 24 percent of the electric generation fleet in the former East Central Area Reliability Council (ECAR) region as opposed to the 11 percent level it was at in 2000.

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n5 U.S. EIA, *Annual Energy Outlook 2006*, p. 5.

----- End Footnotes -----

Moreover, many large industrial customers use dual fuel, switching from oil to natural gas when the oil prices rise. Inasmuch as oil prices have climbed higher than natural-gas prices, industrial customers periodically have availed themselves of natural gas. All this has added to

the demand.

A further concern is how the financial markets adversely have affected the prices that consumers are paying. There is a significant disparity between the cost of gas produced at the wellhead and the Henry Hub index price, for example, and the price that natural-gas companies and suppliers pay. Moreover, the days of supply portfolios with long-term contracts unfortunately are no longer with us.

On the supply side, the American Gas Association estimates only 63 years of economically recoverable supplies left in the United States. n6 As the United States turns its attention to foreign sources of gas and the importation of liquefied natural gas from countries like Algeria and Venezuela, we cannot ignore that we will be competing with emerging countries such as China and India for those supplies in a global market.

----- Footnotes -----

n6 American Gas Association Fact Sheet, "Snapshot of U.S. Natural Gas Production," May 2005.

----- End Footnotes-----

The purpose of this article is not to focus on the national security and energy independence issues that arise from these circumstances, but rather to examine what we can do in the United States to ensure affordable and reliable supplies for residential consumers in both the short and long term.

Given this serious backdrop of events, how do we go about maintaining adequate and affordable supplies now and in the future? Looking only at the short term without planning for the future will leave us in a quandary down the road. We should not leave a legacy of energy problems for our children, but rather a legacy of energy solutions.

Long-Term Solution

Energy efficiency is the best short-term solution. By reducing the demand for natural gas on a regional basis we can accomplish two objectives. First, energyefficiency programs provide customers with more tools to control their naturalgas use and consequently reduce their bills. Second, to the extent that we can inculcate the region with a sense of purpose in terms of engaging in serious energy efficiency, we can reduce the overall price for natural gas that customers must pay. For example, a recent study by the American Council for an Energy-Efficient Economy (ACEEE) -- which the Office of the Ohio Consumers' Counsel sponsored along with a number of other Midwest state agencies -- indicates that a 1 percent reduction in demand over a five-year period in the Midwest could result in a reduction in price in the 10 to 20 percent range. n7

----- Footnotes -----

n7 Kushler, M., D. York, and P. Wine. *Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest*, Washington, D.C.: American Council for an Energy-Efficient Economy, 2005.

----- End Footnotes-----

Moreover, energy efficiency also is part of the long-term solution simply because any sustained reduction in demand benefits customers. n8 The Midwest Natural Gas Initiative is a commitment from government agencies in eight Midwest states that have pledged to reduce demand by 1 percent per year over five years. If successful, all customers from this eight-state region would enjoy lower prices (in the 10 percent to 20 percent range) than would have been the case without the reductions in demand due to energy efficiency. n9

----- Footnotes -----

n8 Energy-efficient appliances and home insulation have lifetimes of 15 to 30 years.

n9 Elsewhere, John Baldacci, Maine governor and chairman of the Coalition of Northeastern Governors, is asking other governors in New England to commit to a conservation and energy-efficiency effort aimed at cutting New England's natural-gas use 5 percent over the next 6 years. California's adopted natural-gas goals for gas efficiency programs range from \$ 50 million in 2004 to \$ 150 million by 2012.

----- End Footnotes -----

The utilities are a logical choice for promoting energy-efficiency programs because of their regular contact with customers through monthly billings, inserts, and other means. Nevertheless, it must be recognized that like any business, the natural-gas companies are interested in selling *more* product -- not less. Only an appropriate rate structure can provide an incentive to utilities for a program that is intuitively inconsistent with their shareholders' interests.

Decoupling Option

Revenue decoupling -- a regulatory mechanism that separates sales from revenues so that a utility is economically neutral as to the level of gas sold -- can remove the barriers to utility participation in energy efficiency. Under revenue decoupling, the regulatory commission establishes a utility's revenue requirements to ensure that the company can recover its fixed costs plus a reasonable return.

Several approaches can accomplish this objective. n10 For example, in a revenue-per-customer decoupling approach, the revenue requirement is then transferred into a revenue-per-customer amount. If, at the end of the year, the company under-collects on its weather-normalized, per-customer revenues, a surcharge is added to the customer's bill to make up the difference. This approach protects customers from compensating a utility for lost revenues associated with a warm winter, or with customers leaving a service territory. It also maintains the utility incentive for economic development.

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n10 See Eto, J., S. Stoft, and T. Belden. *The Theory and Practice of Decoupling*, Berkeley, Calif.: Lawrence Berkeley Laboratory. LBL34555, 1993. Another way of decoupling is by going to a **straight-fixed variable** rate design, where the fixed monthly charge is raised to recover all fixed costs. This approach is politically challenging as it is perceived as a major rate increase and will engender consumer opposition. Moreover, this approach would tend to discourage conservation due to the lower variable charge.

----- End Footnotes -----

Upon hearing about revenue decoupling, a typical -- and understandable -- customer reaction is, "You mean I am going to pay the utility for *not* using gas?" Yes, but that decoupling creates a "win-win" solution because the customer still saves money and the utility still has the opportunity to recoup its revenue requirements. Striking a balance between customers and the naturalgas companies is important in making these programs sustainable, and is the best way to ensure customer savings in the long run (see Table 1).

TABLE 1 SIMPLE DECOUPLING + DSM EXAMPLE

| | | % Change |
|---|--------------|-------------|
| Average Annual Customer Use (Therms) | 1,000 | |
| Number of Customers | 10,000 | |
| Target Sales (Therms) | 10,000,000 | |
| Actual Sales (Therms) | 9,500,000 | |
| Shortfall (Therms) | 500,000 | -5.0 |
| Shortfall Due to DSM (Therms) | 250,000 | |
| Distribution Margin (\$ per Therm) | \$ 0.30 | |
| Purchased Gas (\$ per Therm) | \$ 0.70 | |
| Total Cost per Therm (I) | \$ 1.00 | |
| Targeted Earnings | \$ 3,000,000 | |
| Actual Earnings | \$ 2,850,000 | |
| Dollar Shortfall | \$ 150,000 | |
| Energy Efficiency Spending at 3% Dist. Sales Rev. | \$ 90,000 | |
| Per Unit Cost (DSM Rider) | \$ 0.00947 | |
| DSM Related Savings (I) | \$ 175,000 | |
| Adjusted Distribution Margin Delta | 0.0158 | |
| Adjusted Distribution Margin Delta + DSM Rider | \$ 0.02526 | |
| Adjusted Distribution Margin (including DSM) | \$ 0.325 | 8.4 |
| Adjusted Total Cost of Gas | \$ 1.025 | 2.5 |
| Customer Savings on Purchased Gas (I) | \$ 350,000 | |
| Per Customer Savings on Purchased Gas (I) | \$ 35 | |
| Customer Costs on Increased Dist. Margin (I) | \$ 240,000 | |
| Per Customer Costs on Increased Dist. Margin (I) | \$ 24 | |
| Net Customer Savings | \$ 110,000 | |
| Per Customer Net Savings | \$ 11 | |
| 5% decrease in Commodity Cost From Reduced Demand | 0.665 | |
| New Customer Savings on Purchased Gas | \$ 0.035 | |
| Total Customer Savings from Reduced Demand | \$ 332,500 | |
| Grand Total Net Savings | \$ 442,500 | |
| Grand Total Net Savings per customer | \$ 44.25 | |

Table 1 is premised on the fact that we are compensating a natural-gas company only for its lost revenues associated with its distribution service that already have been approved by the state commission. By approving a decoupling mechanism, the utilities gain a better opportunity to recover their commission-authorized revenues and nothing more. Decoupling does not increase rates above that already established revenue level. n11 Moreover, the distribution service under today's rates represents approximately only 20 to 30 percent of a customer's whole bill, because in most states, residential customers either can choose their naturalgas supplier, or the gas cost is a straight pass-through on which the company is not supposed to make a profit. Thus, while customers are paying essentially the same amount in

revenues for distribution services (20 to 30 percent), they are saving on 70 to 80 percent of the bill through reduced supply costs. In the chart, the average customer who participates in energy efficiency will save \$ 44.25 a year, due both to reductions in the customers consumption and an estimate of a conservative 5 percent decrease in commodity costs as a result of regional participation in energy efficiency.

----- Footnotes -----

n11 This example adds utility energy efficiency expenditures to an example contained in Ken Costello's presentation to the NARUC Natural Gas Subcommittee, "Revenue Decoupling for Natural Gas Utilities: Issues and Observations," NRRI, Jan. 13, 2006.

----- End Footnotes----- **Distribution Benefits**

Decoupling benefits the natural-gas distribution companies by reducing their risk of not recovering their revenue requirements. It only should be permitted as part of a comprehensive energy efficiency program in which there is a commitment to spend at least 1 to 2 percent of revenues on hard-wire energy-efficiency programs.

No more than 5 to 10 percent of an energy-efficiency budget should be spent on customer education. Customers understand that with the high cost of gas, they need to conserve. Advertising dollars should not be spent to remind customers to turn down the thermostat and put on an extra sweater. Instead, those dollars should promote the actual programs of which customers can take advantage. Publicize the specific rebates -- or whatever the program might entail -- for purchasing energy-efficient appliances, and customers will respond.

For consumer advocates to guarantee a distribution company's revenue requirements, a robust energy-efficiency program using programs with benefits that exceed their costs (the total resource cost [TRC] test) must be in place. This is the *quid pro quo*. Programs that provide weatherization, especially those that target low-income sectors of the residential population and that provide rebates to customers who purchase Energy Star products, might be especially beneficial. The goal is to present customers with an array of costeffective programs that provide as many customers as possible with the opportunity to participate.

These programs should be selected with input from consumer groups, and should be monitored and evaluated effectively to ensure they provide the anticipated benefits. This will allow decision makers to increase funding for successful programs and pull back or modify disappointing ones.

Minimum Target

In structuring the decoupling mechanism, consumer protections must be built in so as to mitigate or control potential distribution rate increases that result from decreased consumption or sales. For example, a cap on the level of annual increases could be imposed with or without the option to carry over any uncollected revenue shortfall the following year. Washington and Idaho have caps on the whole bill set at 2 percent and 3 percent, respectively, but the cap could be designed for just the distribution portion of the bill as well. In that case, the cap probably would be higher because only 20 to 30 percent of the bill is affected by the increase. Another option is a price elasticity of demand adjustment to account for the fact that not all reductions in demand are the result of energy-efficiency programs. Other factors such as price-induced voluntary conservation can produce revenue adjustments. An elasticity adjustment could discount a utility's recovery of lost revenues by

10 to 30 percent.

Energy efficiency simply makes sense. The ACEEE study estimates that participating Midwest customers could save \$ 2.2 billion on gas and electric bills over the next five years if aggressive energy efficiency programs are put into effect. All customers would save an additional \$ 760 million through reduced prices. These programs collectively could create more than 5,000 new jobs, adding \$ 100 million in compensation by 2011. n12

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n12 Kushler et al.

----- End Footnotes -----

Policymakers need to address shortand long-term solutions for ensuring affordable and reliable supplies of natural gas. The solutions are multifaceted. Energy efficiency is not the exclusive answer, but it is an important part of the solution. To discount it would be a mistake.

GRAPHIC: Picture, **JANINE MIGDEN-OSTRANDER**

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EXHIBIT

Resolution Adopting Natural Gas Information "Toolkit"

WHEREAS, The President of the National Association of Regulatory Utility Commissioners ("NARUC"), in response to concerns about current and future levels of natural gas supply and demand, and increasing price volatility, on June 16, 2003, appointed a Natural Gas Task Force to address these issues; *and*

WHEREAS, The Board of Directors of the National Association of Regulatory Utility Commissioners convened at its July 2003 Summer Meetings in Denver, Colorado, adopted a *Resolution Supporting Development Of A Tool Kit To Address Natural Gas Price Volatility*, for the use of State commissions in addressing immediate concerns about high natural gas prices and high price volatility; *and*

WHEREAS, The NARUC Natural Gas Task Force revisited NARUC's October 2000 Information Packet on the problem of high natural gas prices and alternative actions by State commissions, and developed an updated "Toolkit" that provides State commissions with options for the upcoming winter heating season as well as for future winters that they may consider; *and*

WHEREAS, The "Toolkit" is not designed to provide definite answers concerning how State commissions can best address the current gas supply and demand situation, the "Toolkit" does provide possible responses that State commissions can take to help mitigate the effects of high and volatile natural gas prices on retail gas consumers; *now therefore be it*

RESOLVED, That the National Association of Regulatory Commissioners (NARUC), convened in its 2003 Annual Convention in Atlanta, Georgia, adopts and authorizes publication of the *Natural Gas Information "Toolkit"* prepared by its Natural Gas Task Force; *and be it further*

RESOLVED, That the NARUC Natural Gas Task Force focus its next efforts on a detailed review of: (1) the National Petroleum Council's September 25, 2003 report on *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy* with emphasis on the findings and recommendations in that report that have regulatory implications for State commissions, which include, but are not limited to: (a) improving and promoting energy efficiency and conservation initiatives, including consumer outreach and education, (b) facilitating inter-agency coordination to address siting issues for new infrastructure, including LNG terminals, (c) issues associated with fuel flexibility in power generation and industrial applications, (d) encouraging participation in collaborative industry research and development; (2) the increasing interdependency of natural gas and electric power markets, including potential impacts of higher natural gas prices on electric rates; and (3) the role of long-term contracts in the natural gas industry; and that it provide recommendations, if any, on actions that can be taken back to the NARUC Board at future meetings.

Sponsored by the Committee on Gas

Recommended by the NARUC Board of Directors November 18, 2003

Adopted by NARUC Convention November 19, 2003

EXHIBIT

Resolution on Gas and Electric Energy Efficiency

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC), at its July 2003 Summer Meetings, adopted a *Resolution on State Commission Responses to the Natural Gas Supply Situation* that encouraged State and Federal regulatory commissions to review and reconsider the level of support and incentives for existing gas and electric utility programs designed to promote and aggressively implement cost-effective conservation, energy efficiency, weatherization, and demand response in both gas and electricity markets; *and*

WHEREAS, The National Petroleum Council (NPC), in its September 25, 2003 report on *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy*, found that greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating price levels and reducing volatility and recommended all sectors of the economy work toward improving demand flexibility and efficiency; *and*

WHEREAS, The NPC, in its report, identified key elements of the effort to maintain and continue improvements in the efficient use of electricity and natural gas, including (but not limited to):

- (i) enhanced and expanded public education programs for energy conservation, efficiency, and weatherization,
- (ii) DOE identification of best practices utilized by States for low-income weatherization programs and to encourage nation-wide adoption of these practices,
- (iii) a review and upgrade of the energy efficiency standards for buildings and appliances (to reflect current technology and relevant life-cycle cost analyses) to ensure these standards remain valid under potentially higher energy prices
- (iv) promote the use of high-efficiency consumer products including advanced building materials, Energy Star appliances, energy “smart” metering and information control devices
- (v) on-peak electricity conservation to minimize the use of gas-fired electric generating plants,
- (vi) the use of combined-cycle gas-fired electric generating units instead of less-efficient gas-fired boilers, and
- (vii) clear natural gas and power price signals; and
- (viii) remove regulatory and rate structure incentives to inefficient use of natural gas and electricity; and

WHEREAS, The NARUC, at its November 2003 annual convention, adopted a *Resolution Adopting Natural Gas Information “Toolkit”* which encouraged the NARUC Natural Gas Task Force, to review (among other things) the findings and recommendations in the NPC report that have regulatory implications for State commissions for improving and promoting energy efficiency and conservation initiatives, including consumer outreach and education, review of regulatory throughput incentives; *and*

WHEREAS, The American Council for an Energy-Efficient Economy ("ACEEE"), in its December 2003 report on *Responding to the Natural Gas Crisis: America's Best Natural Gas Energy Efficiency Programs*, (i) identified States and utilities with programs that many would consider best practice or model programs for all types of natural gas customers and all principal natural gas end-use technologies, and (ii) found that these programs are concentrated in relatively few States and regions and could be expanded in other parts of the country to great benefit; *and*

WHEREAS, the Natural Resources Defense Council (NRDC), the American Gas Association (AGA) and the ACEEE have recently adopted a Joint Statement noting that traditional rate structures often act as disincentives for natural gas utilities to aggressively encourage their customers to use less gas. Therefore, the NRDC, AGA, and the ACEEE have urged public utility commissions to align the interests of consumers, utility shareholders, and society as a whole by encouraging conservation. Among the mechanisms supported by these groups are the use of automatic rate true-ups to ensure that a utility's opportunity to recover authorized fixed costs is not held hostage to fluctuations in retail gas sales; *now therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC), convened in its 2004 Summer Meetings in Salt Lake City, Utah, encourages State commissions and other policy makers to support the expansion of natural gas energy efficiency programs and electric energy efficiency programs, including those designed to promote consumer education, weatherization, and the use of high-efficiency appliances, where economic, and to address regulatory incentives to address inefficient use of gas and electricity; *and be it further*

RESOLVED, That the Board of Directors of the NARUC, encourages State and Federal policy makers to: (i) review and upgrade the energy efficiency standards for buildings and appliances, where economic, to ensure these standards remain valid under potentially higher energy prices, and (ii) promote the use of high-efficiency consumer products, where economic, including advanced building materials, Energy Star appliances, and energy "smart" metering and information control devices; *and be it further*

RESOLVED, That Board of Directors of NARUC encourages State Commissions to review and consider the recommendations contained in the enclosed *Joint Statement of the American Gas Association, the Natural Resources Defense Council, and the American Council for an Energy-Efficient Economy*; *and be it further*

RESOLVED, That the Board of Directors of the NARUC recognizes that the best approach towards promoting gas energy efficiency programs and electric energy efficiency programs for any single utility, State or region may likely depend on local issues, preferences and conditions.

*Sponsored by the NARUC Natural Gas Task Force, Committee on Gas, Committee on Consumer Affairs, Committee on Electricity, and Committee on Energy Resources and the Environment
Adopted by the NARUC Board of Directors July 14, 2004*

EXHIBIT

Resolution on Energy Efficiency and Innovative Rate Design

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC), at its July 2003 Summer Meetings, adopted a *Resolution on State Commission Responses to the Natural Gas Supply Situation* that encouraged State and Federal regulatory commissions to review the incentives for existing gas and electric utility programs designed to promote and aggressively implement cost-effective conservation, energy efficiency, weatherization, and demand response; *and*

WHEREAS, The NARUC at its November 2003 annual convention, adopted a *Resolution Adopting Natural Gas Information "Toolkit,"* which encouraged the NARUC Natural Gas Task Force to review the findings and recommendations of the September 23, 2003 report by the National Petroleum Council on *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy* and its recommendations for improving and promoting energy efficiency and conservation initiatives; *and*

WHEREAS, The NARUC at its 2004 Summer Meetings, adopted a *Resolution on Gas and Electric Energy Efficiency* encouraging State commissions and other policy makers to support expansion of energy efficiency programs, including consumer education, weatherization, and energy efficiency and to address regulatory incentives to inefficient use of gas and electricity; *and*

WHEREAS, These NARUC initiatives were prompted by the substantial increases in the price of natural gas in wholesale markets during the 2000-2003 period when compared to the more moderate prices that prevailed throughout the 1990s; *and*

WHEREAS, The wholesale natural gas prices of the last five years largely reflect the fact that the demand by consumers for natural gas has been growing steadily while, for a variety of reasons, the supply of natural gas has had difficulty keeping pace, leading to a situation where natural gas demand and supply are narrowly in balance and where even modest increases in demand produce sharp increases in price; *and*

WHEREAS, Hurricanes Katrina and Rita, in addition to damaging the States of Alabama, Mississippi, Louisiana, and Texas, significantly damaged the nation's onshore and offshore energy infrastructure, resulting in significant interruption in the production and delivery of both oil and natural gas in the Gulf Coast area; *and*

WHEREAS, The confluence of a tight balance of natural gas supply and demand and these natural disasters has driven natural gas prices in wholesale markets to unprecedented levels; *and*

WHEREAS, The present high and unprecedented level of natural gas prices are imposing significant burdens on the nation's natural gas consumers, whether residential, commercial, or industrial, and will likely be injurious to the nation's economy as a whole; *and*

WHEREAS, The recently enacted Energy Policy Act of 2005 contains a number of provisions aimed at encouraging further natural gas production in order to bring down prices for consumers,

but these actions, together with any further action on energy issues by Congress, are unlikely to bring forth additional supplies of natural gas in the short term; *and*

WHEREAS, Energy conservation and energy efficiency are, in the short term, the actions most likely to reduce upward pressure on natural gas prices and to assist in bringing energy prices down, to the benefit of all natural gas consumers; *and*

WHEREAS, Innovative rate designs including "energy efficient tariffs" and "decoupling tariffs" (such as those employed by Northwest Natural Gas in Oregon, Baltimore Gas & Electric and Washington Gas in Maryland, Southwest Gas in California, and Piedmont Natural Gas in North Carolina), "fixed-variable" rates (such as that employed by Northern States Power in North Dakota, and Atlanta Gas Light in Georgia), other options (such as that approved in Oklahoma for Oklahoma Natural Gas), and other innovative proposals and programs may assist, especially in the short term, in promoting energy efficiency and energy conservation and slowing the rate of demand growth of natural gas; *and*

WHEREAS, Current forms of rate design may tend to create a misalignment between the interests of natural gas utilities and their customers; *now therefore be it*

RESOLVED, That the National Association of Regulatory Utility Commissioners (NARUC), convened in its November 2005 Annual Convention in Indian Wells, California, encourages State commissions and other policy makers to review the rate designs they have previously approved to determine whether they should be reconsidered in order to implement innovative rate designs that will encourage energy conservation and energy efficiency that will assist in moderating natural gas demand and reducing upward pressure on natural gas prices; *and be it further*

RESOLVED, That NARUC recognizes that the best approach toward promoting energy efficiency programs for any utility, State, or region may likely depend on local issues, preferences, and conditions.

Sponsored by the Committee on Gas

Recommended by the NARUC Board of Directors November 15, 2005

Adopted by the NARUC November 16, 2005

EXHIBIT

Resolution Supporting the National Action Plan on Energy Efficiency

WHEREAS, The United States is in an increasing energy cost environment, both for the cost of energy commodities and new energy infrastructure, such that there is uniform recognition at every level of government and industry that concerted efforts and attention must be focused on ways to conserve energy and utilize it more efficiently in order to reduce the corresponding costs to both consumers and our economy; *and*

WHEREAS, The Department of Energy (DOE), the Environmental Protection Agency (EPA), and other government and non-profit agencies are working with a number of public and private entities in numerous States to identify, implement and improve public policy and planning efforts related to the achievement of energy efficiency objectives; *and*

WHEREAS, The Board of Directors of the National Association of Regulatory Utility Commissioners adopted a "Resolution on Gas and Electric Energy Efficiency" at its July 2004 meeting that encouraged State policy makers to: (1) support the expansion of energy efficiency programs; (2) review and upgrade energy efficiency standards for buildings and appliances and promote the use of high-efficiency consumer products, including smart metering and information control devices; and (3) recognize that the best approach for promoting such programs may depend on local issues, preferences, and conditions; *and*

WHEREAS, The National Action Plan on Energy Efficiency was released on July 31, 2006, recommending key action items for public policymakers and private industry to consider in each region, with the goal of saving consumers billions of dollars in energy costs over the next 15 years; *and*

WHEREAS, The following five recommendation areas comprise the key elements of the 2006 National Action Plan on Energy Efficiency: (1) Recognize energy efficiency as a high priority energy resource; (2) Make a strong, long-term commitment to cost-effective energy efficiency as a resource; (3) Broadly communicate the benefits of and opportunities for energy efficiency; (4) Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective; and (5) Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments; *now therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC), convened in its 2006 Summer Meeting in San Francisco, California, reaffirms its support for the Association's July 2004 "Resolution on Gas and Electric Energy Efficiency"; *and be it further*

RESOLVED, That the Board of Directors commends the commitments made on July 31, 2006 at the opening session of these meetings by a number of State commissions and other stakeholders to take specific actions to move their States aggressively toward increased energy efficiency; *and be it further*

RESOLVED, That the Board of Directors endorses the principal objectives and recommendations of the National Action Plan on Energy Efficiency, and commends to its member commissions a State-specific, and where appropriate, regional review of the elements and potential applicability of the energy efficiency policy recommendations outlined in the Plan, in an effort to identify potential improvements in energy efficiency policy nationwide.

Sponsored by the Executive Committee and the Committees on Consumer Affairs, Electricity, Energy Resources and the Environment, and Gas
Adopted by the NARUC Board of Directors August 2, 2006

EXHIBIT

2003



NARUC

Natural Gas Information "Toolkit"

The National
Association
of Regulatory
Utility
Commissioners

NARUC Natural Gas
Task Force

November 2003

NATURAL GAS INFORMATION "TOOLKIT"

Prepared by

The NARUC Natural Gas Task Force

For

State Public Utility Commissions

November 2003

EXECUTIVE SUMMARY

Events over the past few years have caused natural gas prices to rise and become highly volatile. It is expected that in the absence of radical market and policy developments natural gas prices will remain high and volatile in the foreseeable future. In response to this concern, several state public utility commissions (PUCs) have undertaken a wide range of actions to make the public aware of this situation as well as to alleviate the effect on retail consumers, especially households.

At its July 2003 Meetings in Denver, the NARUC Board of Directors passed a resolution in support of revisiting its October 2000 Information Packet on high natural gas prices and developing an updated toolkit "for the use of State commissions in addressing high natural gas prices and high price volatility." Prior to the Summer Meetings, the President of NARUC called for the establishment of a Natural Gas Task Force to be chaired by Commissioner W. Robert Keating of Massachusetts and with members drawn from Commissioners of several states representing relevant NARUC Committees. As articulated by the NARUC President, "It is crucial that policymakers, State regulators and the members of this new Task Force consider all consumer groups ... in determining actions that can be taken immediately to ease the potentially volatile implications associated with short-term supply constraints and to also consider solutions for long-term issues that can improve the United States' future energy posture."

The objective of the first phase of the Task Force's activities was to develop a "toolkit" to assist State commissions in addressing the problems consumers would face with potentially volatile and high natural gas prices. The toolkit provides State commissions with options, for the upcoming winter season as well as for future winters, that they can consider in response to the tight gas-supply situation. The toolkit is not designed to provide definite answers concerning how State commissions can best cope with the current state of affairs; instead, it provides possible responses that State commissions can take in mitigating the effects of high and volatile natural gas prices on retail gas consumers. Although several State commissions have been pro-active in responding to the price problem, this toolkit contains additional ideas that they may want

to consider in the future. The toolkit will include some innovative ideas that State commissions may not have previously contemplated.

The work of the Natural Gas Task Force does not end with this toolkit. In the next phase of its activities, the Task Force will examine more extensively some of the topics contained in the toolkit. Specifically, it will focus on three topics. The first is a detailed review of the recent study by the National Petroleum Council (NPC). This study, which is briefly summarized in the toolkit, represents a comprehensive analysis of the future U.S. natural gas sector under two different policy scenarios. The Task Force will pay particular attention to those recommendations and findings of the NPC study that have implications for State commissions. For example, the study encourages more aggressive energy conservation by retail gas consumers; the study also calls for the wider use of physical and financial risk management tools.

The second phase of the Task Force's activities will also focus on the effects of high and volatile natural gas prices on the electricity industry. Increasingly, natural gas is being used in the generation of electricity. In many regions of the country the wholesale price of electricity is being driven by the dispatching of gas-fired generating facilities.

Finally, the second phase will also examine the role of long-term contracts in the natural gas industry. Some concern exists that transactions in the natural gas market have shifted too far away from long-term arrangements that potentially can provide price stability to consumers and more certainty to investors in production, storage, pipeline, and distribution facilities. The extent of this problem and the appropriate role of State commissions in dealing with it will be addressed.

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Introduction

The "roller coaster" behavior of natural gas prices over the last few years has led to great anxiety for gas consumers, state public utility commissions (PUCs), and gas utilities. For example, it has become difficult for many residential consumers to budget their incomes for paying winter gas bills. Some large, gas-intensive industrial customers have had to close their doors.¹ State commissions and gas utilities have met with public outcries because of high gas prices.

State PUCs desire to have natural gas remain affordable to all customers and to be priced "fair and reasonably." Gas utilities worry that high and volatile gas prices will decrease their profits from increased uncollectible debt expenses, reduced gas throughput and the increased likelihood of less-than-full recovery of purchased gas costs. Overall, the highly fluctuating behavior of gas prices in recent years has placed much stress on the natural gas industry, stimulating a revisit of existing state commission policies and practices.

Aggravating the effect of high gas prices is the recent phenomenon of the electricity industry becoming more reliant on natural gas for generation. For state PUCs, high gas prices mean not only higher gas bills but also higher electricity bills.² This toolkit will focus on the effect of high gas prices on gas consumers, especially residential consumers, while recognizing that rising gas prices can seriously burden electricity consumers as well. In fact, in most regions of the country, gas-fired electricity generation has become the marginal source of power, in the process increasingly acting as a primary determinant of market-based wholesale electricity prices. Gas-fired generation has also increasingly served base-load demand for electricity, affecting both peak and off-peak electricity prices. (Phase II of the NARUC Natural Gas Task Force's activities will focus in more detail on the problem of high natural-gas prices for the electricity industry.)

¹ The ammonia and fertilizer industries have been especially burdened by high gas prices. According to one study, since mid-2000 eleven ammonia plants, representing 21 percent of U.S. capacity, have been forced to close.

² See NARUC Staff Subcommittee on Electricity, *Gas and Electricity Interdependence: The Current Situation and Intermediate and Long-Term Solutions*, July 2003. The report can be found at www.naruc.org/interdependence.pdf.

Overall, high and volatile natural gas prices can drag down the economy and lead to serious economic injury to different groups of consumers. Specifically, high gas prices can particularly cause harm to low- and fixed-income households,³ industries that rely heavily on natural gas for their production, and electricity consumers in regions where gas-fired generation is a major determinant of wholesale electricity prices.

Compared with three years ago when the National Association of Regulatory Utility Commissioners (NARUC) published its Information Packet⁴ in response to anticipated high gas prices for the winter of 2000-2001, the current gas-supply situation has caused greater concern. A reason for this is the widespread belief that gas supplies in the U.S. market have seriously tightened to the degree that the "gas bubble" era of \$2 and \$3 wholesale gas prices lies behind us, or at least not anticipated to return for the foreseeable future. Over the past few years we have seen a structural shift in the U.S. gas market toward tighter gas supplies. In fact, until about May 2000, industry experts generally agreed that the supply of natural gas was plentiful to sustain low prices for an indefinite period. As of today, however, the consensus among these same experts is that unless we deviate from the status quo, we should continue to encounter high and volatile gas prices at least over the next few years. Even if reforms take place with gas supplies coming from new sources and demand-side efficiency more aggressively pursued, we should expect a new era where gas prices will rise to higher levels, relative to 1985-1999 period. As a consequence, gas utilities and other gas providers, retail consumers and the economy as a whole will all have to adapt, perhaps at a high economic cost, to these changes in market conditions.

The major challenge for policymakers lies with making natural gas affordable to everyone and with moderating gas-price volatility. Recently, state PUCs have had to address difficult questions revolving around (1) whether residential consumers want price stability, (2) the kind and degree of price stability consumers want, (3) how much they are willing to pay for price stability, (4) the assurance of affordable gas to low-

³ Low-income households, on average, spend about four times more on home use of energy as a percentage of their annual incomes, than other households.

⁴ See *Information on the Problem of High Natural Gas Prices and Alternative Actions by State Public Utility Commissions*, October 12, 2000.

income households, and (5) demand-side actions that consumers can take to reduce their gas bills.

The Bush Administration has recognized the gravity of the current gas-supply situation. In June, the Secretary of the U.S. Department of Energy, Spencer Abraham, sent a letter to state PUCs encouraging them to consider various actions in order to mitigate the effects of high natural gas prices. These actions range from the promotion of energy efficiency to the encouragement of hedging and other price stabilization actions by gas utilities. In his letter, the Secretary also referred to the National Petroleum Council Summit on Natural Gas in June that included "discussion" actions that state PUCs can take in response to high gas prices. These include information and education programs, energy efficiency, and infrastructure expansion. Secretary Abraham also noted the Bush Administration's National Energy Policy (NEP)⁵ emphasis on "the need for a diverse energy mix to strengthen...energy security." The Policy points out that the "most significant long-term challenge relating to natural gas is whether adequate supplies can be provided to meet sharply increased projected demand at reasonable prices."⁶ The Policy also recognizes that price spikes have a "particularly severe impact on low-income consumers who use natural gas for heating."⁷ Finally, in his letter, the Secretary highlighted the new DOE webpage www.energysavers.gov that provides "valuable tips for consumers on how to save and conserve energy."

The major objective of this document, which will be referred to as the "toolkit," is to assist state PUCs in their efforts to address the problem of high and volatile gas prices, particularly as they affect residential gas consumers.⁸ While several state PUCs have already taken some action, others have not. Even in those states that have, in

⁵ See *National Energy Policy*, Report of the National Energy Policy Development Group, May 2001.

⁶ *Ibid.*, 1-8. The recent report on natural gas by the National Petroleum Council (NPC), titled *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy*, points out the failure of governmental policy in promoting the use of natural gas without adequately addressing the need for new gas supplies. This report will be briefly discussed in the last section of this toolkit.

⁷ *Ibid.*, 1-8.

⁸ The Board of Directors of NARUC gave its support to the development of this toolkit by passing a resolution at its July 2003 Summer Meetings in Denver. As expressed in this resolution, the purpose of the toolkit is to help state commissions address the dual problem of high natural gas prices and high price volatility. While most industry experts would not consider the current gas-supply situation as a crisis, they would tend to concur that the tight gas market has led to prices becoming susceptible to mild swings in demand and supply.

many instances these actions may not reflect a systematic and the "best" approach to the severity of the gas-supply situation.

This toolkit can assist all states by providing a comprehensive listing and description of actions that they can consider in addressing the gas-price problem. Its purpose is not to make recommendations on which of these options state commissions should pursue. It also does not provide detailed analysis of the individual options.

This toolkit should also be of benefit to other policymakers whose actions affect the natural gas sector. Some of the possible options for state commissions identified in this toolkit can be implemented for the upcoming winter, while others require longer-term actions.

This toolkit uses a question-answer format in addressing the major topics. *Topics covered in the toolkit include forecasts of natural gas prices for the upcoming winter, actions already taken by state commissions in response to high gas prices, options available to both consumers and state commissions in coping with high gas prices, discussion of low-cost energy-efficiency activities offering promise of lowering gas bills, available energy-assistance funding sources, and federal and state energy-emergency actions. Finally, the toolkit provides hyperlinks to websites containing pertinent information as well as a summary of recommendations made by other groups that have recently addressed the problem of high natural gas prices.*

Price Projections

Q: What are the price projections for this winter, and how do they compare to last winter's prices?

A: The Energy Information Administration (EIA) in the U.S. Department of Energy, in its October 2003 *Short-Term Energy Outlook* (released October 7), reported that, assuming a return to normal temperatures during the 2003-2004 winter season and modest growth in new supply, the average wellhead natural gas price, which includes both spot and contract purchases, is projected to average about \$4.30 per Mcf, down nearly 7 percent from last winter's average. Residential prices are projected, however, to average \$9.17 per Mcf, up 9 percent from the average \$8.39 last winter. Because changes in wellhead prices require some time to show up at the retail level for both economic and regulatory reasons, the recent decline in wellhead prices is too small and too recent to offset the impact of the substantial year-to-date increase in commodity gas costs (compared to the same period in 2002) on residential prices.

Due to the increase in expected residential prices, per-household natural gas expenditures are projected to rise about 5 percent despite an expected drop in actual consumption in the base case. (The "base case" can be interpreted as a reference case providing a set of expectations given a number of assumptions. These assumptions include no changes in government regulations and normal weather.) Obviously demand, prices, and expenditures would be higher if weather is colder than normal. In a cold weather scenario in which heating degree-days are 10 percent above normal, delivered prices would be expected to be higher and expenditure projections per household would rise about 16 percent above the base case.

Under normal weather conditions, total natural gas demand is expected to average 69.7 billion cubic feet (Bcf) per day for the up-coming winter, down about 2 percent from last winter's average. This decline largely reflects the expected decline in heating degree-days associated with a return to normal winter temperatures from below-normal levels seen during the winter of 2002-2003.

Domestic natural gas production during the upcoming winter is expected to average 52.8 Bcf per day, close to last winter's average production. High prices and a strong drilling effort in 2003 have tended to keep total domestic dry gas output above levels seen in 2002. Due to the surge of production evident in the first quarter of 2003, however, winter output is not expected to exceed that of last year in the base case.

Net imports are projected to provide 10.4 Bcf per day this winter in EIA's "base case" scenario, up from 9.2 Bcf last winter. The vast majority of net imports come as natural gas shipped by pipelines from Canada. However, most of the improvement in projected net imports this winter is attributable to the growth in liquefied natural gas (LNG) imports into the United States.

As of October 1 of this year, natural gas inventories are projected to be well within recent historical norms. Storage levels, which declined to a low of 735 Bcf at the end of last winter (less than half of the 1,518 Bcf 2 years ago), managed to climb to an estimated 2,840 Bcf by September 30. Although that storage position is about 200 Bcf less than the record high at the outset of the previous season, the April-September rate of stock additions was one of the highest on record. The rapid storage injections underscored declines in natural gas demand brought about by firm prices, which induced fuel switching by power generators and reductions in industrial demand. Increases in hydroelectric generation also played a role. Winter season storage withdrawals are projected to average about

9.3 Bcf per day, about 27 percent lower than last winter's average. As a result, end-of-winter stocks are projected to be above 1,100 Bcf, more than 400 Bcf above that of the previous season's record low.

Winter Natural Gas Outlook

(Energy Information Administration/Short-Term Energy Outlook -- October 2003)

| | History | | | Base Case | | | | | |
|---------------------------------|---------|-----------|---------|-----------|-----------|---------|--------|----------------|--------|
| | Q4 | 2002-2003 | | Q4 | 2003-2004 | | Q4 | Percent Change | |
| | | Q1 | Winter | | Q1 | Winter | | Q1 | Winter |
| Demand/Supply (Bcf/day) | | | | | | | | | |
| Total Demand | 62.82 | 80.17 | 71.40 | 81.51 | 78.08 | 68.70 | -2.1% | -2.6% | -2.4% |
| Production | 52.23 | 53.78 | 53.00 | 52.79 | 52.77 | 52.78 | 1.1% | -1.9% | -0.4% |
| Net Stock Withdrawal | 7.24 | 18.22 | 12.67 | 3.80 | 14.91 | 9.30 | -47.5% | -18.2% | -26.7% |
| Net Imports | 9.68 | 8.79 | 9.24 | 10.60 | 10.09 | 10.35 | 9.5% | 14.7% | 12.0% |
| Stocks (ending period) | | | | | | | | | |
| Working Gas (Bcf) - Beg. | 3042 | 2375 | 3042 | 2837 | 2487 | 2837 | -6.7% | 4.7% | -6.7% |
| - End. | 2375 | 735 | 735 | 2487 | 1145 | 1145 | 4.7% | 55.8% | 55.8% |
| Prices (\$/Mcf) | | | | | | | | | |
| Wellhead Gas | 3.60 | 5.55 | 4.58 | 4.28 | 4.27 | 4.28 | 18.9% | -23.0% | -6.6% |
| Resid. Gas | 7.98 | 8.63 | 8.39 | 9.42 | 9.02 | 9.17 | 18.0% | 4.5% | 9.3% |
| Manuf. Output (Index, 1997=1.0) | 111.51 | 111.26 | 111.385 | 112.57 | 114.16 | 113.369 | 1.0% | 2.6% | 1.8% |
| Gas-Weighted HDDs per day | 19.3 | 27.4 | 23.3 | 18.8 | 26.4 | 22.5 | -3.4% | -3.7% | -3.6% |

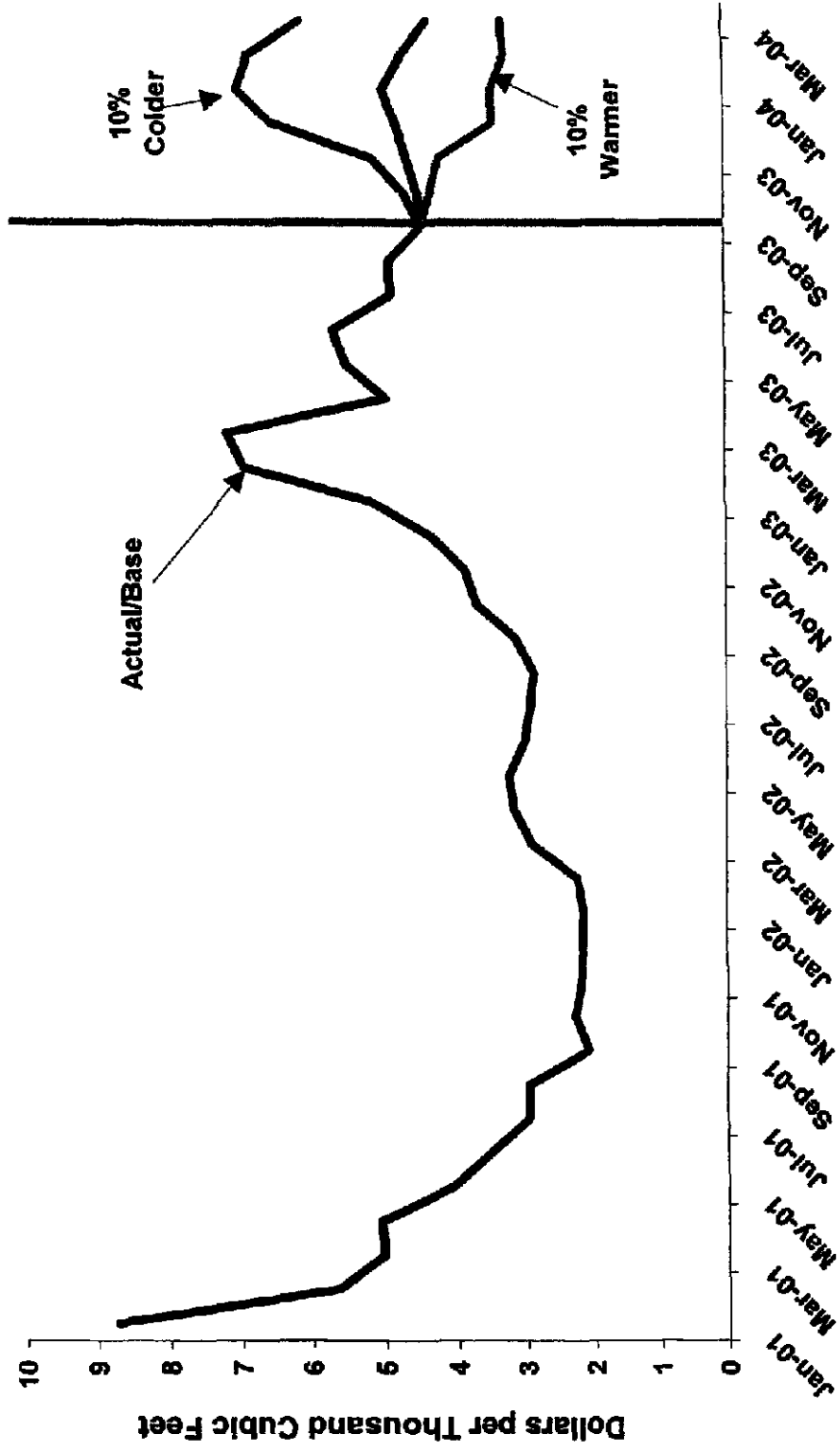
Winter Weather Scenarios: Warm (Mild), Normal (Base) and Cold (Severe) Cases

(Illustrative Household Heating Demand and Costs)

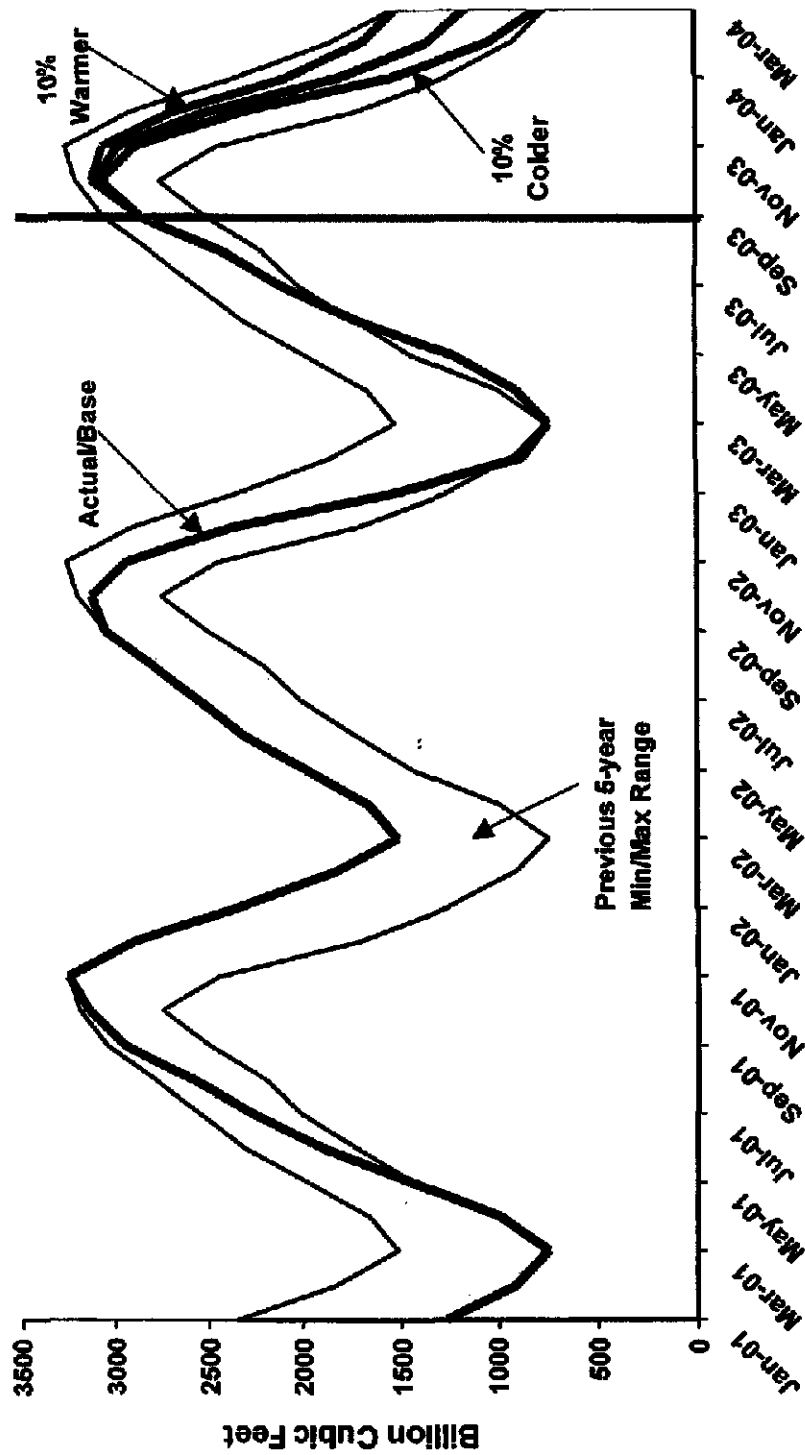
| | Winter 2002-2003 | Winter of 2003-2004 | | | % Diff. From Base | |
|------------------------------|---------------------|---------------------|--------|--------|-------------------|--------|
| | | Mild | Normal | Severe | Mild | Severe |
| Natural Gas (Midwest) | | | | | | |
| Consumption (Mcf) | 95.2 | 82.6 | 91.8 | 101.0 | -10.0% | 10.0% |
| Avg. Price (\$/Mcf) | 8.39 | 8.77 | 9.17 | 9.67 | -4.3% | 5.5% |
| Expenditures (\$) | 799 | 724 | 841 | 977 | -13.9% | 16.1% |

Note: Scenarios involve assumptions of 10% greater and 10% lower heating degree-days in all regions.

Natural Gas Spot Wellhead Prices



Working Gas in Storage



State Actions

Q: What actions have state commissions taken so far in response to high gas prices?

A: Several state PUCs have been active in responding to the tight gas-supply situation. In early summer 2003, the National Regulatory Research Institute (NRRI) compiled responses to a request from a member of the NARUC Staff Subcommittee on Public Information Officers regarding state actions with regard to high gas prices. Nineteen states answered, identifying a wide variety of actions that have been taken as of early summer. For example, several of the states have required gas utilities to educate consumers on what to expect in terms of prices for the upcoming winter. Some have also held public meetings with different stakeholders to engage in dialogue of the gas-price problem and how to deal with it. A few respondents indicated their efforts to more seriously consider utility hedging with physical and financial tools to help moderate price volatility. (Table 1 at the end of this section contains the responses from individual state commissions.)

The responses to other inquiries indicate additional state commissions becoming actively involved with the problem of high gas prices. For example, Tennessee has taken several actions. These include hosting a gas symposium, issuing press releases on consumer tips with regard to conservation and low-income assistance, conducting regional workshops to educate consumers on the current gas-supply situation, working jointly with gas utilities to educate consumers through brochures and other information, and establishing partnerships with non-profit community organizations to disseminate information. In July of this year, the Oklahoma Corporation Commission unveiled a new tool for assisting consumers in planning their energy budgets. Called the Oklahoma Energy Outlook, the forecast combines information from the Commission's Oil and Gas

and Public Utility divisions to project oil and gas production data and the effect that natural gas price changes would have on future electric and natural gas bills. The Oklahoma Energy Outlook is incorporated as a section of the Commission's website at www.occ.state.ok.us. Other states and jurisdictions, including the District of Columbia, Illinois, Maine and West Virginia, have alerted consumers on the prospects of continued high gas prices and have identified actions consumers can take to buffer the effects. Other states not previously mentioned here, for example Wyoming, have also taken action in response to the tight gas-supply situation.

A state that has been particularly active in disseminating information to the general public is Connecticut. On September 3, 2003, the Department of Public Utility Control convened a forum to discuss natural gas supply and demand, pricing, and related issues for the winter of 2003-2004. Attendees included the State's Attorney General, the Consumer Counsel, and representatives of the Office of Policy and Management, the Department of Social Services, the Department of Environmental Protection, the Governor's staff, and the Legislative Research staff. Presentations were made by the interstate pipeline companies, the local distribution companies, the Independent System Operator of New England, the American Gas Association and the Northeast Gas Association. Recognizing the high probability of high natural gas prices for the coming winter, the local gas companies undertook a concerted communications campaign to inform their customers about conservation, the winter moratorium, energy assistance and payment arrangement programs. More information regarding the forum and what customers can do to mitigate price impacts is available on the Department's web page at <http://www.state.ct.us/dpuc>.

The Massachusetts Department of Telecommunications and Energy (DTE) is an example of a state public utility commission taking several actions that should help lighten the burden of high gas prices on residential consumers. The following describes some of the DTE's actions:

- Monthly budget and payment plans are addressed in the DTE's billing and termination procedures in 220 CMR 25.00. *Budget plans* are equalized monthly payment arrangements whereby the customer's gas or electric usage is projected for a period and equal monthly charges are calculated and billed for that period. Customers are usually placed on this plan in September. *Payment plans* are deferred payment arrangements applied to an outstanding amount or overdue charge and may be extended over a minimum of four months and approved.
- Since 1992, gas distribution companies are required to file for Department review and approval of energy efficiency plans. The energy efficiency programs are designed to bring cost savings to consumers and reduce overall need for gas. These programs include weatherization services such as energy audits, attic insulation, wall insulation, air sealing, and heating system repairs, as well as rebates for the replacement of high efficiency boilers and furnaces, water heaters, and clock thermostats.
- According to Massachusetts G.L. c.164, §124F, heating related gas and electric customers cannot be shut-off because of financial hardship between November 15 and March 15. The DTE has extended the moratorium from shut off beyond March 15 when severe winter weather warrants it.
- Fuel assistance and energy conservation programs are available to households falling within 175-200 percent of the poverty levels set by the federal government. Benefit levels are based on household income and, in part, on housing/energy circumstances, with payments subject to available funds.

As a general observation, in recent years state commissions have put more emphasis on price stability as a goal of gas procurement by utilities. In

Arkansas, for example, commission rules recently promulgated require gas utilities to develop gas supply plans that attempt to "achieve the optimum balance of reliability, reduced [price] volatility and reasonable price for the benefit of consumers... The options that gas utilities should consider are long-term contracts as well as financial hedges which act like insurance policies on the cost of gas that utilities must buy." Overall, since the winter of 2000-2001, state commissions have become more receptive to hedging by gas utilities. Although somewhat still leery of financial hedging, state commissions have increasingly recognized its potential benefits.

There also seems to be consensus across the states that state commissions, gas utilities and consumers themselves must work together to buffer the effects of high gas prices. As viewed by most state commissions, the essential problem caused by high gas prices lies with residential consumers having to pay extremely high, and in some cases unaffordable, gas bills during the winter months when space heating needs are most pronounced. Options being considered by both state commissions and gas utilities in dealing with this problem, for the most part, focus on ways to reduce winter gas bills. Especially for low-income households, policymakers face the tough challenge of finding ways to lighten the burden of high gas bills so as to not jeopardize these consumers' ability to purchase other essential goods and services. Another problem recognized by state regulators and industry stakeholders stems from the increased use of natural gas for electricity generation. The fact that most new gas-fired power plants lack dual-fuel capability means limited fuel-switching will take place when gas prices rise precipitously because of tight gas supplies.⁹ The outcome is higher prices for both electricity consumers and gas consumers.

⁹ See, for example, Levitan & Associates, Inc., *Natural Gas and Fuel Diversity Concerns in New England and the Boston Metropolitan Electric Load Pocket*, prepared for the ISO New England Inc, July 1, 2003.

Table 1

| STATE ACTIVITIES IN RESPONSE TO THE CURRENT GAS SUPPLY SITUATION July 2003* | |
|---|---|
| State | Response |
| Alabama | The Public Service Commission has not officially acted in response to the gas supply situation, but something may be planned later. The state's largest regulated natural gas utility, Alagasco, has issued a news release that warns the public of the likelihood of high gas prices for next winter. The staff considers this a good example of a professional, responsible and proactive effort by the utility. |
| Arizona | In 1998 the Arizona Corporation Commission (ACC) adopted a 12-month rolling average purchased gas adjustment mechanism by setting the monthly PGA rate based on the average gas cost for the previous 12 months; the mechanism also bands the PGA rate so that it cannot change more than \$0.10 per therm within a 12-month period, absent special commission approval. In 1998 the ACC recognized price stability as one of the goals of the gas-procurement process and directed the LDCs to procure a portion of their gas supplies through longer-term fixed price supply options; in April of this year, the ACC issued a notice of inquiry addressing pipeline and storage facility issues in the state. On July 10, the commission issued a press release on a FERC decision requiring Arizona contracts for wholesale natural gas capacity on the El Paso pipeline to be converted from "full requirements" contracts to contracts with limited rights on September 1. The ACC has argued that the FERC decision is "likely to usher in a period of price volatility for wholesale natural gas users." |

* The information provided in this table was compiled by NRRI. The information was collected from the NARUC Staff Subcommittee on Public Information Officers in late June and early July of this year.

TABLE 1 - Continued

| STATE ACTIVITIES IN RESPONSE TO THE CURRENT GAS SUPPLY SITUATION July 2003 | |
|--|---|
| State | Response |
| Arkansas | <p>The Arkansas Public Service Commission has adopted natural gas procurement plan rules. Those rules are available on the commission's webpage. Each gas utility is required to develop a procurement plan that ensures reliability, safety, reasonable prices and mitigation of price volatility. Part of that process is consideration by a gas utility of physical and financial hedging.</p> <p>The commission conducted a conference in early June where the current natural gas supply and price outlook were discussed. The commission invited members of the media, general assembly and the public to attend. Those presentations are available on the commission's webpage. The commission's rural and community liaison is meeting with community leaders to discuss the prospects for high gas prices this winter. The commission is considering other means to educate customers regarding the expected gas prices for the upcoming heating season.</p> <p>The Delaware commissioners are to be updated by staff concerning the gas-supply situation at the public meeting scheduled for July 22.</p> |
| Delaware | <p>The Georgia Public Service Commission issued two consumer advisories this year to alert the public to higher than normal natural gas prices. The commission also expected to run radio spots across the state beginning July 14 for two weeks advising consumers of volatile natural gas prices and the need to compare gas-market prices and possibly lock in on fixed-term price contracts. The commission plans to run additional spots in September along with print ads in major markets across the state. The commission has communicated this information to state legislators.</p> |
| Georgia | <p>The commission issued a press release on June 30 that announced the commission's approval of a 33 percent increase for Intermountain Gas, the state's largest gas distributor. Avista Gas, which serves the northern part of the state, is expected to file its annual purchased gas cost adjustment by August, and a slight increase is expected. The commission is working on a press release and webpage information explaining the natural-gas supply situation and what customers can do to mitigate its impact.</p> |
| Idaho | |

TABLE 1 - Continued

| STATE ACTIVITIES IN RESPONSE TO THE CURRENT GAS SUPPLY SITUATION July 2003 | |
|--|--|
| State | Response |
| Indiana | Indiana held a gas forum on July 10 to discuss utility supply plans for the upcoming winter. Iowa issued a white paper in May of this year, and it is available on the board's website at www.state.ia.us/iub . The board wants gas utilities to take the lead in communicating to their customers about the current gas-supply situation. The Board also wants to raise public officials' awareness of what could happen if all the pieces fall into the wrong places ("the perfect storm" scenario). After issuing the white paper to the governor's energy advisory committee, the commission sent a media advisory to selected major Iowa media outlets making them aware of the paper. Iowa's largest newspaper, the <i>Des Moines Register</i> , used the paper (almost verbatim text from many sections of the white paper) as the basis for an editorial on the subject in which the <i>Register</i> also pushed Senator Grassley (Chairman of the Senate Finance Committee) to get more federal dollars for heating assistance to low-income households. The board's chairperson also contacted the NARUC Natural Gas and Consumer Affairs Committees' chairs about a joint resolution to be proposed at the summer meeting in Denver to raise awareness and to call for additional federal funding for low-income households. ¹⁰ |
| Iowa | The Kentucky PSC is undertaking a major public education effort to inform consumers of the prospect of high heating costs this winter and of the steps they can take to deal with them -- budget billing, weatherization, assistance programs and so forth. The education effort is being undertaken in cooperation with other state agencies and the major LDCs in the state. Key elements of the effort include: <ul style="list-style-type: none"> ▪ Press releases ▪ Media events with the LDCs and local officials to highlight weatherization programs ▪ Background briefings for news media ▪ Speaking appearances ▪ Radio public-service announcements |
| Kentucky | |

¹⁰ The resolution was passed by the Board of Directors of NARUC. The resolution urges Congress "to appropriate LIHEAP funding of at least \$3.4 billion for FY 2004, and an advance appropriation for FY 2005 of at least \$3 billion." The increase in LIHEAP funding to \$3.4 billion would double the eligible households able to receive energy assistance.

TABLE 1 - Continued

| STATE ACTIVITIES IN RESPONSE TO THE CURRENT GAS SUPPLY SITUATION July 2003 | |
|--|---|
| State | Response |
| Kentucky – cont'd | <p>The commission will be communicating with legislators to keep them informed on the gas-supply situation. The commission has drafted a communication plan, which can be obtained from commission personnel. Incidentally, in the winter of 2000-2001 the PSC conducted five field hearings on gas prices and did not find them to be a terribly effective way of informing the public. This year, the commission instead did information-gathering through meetings with the LDCs (which also covered the results and implementation of a focused management audit of the LDCs, which looked at, among other things, their gas purchasing/hedging practices) and will be undertaking a media-based information effort. Receptivity to the message appears to be greatly enhanced as a result of the attention given to Alan Greenspan's comments in June of this year.</p> <p>The Michigan PSC has started a proceeding on the current gas-supply situation. Information on the proceeding can be found on the Commission's website at www.michigan.gov/mp</p> <p>The Mississippi commission plans to hold a technical conference in late August to review and discuss the current gas-supply situation.</p> |
| Michigan | |
| Mississippi | |
| Missouri | <p>The Missouri Public Service Commission has issued several press releases alerting consumers of the possibility of high natural gas prices. The Public Information and Education Department has also issued several fact sheets. For examples see our website www.psc.mo.gov</p> <p>The Commission has taken other actions, including the following:</p> <ul style="list-style-type: none"> ▪ Generic Docket (GO-2002-452) to implement a number of recommendations of the Natural Gas Commodity Price Task Force regarding timing and consistency of purchased gas adjustment filings ▪ Current rulemaking (GX-2002-478) regarding tools to consider in developing a gas purchasing portfolio to mitigate upward price volatility ▪ Current rulemaking regarding cold-weather rule reporting. ▪ Commissioner updates in agenda on the status of the natural gas market and storage. ▪ Inquiry letters and tracking of our LDCs' storage, fixed price contracts, hedging efforts, undercollection levels and number of disconnected customers |

TABLE 1 - Continued
STATE ACTIVITIES IN RESPONSE TO
THE CURRENT GAS SUPPLY SITUATION
July 2003

| State | Response |
|-------------------|--|
| Missouri - cont'd | In addition, we are considering holding a number of local public meetings in August to alert consumers to the potential of higher natural gas prices this winter. |
| Montana | The Commission will be holding a gas roundtable in September on the issue of high gas prices. In previous years, the PSC issued brochures, press releases or consumer alerts notifying consumers of high gas prices and identifying conservation actions that can reduce gas bills. In 1999, the PSC accelerated customer refunds to help mitigate high gas prices. Department staff conducts a pre-winter review of each gas utility's preparedness for the upcoming winter with regard to adequacy of gas supply and capacity, and each company's plans to address gas price volatility through financial or physical hedges. |
| New York | <p>Department staff conducts monthly meetings of the Natural Gas Reliability Advisory Group, which consists of representatives of the gas utilities, marketers, pipeline owners, generators and consumer representatives, where the implications of high gas prices on reliability is addressed.</p> <p>The commission has undertaken steps to improve communications between the oil and gas industries, particularly on the issue of periods when large volume, interruptible gas customers are required to switch to other fuel sources. The goal is to facilitate discussions and a better understanding between the interrelated industries.</p> <p>With respect to consumer activities, the commission's "Conserve a Little, Save a Lot" program for this coming winter heating season will include a consumer alert on New York's natural gas outlook; radio, print and outdoor advertising, direct mail, as well as presentations to community groups and exhibits at consumer events.</p> |
| Oregon | The commission has scheduled a natural gas forum July 16 to discuss the outlook for winter natural gas prices. Coverage of the forum in the state's major daily is expected. The commission prepared press releases for distribution before and after the forum. The commission expects to undertake an outreach effort concerning energy-savings ideas in late September, when the commission finalizes its annual reset of gas rates for the state's three natural gas distribution companies. Two general rate cases involving gas utilities are underway. |

TABLE 1 - Continued

| STATE ACTIVITIES IN RESPONSE TO THE CURRENT GAS SUPPLY SITUATION July 2003 | |
|---|--|
| State | Response |
| Rhode Island | The state of Rhode Island has only one natural gas distribution company — Providence Gas (a subsidiary of Southern Union Co.). About two years ago the commission approved a "procurement" plan/hedging program for Providence Gas that has stabilized gas prices as well as can be expected. The commission has, however, had to grant gas recovery increases because of higher natural gas prices. |
| South Carolina | The state of South Carolina has two natural gas distribution companies -- SCE&G and Piedmont Natural Gas. Both of these companies currently have commission-approved hedging programs that have provided some price stability over the past two years, as we have seen volatile prices at the wellhead. Over the last two years the commission has granted recovery of gas-cost increases to reflect the higher price of natural gas that has not been offset by the hedging programs. |
| Washington | Presentations by the state's four natural gas companies were made before the commission on June 27. The commission has posted on its website a media advisory and a summary of what the panelists had to say. They can be found at natgaspresentation.doc . |

Pass-Through Mechanism for Wholesale Gas Prices

Q: How do higher wholesale gas prices pass through to retail consumers?

A: Under traditional regulatory-pricing procedures, the price of retail gas corresponds to a gas utility's cost of service, which includes both wholesale gas costs and distribution charges. Most states have what is called a "purchased gas adjustment" (PGA) mechanism, which allows a utility to recover the changes in its wholesale gas costs on a periodic basis and without the need for a formal rate review. (The current gas-price problem directly affects gas utilities by increasing the price of wholesale gas that they must purchase to satisfy the demands of their retail consumers.) For example, some states allow monthly adjustments with an annual prudence review of wholesale gas purchases as well as an annual true-up of the difference between actual costs and recovered costs.¹¹ Any costs found not to be imprudent are typically recovered dollar-for-dollar from those retail consumers who purchase gas from the local gas utility. An exception is in those states that have performance-based regulation (PBR) mechanisms that allow purchased gas costs to be recovered from consumers on the basis of a pre-determined cost-sharing formula.¹²

While state commissions have no direct effect on the price of purchased gas paid for by the local gas utility,¹³ they have authority over whether the utility can recover the entire cost of its gas purchases from retail consumers. A state commission may decide, for example, that the utility should have purchased more gas under long-term contracts or hedged with financial derivatives. Depending on a state's

¹¹ Because price adjustments never occur more frequently than once a month, consumers do not see the day-to-day fluctuations in gas prices. PGAs allow a utility to recover changes in its average cost of gas purchases over some specified period of time.

¹² Several states have PBR mechanisms for purchased gas. These mechanisms generally reflect cost-sharing based on the difference between a pre-specified price benchmark and the actual price paid by the utility.

¹³ The commodity portion of gas prices has been deregulated since the 1980s, and the interstate transportation component is regulated by the Federal Energy Regulatory Commission.

interpretation of the prudence standard, a commission could deprive the utility of full recovery of its actual cost on grounds that those costs were not reasonable and reflective of prudent management.

Because wholesale gas costs represent only one component of a utility's total costs recovered from retail consumers,¹⁴ a specific percentage increase in the price of wholesale gas translates into a lesser percentage increase in the retail price. For example, assuming that the wholesale price rises by 50 percent and wholesale gas purchases represent 30 percent of a gas utility's total costs, retail consumers would then see a price increase of 15 percent.

In recent years, residential gas consumers have increasingly purchased their gas from marketers and other third-party providers. These purchases fall within the sphere of what are called "customer choice programs." Typically, third-party providers purchase gas in the wholesale market and have it transported to the city gate of the local gas distribution company.¹⁵ The commodity gas portion of the price is unregulated. Just as in the case of a gas-utility buyer, when the price of wholesale gas rises, this translates into an increase in the cost of the third-party provider. Unless a customer had previously signed a fixed-price contract, the customer would be susceptible to a volatile price. Many residential customers under customer choice programs have opted for fixed-price contracts and are therefore shielded from gas-price volatility over a one-year or two-year time horizon.

Another development that state PUCs may want to be aware of is the concern about the reliability of natural-gas price indices used to value natural gas in the wholesale market. These concerns originated from instances of false trade reporting to some of the newsletters that provide price information to the industry. These price indices often determine how much cost gets passed through to retail consumers. The Federal Energy Regulatory Commission (FERC) has an ongoing

¹⁴ The other major components are transmission or pipeline costs and distribution costs.

¹⁵ The city gate is the point on the gas network where the local gas distribution company takes gas off the pipeline system.

policy initiative to ensure that the price indices used in natural-gas pipeline tariffs represent a reliable price and reflect a level of liquidity that ensures reliability. State PUCs may want to consider whether this issue impacts any of their own market-monitoring activities.

Consumer Options

Q: What can consumers do to mitigate the effects of high gas prices?

A: In most markets when price rises, consumers minimize their economic losses by curtailing their consumption of the good or service. One common response is for consumers to substitute other goods or services for the one whose price has increased. For residential consumers of natural gas, the opportunity to switch to another fuel is greatly limited in the short run. This means that for a given price increase consumers encounter larger economic losses than if they are able to fuel-switch or reduce their natural gas consumption in some other way. .

As noted later in this toolkit, however, consumers can take various actions that would reduce their gas consumption. For example, weatherization and other energy efficiency actions can lower consumers' gas bills. Studies have shown that many residential gas consumers have not availed themselves of low-cost energy-conservation opportunities ("low-hanging fruit") that can reduce their gas bills.¹⁶

As another matter, qualified low-income households should take advantage of available energy assistance funds. Many eligible consumers currently do not receive funds, however, either because they are not aware of assistance or, if they are, they are reluctant to receive aid.¹⁷ For example, some senior citizens attach a stigma to receiving energy assistance, which to them may represent a form of

¹⁶ It should be noted, however, that the average (weather-normalized) consumption of natural gas per residential consumer has decreased by around 22 percent since 1980, according to the American Gas Association.

¹⁷ One approach to increase customer participation in state-mandated low-income energy assistance programs would be for state PUCs to direct public utilities to partner with other state agencies that currently provide health and medical service, which have similar eligibility requirements, and which have a more rigorous re-certification process. This partnership offers a couple of advantages that cannot be achieved through utility outreach efforts alone. First, because health and medical services are more utilized, utilities can reach more customers immediately. Secondly, because other agencies have strict re-certification processes, utilities should see a reduction in attrition rates. Currently, Massachusetts and California are in the process of implementing such partnering programs and Texas has fully implemented this approach to increasing customer participation in low-income energy assistance funds.

welfare payments. Compounding this problem is the fact that in many states energy assistance funds have fallen short of meeting the needs of qualified low-income households.

Consumers should also familiarize themselves with their gas utility's disconnection policies. Some state commissions lack formal rules or policies prohibiting service disconnections during the winter heating season. Consumers should consider contacting their utility prior to reaching the point of disconnection so payment plans can be worked out or funds from assistance programs can be made available.

Consumers should also consider taking advantage of bill payment plans, if offered by their local gas utility, to even out their monthly gas bills. These plans allow consumers to reduce their winter gas bills by paying more during other times of the year when gas consumption is normally much lower. Of course, unlike energy assistance programs, under a bill payment plan consumers are responsible for paying the full cost of gas purchased by the utility. The percentage of residential consumers under bill payment plans varies considerably across states and gas utilities, suggesting that some utilities along with their commissions have more aggressively promoted these plans than others.

Those consumers placing a high value on price stability can select gas services that offer fixed prices. For example, in those jurisdictions with customer choice programs, consumers can consider fixed-price service when offered by a marketer. In addition, some gas utilities have offered fixed-price bundled service, which risk-averse consumers might prefer over traditional bundled sales service whose price varies periodically with movements in wholesale gas prices.¹⁸

¹⁸ It should be noted that fixed or contract prices reflect both current spot prices and expected future spot prices, in addition to the relative degree of risk aversion preferred by gas providers and buyers.

Energy Efficiency

Q: What actions can residential consumers take to conserve their usage of natural gas?

A: In responding to higher natural gas prices, a residential consumer can save money by conserving and using natural gas more efficiently. The consumer can follow a seven-step plan:

1. Acquire information on energy conservation,
2. Determine energy use and cost,
3. Do an energy audit,
4. List all potential projects,
5. Prioritize the list,
6. Take immediate action on the highest-priority energy conservation projects, and
7. Repeat steps one through six for new energy savings as often as possible.

What follows is a detailed description of these steps that a residential consumer can pursue to conserve on the use of natural gas, thereby mitigating the effects of high gas prices.

Step 1 – Acquiring the information

This short guide will assist the consumer on the path to save natural gas at low cost and in a short period of time. There is also a wide variety of free information that is available on energy conservation from various sources. The U.S. Department of Energy, State energy offices, energy utilities, environmental organizations, and natural gas/energy associations can all provide more detailed information to help a consumer conserve on the use of natural gas.

Acquiring this information is as simple as getting on the Internet¹⁹ or going to the public library. Assembling a list of energy conservation advice is the first step to saving energy and money.

Step 2 – Know your natural gas use and cost

Consumers should closely review their natural gas bills. They should find out how their natural-gas usage and how much they are paying for natural gas. This will set a consumer's baseline. The consumer can extract this information from monthly natural gas bills. In some cases the bill also provides the consumer's annual (12-month rolling average) natural gas use. Some utilities will provide a consumer with this information if requested.

A consumer can consider a plan setting out a goal and establishing a priority list of strategies to accomplish some goal. The goal could be to save X amount of natural gas over last month or last year, or Y amount of money.

Even when natural gas prices are declining, the consumer can still save money by using less. In setting priorities, the consumer should know the cost of the equipment and the amount of the annual natural-gas savings buying this new equipment will have over existing equipment. In some cases the consumer can get this information from the label on the equipment. In other cases the consumer may have to estimate this savings from the information found on energy conservation.

For example, if an energy investment costs \$100 to install and the annual energy-

¹⁹ Useful energy conservation and energy efficiency information websites include: (1) DOE's Energy Program: www.energystar.gov, (2) DOE's Energy Smart Schools: www.energysmartschools.gov, (3) DOE's Energy Savers Tips: www.eere.energy.gov/consumerinfo/energy_savers/, (4) Alliance to Save Energy: www.ase.org, (5) DOE's Weatherization Assistance Program: www.eere.energy.gov/weatherization_assistance, (6) DOE's Energy Efficiency and Renewable Energy Clearinghouse (EREC): www.eren.doe.gov/erec/factsheets, (7) National Association of State Energy Officials (NASEO): www.naseo.org, (8) ACEEE Report on Energy Efficiency/Gas: www.aceee.org/energy/efnatgas-study.htm. An excellent source of additional websites can be found in DOE's "Energy Savers Tips on Saving Energy and Money at Home," available online at: www.eren.doe.gov/consumerinfo/energy_savers.

cost savings are projected to be \$50 per year, the consumer's investment will pay for itself in two years. Once the cost of the equipment is paid the rest is pure savings. This is called a simple payback method.²⁰

The next step in setting priorities to meet the consumer's goal to save money is doing an audit.

Step 3 – Energy audit

A consumer has the choice of either doing her own energy audit (with help from online services) or hiring an expert. An energy expert will charge for doing the audit but this amount can be much less than the potential savings from consuming less natural gas. The do-it-yourself model can be assisted by various online audits available through the U.S DOE, U.S. EPA, State Energy offices or various energy and environmental organizations.

Step 4 – List all potential low-cost projects

After the energy audit is completed, the consumer can then review different techniques and equipment for saving natural gas. The consumer can always add to the list provided below by checking web-based free audits on energy conservation strategies or materials from the local library.

A. Building Envelop – Minimize heat use

The consumer can do the following at little cost : (1) stop leaks and reduce heat transfer, control humidity and sunlight to improve heat again, (2) tighten up loose windows and doors with weather-stripping, (3) seal cracks around windows and door frames, where the walls meet the foundation and where pipe or other cable

²⁰ The payback period (in years) equals the cost of the equipment divided by the annual energy-cost savings (\$/year).

enter through the building, (4) replace broken glass panes in windows, (5) fix doors and windows to operate and close properly, (6) adjust, replace or install automatic door closers, and (7) cover window air conditioners.

B. Heating System

The consumer can do the following at little cost: (1) lower the thermostat – keeping the thermostat a bit lower but still comfortable can produce substantial savings, (2) when the consumer is not home, turn down the thermostat to a lower setting, (3) turn the heating system down to a lower but comfortable setting at bedtime, (4) close the curtains at night – keeping them open on sunny days, (5) minimize use of exhaust fans, (6) replace air filters regularly, (7) adjust air ducts to maximize heating where needed, (8) test and tune-up the heating system – routinely, and (9) maximize use of passive solar heating.

C. Hot Water Heater

The consumer can do the following at little cost: (1) insulate the hot water heater, (2) lower the temperature setting to proper settings for needs, (3) insulate hot water pipes, (4) install water-conserving showerheads, (5) install aerators on sink faucets, (6) minimize and reduce the amount of hot water used, (7) eliminate leaks, and (8) clean out sediment from hot water tank – 2 to 5 gallons every six months.

D. Cooking

The consumer can do the following at little or no cost: (1) turn equipment on when ready to cook including preheating, (2) use only as high a temperature as is needed – medium or low heat, (3) open oven doors at a minimum, (4) cook larger volumes of food and reheat, (5) adjust the flames so the tips just touch the pot or pan and (6) not overuse the exhaust fan by operating it more than needed.

E. Washing/Drying

The consumer can do the following at little cost: (1) reduce the water temperature from a hot water heater to the minimum needed, and (2) wash a full load.

Step 5 – Prioritize the list

Subsequent to a walk-through audit and a review of the above list – along with supplement information from a website audit and conservation information – the consumer can compile a list of projects. The list should then be prioritized.

As a rule of thumb, the consumer should pick projects that get the largest “bang for the dollar,” that is, the most natural gas saved for a given amount of money. This analysis should take into account the consumer’s lifestyle and needs. As an example, a family of five with three teenagers that take 30-minute showers would probably find installing water conservation showerheads is a good strategy. On the other hand, a single-member household that takes baths would probably not find this strategy to be cost-effective.

Step 6 – Do it

The consumer should follow up on her list of priorities. Obviously, compiling a list does not help unless the consumer uses it to take action.

Step 7 – Repeat

A consumer should start slow, taking a part of the savings and reinvesting them in more energy savings until the goal is reached. The consumer can also evaluate what worked and adjust her goals accordingly, and then start over again.

Finally regarding the benefits of energy efficiency, a recent study released by the American Council for an Energy-Efficient Economy (ACEEE) showed the large effect that energy efficiency can have on reducing natural gas prices. The study identified several states that have aggressively promoted energy efficiency; these states include California, New York and Vermont. The study, consistent with the recommendations of Speaker Hastert's Task Force on Affordable Natural Gas,²¹ argues that energy efficiency represents a critical response to high natural gas prices. The ACEEE study can be found at www.aceee.org/energy/efnatgas-study.htm.

²¹ See the Speaker's Task Force for Affordable Natural Gas, U.S. House of Representatives, *Summary of Findings*, September 30, 2003. The last section of this toolkit contains a list of the Task Force's other recommendations.

Energy Assistance

Q: What assistance is available to low-income households?

A: Low-income customers may qualify for energy assistance programs administered by the state or federal government. For example, several states have low-income programs that (1) subsidize low-income households who otherwise would find it difficult to pay their gas bills, especially during the winter months, and (2) provide weatherization measures to reduce energy consumption and produce more energy efficient homes.

One major source of assistance is the Low-Income Home Energy Assistance Program (LIHEAP). This program is a block grant program administered by the U.S. Department of Health and Human Services (HHS). Congress established the formula for distributing funds to the states based on each state's weather and low-income population. All states and the District of Columbia receive LIHEAP grants each year.

To be eligible for a LIHEAP grant, a household's income must not exceed the greater of 150 percent of the federal poverty level or 60 percent of the state's median income. The highest level of LIHEAP assistance goes to those households with the lowest incomes and highest energy costs or needs in relation to income, taking into account family size. States and other grantees must conduct outreach activities designed to ensure eligible households, especially households with elderly or disabled individuals and households with high home energy burdens, are made aware this assistance is available. States and other grantees also must coordinate and leverage their LIHEAP programs with similar and related programs.

LIHEAP funds may be made directly to eligible households or to home energy suppliers who agree to comply with the provisions of the statute. At the grantee's option, assistance may take the form of cash, vouchers, or payments to third

parties, such as utility companies or fuel dealers, on behalf of eligible households. Owners and renters must be treated equally.

The LIHEAP statute authorizes a contingency fund of approximately \$850 million. The President may release these funds to assist with the home energy needs arising from an emergency situation. In the past, the President generally has released these funds in response to emergency situations arising from extreme weather conditions or energy-price increases. Generally, these funds have been distributed based on the degree to which specific states are affected by the weather or energy-price situation that led to the release of contingency funds.

Other sources of assistance for qualified low-income households include programs that are either state-mandated or implemented by a utility on a voluntary basis. Examples of such programs are demand-side management programs, state-required or company-specific assistance programs, and customer assistance programs. Numerous demand side programs operate around the country. In Minnesota, for example, all state-jurisdictional gas utilities are required to spend at least 0.5 percent of their gross operating revenues on conservation improvement programs such as weather audits, weatherization and rebates towards the purchase of energy efficient appliances. A portion of this money must be spent on residential conservation improvement programs for renters and low-income persons. State PUCs can work closely with utilities and low-income groups to ensure the availability of these programs is effectively communicated to the public prior to the onset of winter.

An example of a state-mandated, company-specific program is the Ohio Percentage of Income Program or "PIP," as it is frequently called. Under this program, a qualifying consumer in Ohio pays the gas utility a fixed percentage of her income for utility service, regardless of usage. Some programs may require the consumer to make a monthly contribution on any arrearage. The Ohio PIP programs are

individually administered by each gas utility and funded by mandatory contributions from the utilities' customers.

Another example of a state-mandated program is California's Alternate Rates for Energy program ("CARE"). This program provides eligible low-income customers a 20 percent rate discount on their electric and natural gas bills. The CARE program is funded through a rate surcharge paid by all other utility customers.

An example of a customer assistance program (or "CAP") is a program currently operated by a Kentucky gas utility funded by a mandatory contribution from residential customers. The customer funding is matched, dollar for dollar, by the company's shareholders. The funding is capped at 1.5 cents per Mcf or about \$1.50 per customer per year. The program is administered by a local low-income advocacy organization.

Other innovative programs currently exist in Alabama, Illinois and Wyoming. In Alabama, there is a state-wide program called "Project Share." Through this program, utility customers can voluntarily contribute one dollar a month to the Project Share fund. The fund is administered by the American Red Cross, which uses the money to pay utility bills of customers in need. Wyoming has a similar program ("Energy Share of Wyoming"). In Illinois, there is a voluntary program known as "Hands-Up." This program is a community/utility partnership that allows customers to work off their utility bills at a rate of \$10 per hour by providing labor for community needs or by attending certain classes.

Besides providing direct bill assistance in the form of cash subsidies to low-income customers, the federally administered LIHEAP program also provides weatherization measures. Approximately 25 percent of a state's allotted grant award goes to weatherization measures with added funding for crisis services.

Additionally, some states mandate supplementary utility-funded no-cost weatherization services to low-income households. In California, for example, by statute, state-jurisdictional utilities must budget a minimum level of funding for weatherization measures. These measures include attic insulation, energy efficient furnaces, weather-stripping, water heater blankets and other measures to reduce air infiltration.

The federal government can take various actions to increase funding levels to low-income households:

1. The first is to appropriate, at a minimum, the current LIHEAP funding levels for FY 2004. The current funding level for the federally-administered LIHEAP program is approximately \$2 billion for the base program and \$855 million for emergency situations. The House and Senate have passed their respective versions of the FY 2004 Labor, HHS and Education Appropriations Bill. The Senate bill maintains existing funding levels of \$2 billion while the House measure provides \$300 million less in regular state grant funding than the Senate bill.

Noting the increase in natural gas prices and recognizing the constraint on state budgets and the vital role that LIHEAP plays in providing assistance to low-income households, NARUC, at the July 2003 summer meeting, passed a resolution urging Congress to appropriate \$3.4 billion in LIHEAP funding for FY 2004 and an advance appropriation of \$3 billion for FY 2005.

2. Increase LIHEAP funding to \$3.4 billion as proposed in the energy bill. At the time of this writing, the energy bill is in conference committee with a couple of proposals to modify and increase the LIHEAP funding levels. The Republican proposal would increase total base-program grant funding to \$3.0 billion and \$1.0 billion in emergency funding. The Democratic proposal would increase

base program funding to \$3.4 billion. In addition, the eligibility cut-off would be increased from the current 150 percent of federal poverty levels to 250 percent.

3. The federal government is the largest natural gas producer in the United States. It owns approximately 38 percent of the gas-producing land in the US. With increasing natural gas prices, the federal government expects to earn approximately \$6 billion in gas royalties this year. In 1999, the federal government earned approximately \$2 billion in royalties, all of which were diverted to federal and state treasuries. As the increase in gas royalties is a direct result of rising gas prices, state commissions may want to encourage the federal government to make use of the gas royalties for relieving the burden of low-income households from increasing natural gas prices, rather than allocating the "windfall" to the federal and state treasuries.

The federal government can either (1) collect the gas royalties in actual gas instead of money and then sell the gas directly to low-income households at a discounted rate, or (2) use the gas royalties to supplement utilities' low-income assistance programs. By collaboratively working with producers, pipelines and utilities, gas royalties can be directed to the needy and avoid LIHEAP's 10 percent administrative costs – thereby increasing the bottom line for low-income customers. Gas royalties should not, however, be the source of any increased LIHEAP grant funding levels.

In assisting low-income natural gas consumers, state PUCs can consider the following actions:

- Increase consumer awareness of energy and weatherization assistance programs.
- Refer low-income households to energy assistance programs and local community agencies. Consideration should be given to approving emergency customer assistance programs (such as Ohio's PIP, California's CARE or

Kentucky's CAP programs) on at least a pilot basis, if none exist presently. In addition, regulators should identify those agencies and organizations that can assist consumers with payment problems. States may also want to consider innovative assistance programs, such as those in Alabama, Illinois and Kentucky.

- Provide assistance for energy weatherization and other conservation programs to buffer the impact of high gas prices. In some states, this assistance is provided directly from utilities, and in other states it is provided by local community service agencies. States may want to consider encouraging or requiring the gas utilities in their states to expand, re-instate, or develop gas demand-side management energy conservation programs, especially those programs that are designed for low-income consumers.
- Urge Congress to increase LIHEAP funding levels to \$3.4 billion, increase eligibility requirements to 250 percent of federal poverty levels, and increase federal weatherization assistance program funding by \$1.2 billion over the next ten years. This funding increase would roughly double existing funding levels for weatherization measures.
- Urge Congress to appropriate gas royalties to low-income assistance programs (see earlier discussion) to help offset increasing natural gas prices.

Federal Energy Emergency

Q: In the event of a full-scale energy emergency, how will the federal government coordinate its response?

A: The U.S. Department of Energy has recently created the Office of Energy Assurance (OEA). This office supports the national security of the United States by working in close collaboration with state and local governments and the private sector to ensure the reliable and secure operation of the Nation's energy systems.

On March 1, 2003, portions of the DOE Office of Energy Assurance were transferred to the Department of Homeland Security (DHS) as part of a federal government-wide reorganization of homeland security functions pursuant to the Homeland Security Act of 2002. After the transfer, DOE reconstituted a new OEA. The National Strategy for Homeland Security (2002) and the National Strategy for the Physical Protection of Critical Infrastructures and Key Assets clarify federal responsibilities and assign DOE primary responsibility for coordinating protection activities within the energy sector; these activities include developing and maintaining collaborative relationships with state and local governments and industry. In addition, DOE retains responsibility for the energy emergency support function (ESF-12) of the National Response Plan. These DOE responsibilities are distinct and complementary to those transferred to DHS.

OEA coordinates energy assurance activities within the Department of Energy, including those with the Office of Fossil Energy (FE), the Energy Information Administration (EIA), and the Office of Policy, Security Operations. In the event of an energy emergency, OEA also coordinates and communicates information with State energy agencies through the Energy Information Coordinators System (EEIC). OEA provides an integrated and coordinated Departmental response to all energy emergencies. Additional Information about OEA can be found on the website at

www.ea.doe.gov. Questions about OEA can be directed to Alice Lippert, (202) 586-9600.

Also, the National Association of Regulatory Utility Commissioners (NARUC) has established the Emergency Gas Reallocation Working Group, which is comprised of state and federal energy regulators, as well as representatives from the energy industries, in order to determine and examine the potential impacts and regional implications of interruptions in utility services. This effort currently is on-going, with the current phase including a survey of state curtailment plans. This effort, in conjunction with OEA and FERC, will assist in a more collaborative approach to resolving energy emergencies on a regional or national level.

State Commission Actions for Consideration

Q: What options should state PUCs consider in addressing the problem of high gas prices?

A: To begin with, state PUCs can consider developing an effective and comprehensive communication strategy to use within their own agency and other state agencies, with elected officials, utilities, intervener groups, local social service agencies, senior citizen groups and low-income groups. As a component of a comprehensive communication strategy, states may also want to develop fact sheets or brochures explaining the potential for price increases and the reasons for these increases. This information can be distributed in response to questions and complaints about high gas bills as well as being made available on state PUC web sites. State PUCs might also consider issuing press releases and meeting with the media. They may also want to consider holding workshops/community meetings with affected stakeholders to develop a higher level of awareness concerning natural gas prices. Finally, state PUCs may want to consider training personnel in their consumer services division to respond to questions about how gas rates are set, the impact of wholesale gas prices on customers' bills, and the ability of state commissions to regulate those markets.

Many good examples of fact sheets, brochures, press releases and model customer bill inserts are already available on the websites of some state PUCs, as well as of the U.S. DOE Energy Information Administration, and the American Gas Association. Additional information can be found in the National Regulatory Research Institute's July 2003 compilation of responses to a survey conducted by the NARUC Staff Subcommittee on Public Information Officers, entitled *State Activities in Response to the Current Gas Supply Situation*.²²

²² The responses from individual states were presented earlier in this toolkit.

State PUCs and the gas companies generally rely on traditional consumer protection practices and assistance mechanisms. Many of these practices and mechanisms have been discussed in earlier sections of this toolkit. States may want to review, and perhaps modify or consider, adopting these practices, which fall into four categories:²³

- The first is cold weather disconnection rules, where gas utilities are prohibited from cutting off service to customers under pre-determined weather conditions. State PUCs may want to consider reviewing existing service disconnection policies as well as precluding disconnections during the winter heating season. States that do not have cold weather disconnection policies or rules may want to consider whether emergency provisions are needed, and if so, whether this would be possible under existing state laws.
- The second is levelized/budget billing plans, where customers can avoid unusually high gas bills during the heating season by paying more during other times of the year. If they have the legal authority, state PUCs may want to consider requiring utilities to offer budget payment plans if utilities are not presently required to do so. The availability of various payment options should be communicated to consumers. In those states that have budget payment plans, the state PUC may want gas utilities to more aggressively promote these plans. As a variation of conventional levelized/budget billing plans, State PUCs may want to encourage gas utilities to extend the arrearage repayment period for consumers. Most current plans allow gas consumers to spread payments over the course of a year.
- The third is notifying consumers about existing energy assistance programs and referring low-income households to energy assistance programs and local community agencies. State PUCs may want to consider approving emergency customer-assistance programs on a pilot basis, if none exist. In addition, regulators should identify social service agencies and community organizations that can assist consumers with payment problems.

²³ Some of these were briefly discussed earlier in the toolkit.

States may also want to consider developing innovative or non-traditional assistance programs, such as those in California, Kentucky and Alabama, which were discussed in an earlier section of this toolkit.

- The fourth is assistance, if available, for energy weatherization and other demand-side energy efficiency programs to buffer the impact of high gas prices. In some states, this assistance is provided directly from utilities, and in other states it is provided by local community service agencies. States may want to consider encouraging or requiring the gas utilities in their states to expand, reinstate, or develop gas demand-side energy efficiency programs. In addition, states may want to communicate with consumers about the value of energy-efficiency actions; for example, reducing the thermostat from 72 degrees to 68 degrees, the potential benefits of energy efficient appliances, and techniques for winterizing homes.

Energy efficiency programs can range from information dissemination about the benefits of energy efficiency, monetary subsidies offered for the purchase of energy efficient appliances, to free or low-cost energy audits. Because of higher gas prices, some energy efficiency actions that were previously not cost-effective during the period of low gas prices might be economical in today's high gas-price environment.

State PUCs may want to consider more aggressively promoting demand-side energy efficiency this winter through education programs and other forms of information dissemination. Consumers can consequently become better aware of opportunities to reduce their consumption of natural gas during the heating season. The U.S. Department of Energy has identified various actions that homeowners can take to conserve on their use of energy for heating. As mentioned earlier, this information is published in the Department's Energy Saver brochure and is available on its website.

Other options may be available to PUCs, although these may require major commission actions or may not be feasible because of legal, institutional and other constraints. All of these options have the primary objective of lowering consumers' gas bills during the heating season when most residential consumers use gas at their peak levels, while maintaining service quality and reliability.

One of these options calls for state PUCs to review and closely monitor gas costs passed through to consumers. This could take the form of increased attention paid to the review of utilities gas purchasing decisions and conducting more extensive gas-purchasing audits and prudence reviews of those decisions. State PUCs may also want to give more attention to upfront review of utilities' gas procurement strategies, including those contained in resource and supply plans for those states where gas utilities are required to make such filings. States may want to pay particular attention to the mixture of resources used by gas utilities in their state and to ensure that these resources meet the policy goals of the state. For example, if price stability rather than lowest-cost supply is the primary state-policy objective, the state PUC may want to communicate that policy objective to the gas utilities and encourage them to contract for significant quantities of fixed-price gas and more actively use financial derivatives.²⁴

State PUCs may also want to consider the extent to which hedging activities (physical and financial hedges) by gas utilities fit into state policy objectives – for example, the value of long-term, fixed-price gas contracts, and the value of using natural gas and weather-related financial instruments to help stabilize purchased gas costs. In recent years it has become more widely acceptable for gas utilities to recover the cost of financial derivatives acquired to hedge limited amounts, (e.g. variable supply requirements during the heating season or swing gas supplies) of their gas purchases. In other jurisdictions, more expansive use of hedging tools is authorized as part of a utility's gas purchasing incentive plan or as part of a hedging

²⁴ Since the winter of 2000-2001, state PUCs have placed increased emphasis on gas utilities achieving a better balance between reasonable prices and stable prices. In attaining more stable prices through financial hedges and other tools, however, consumers may end up paying higher prices over the long term.

pilot program. State PUCs should recognize the risks involved in allowing utilities to use these tools.

Another longer-term option would call for state PUCs to examine various rate design alternatives. States may want to consider whether (1) the gas cost recovery mechanism in their state is working effectively in balancing the objectives of low-gas costs and low-price risk, (2) innovative regulatory tools such as performance-based or incentive gas-cost recovery plans, whose purpose is to provide a utility with stronger incentives to control its purchased gas costs, would be appropriate, (3) existing weather normalization adjustment mechanisms should be reviewed to determine if weather normalization adjustments are working appropriately or need to be modified, and if they are not being used, whether it would be appropriate to encourage gas utilities to develop such mechanisms, (4) gas utilities might be encouraged to develop and offer fixed-price or fixed-bill tariffs, and (5) existing rate designs and policies should be modified (e.g., allocation of fixed costs between volumetric billing elements and customer/demand billing elements) to send better price signals to consumers as well as to shift costs from the winter heating season to other time periods.

States may want to review existing purchased gas adjustment clauses (PGAs)²⁵ and consider modifying how often gas utilities are allowed to adjust their rates in response to rapidly changing commodity prices. In some cases, state PUCs may find it appropriate to increase the frequency of authorized adjustments (for example, monthly or quarterly in times of volatile prices) to allow the utility to keep up with changing commodity prices and to prevent a large accumulations of deferred costs that need to be reconciled in catch-up rate adjustments. More frequent adjustments also allow decreases in commodity gas prices to be passed on to consumers more quickly. Alternatively, state PUCs may find that decreasing the frequency of adjustments and allowing utilities to defer a portion of their gas costs above a

²⁵ Incidentally, over the past few years some gas utilities have pushed for including uncollectible debt as a component of the PGA.

certain threshold for recovery in less heat sensitive months benefits consumers by stabilizing rates.

As an example, a state PUC may want to consider freezing the price of purchased gas that can be recovered from consumers, at some pre-specified level, during the winter months. To avert financial difficulties for a gas utility, the commission may allow the utility to recover any negative balances at a later time. In effect, the cap would smooth out the utility's recovery of fluctuating gas costs over the course of a year. Freezing the price of commodity gas during the winter months, however, may have a downside. Specifically, consumers could receive distorted price signals and the utility deferred costs could accumulate to significantly high levels placing the utility in financial distress.

For the longer term, states may want to look at innovative regulatory tools such as performance-based or incentive gas cost recovery plans, or innovative financial mechanisms such as weather risk insurance.²⁶ State PUCs may want to review and consider developing, or modifying, if appropriate, any existing performance-based or incentive gas cost recovery plans. If such plans have not been considered, state PUCs may want to look at whether such plans would be permitted under existing statutes in their jurisdiction, and if so, whether they would be appropriate. The design of performance-based rate and incentive mechanisms can be complex; it may also require making comparisons between the cost and efficacy of gas-cost prudence reviews by state PUCs and the potential benefits that might not otherwise be realized by allowing utilities to share in the benefits that are the result of more effective and efficient gas purchasing strategies and decisions. Performance-based or incentive gas cost recovery plans are currently in use by gas utilities in several jurisdictions.

²⁶ Another innovative rate tool, which has been put forward by some gas utilities, is what is called a revenue adjustment mechanism where the utility is able to automatically adjust its rates when actual sales depart from targeted (i.e., rate-case-determined) sales. One objective of this mechanism is to reduce the disincentive that utilities may have under conventional rate-making procedures to promote energy conservation. Earlier this year, the Oregon Public Utility Commission gave its approval to such a mechanism for Northwest Natural Gas Company.

More recently, a few gas utilities have begun to explore and experiment with using weather-related derivatives to help offset weather-related increases in cost. The market for weather-related financial instruments that can be used for hedging purposes has evolved over the last several years. At the minimum, state PUCs and the utilities they regulate should acquire an understanding of what kind of weather-related hedging tools are potentially available and whether these tools would be appropriate for regulated companies to use.

Another longer-term option is for state PUCs to consider authorizing their gas utilities to implement weather-normalization adjustment mechanisms to help moderate gas bills during the winter months. For example, when winter weather is colder than normal, this mechanism would automatically reduce the total cost of gas charged to consumers. Of course, weather normalization can be a two-edge sword for consumers – a warm winter would raise the total cost of gas charged to consumers. Perhaps most important, weather normalization has the potential to mitigate the worst-case scenario where consumers pay extremely high gas bills during the coming winter season because of both high gas prices and high gas consumption.²⁷

In states that do not have customer choice programs, and perhaps in other jurisdictions as well, state PUCs may want to encourage gas utilities to consider the offering of a fixed-price or fixed-bill tariff. Several states have developed pilot programs that allow consumers to pay either a fixed-price for the commodity-gas portion of their bill or, as in the case of at least two states, have authorized pilot programs that allow customers to pay a fixed-bill amount each month regardless of actual usage and the market price of natural gas. In a regulated environment, these programs can be difficult to design, implement and administer. Under certain

²⁷ In states that have implemented or are considering weather-normalization adjustment mechanisms, various issues have arisen relating to whether a "dead band" should be included, the appropriate measure of normal weather, the measurement of weather-sensitive usage, and whether adjustments should occur monthly or once at the end of the winter heating season.

conditions, however, for example in states that have not unbundled or restructured or where customer choice programs are not widely available, state PUCs may find that these kinds of regulated tariff offerings are a valuable alternative for customers that want more control over their utility bill. On the negative side, fixed-price or fixed-bill tariffs may result in higher gas bills over time because of (1) wholesale gas prices dropping unexpectedly, and (2) the additional costs to the gas utility from hedging that would be required in the provision of fixed-price service.

State PUCs may also want to review existing rate designs and policies. For example, they may consider re-allocating fixed costs between volumetric billing elements and customer and demand billing elements to ensure that the current rate design is not impeding state policy objectives. If the state's goal is to stabilize, rather than minimize, customer bills, state PUCs may want to consider moving toward rate designs based on a straight-fixed-variable (SFV) structure. This would tend to shift responsibility for recovery of a majority of costs to a fixed element of the bill and, consequently, would reduce the portion of the bill that is sensitive to changes in usage related to weather and gas prices. As an illustration, a SFV-type rate design would shift customer costs away from volumetric billing elements. This could have the effect of reducing winter gas bills and increasing gas bills during other times of the year. This levelization of gas bills over the course of a year could help to lighten the burden of consumers paying high gas bills during the winter months, in addition to giving consumers better price signals. Commissions may also want to review their low-income discount tariffs and other rate structures that assist those consumers who are least able to absorb large bill increases.

Alternatively, state PUCs that want to encourage energy efficiency may want to look at ways to send strong price signals that go beyond the normal fluctuations in customer bills that are related to heating-season gas usage. It should also be noted that in many states comprehensive changes in rate design are usually only accomplished in a utility's rate case or in a state-wide rulemaking, thereby requiring significant commitments of resources by a utility and the state regulatory agency.

In states with unbundled services or gas choice programs, the PUC can consider providing consumers with additional information regarding the marketplace and publicizing the importance for consumers to understand and choose a supplier that has a pricing plan compatible with their needs.²⁸ The evidence for existing gas customer choice programs to date indicates consumers can reduce their gas bills by participating in choice programs. Although average savings have been small, relative to the total delivered price of gas, choice programs have contributed toward holding down gas costs for many consumers. As an additional benefit, gas marketers may offer fixed price options. These arrangements allow consumers to take gas over a one- or two-year period at an agreed-upon price that remains constant. While consumers in most situations pay a premium for avoiding price risk, they benefit from knowing their gas costs (exclusive of distribution charges) will not change.

State PUCs may also want to consider how much reliance to place on natural gas to meet their state's energy needs over long-term time periods. While this is a highly complicated and potentially divisive issue, state PUCs may want to recognize the importance of addressing this issue in a way that is consistent with the state's energy policies.

First, if state PUCs are concerned about the long-term availability, reliability and cost of natural gas supplies, they may want to review and consider the appropriateness of existing policies related to infrastructure expansions (pipelines, distribution systems, storage facilities, and so forth). If long-term gas supplies are a concern, state PUCs may want to look at modifying any policies currently in place that provide incentives or subsidies for the development of new load or the conversion of existing electricity, propane, heating oil, or other energy load to natural gas. For example, if current state policies allow gas utilities to provide free-

²⁸ For example, some consumers may be highly risk averse and prefer fixed-price service, while other consumers may opt for variable-price service with the likelihood of paying lower prices over a multi-year period.

footage allowances to new or converting customers or subsidies for installing inefficient natural gas burning equipment and appliances, states may want to consider whether these subsidies and incentives are still appropriate and who should bear the cost of these subsidies and incentives. Alternatively, if long-term supplies are not a concern but there are constraints in a state's existing energy infrastructure that impede access to supplies, state PUCs may want to consider developing policies that provide incentives to branch out existing distribution systems and encourage the development of new pipeline and storage infrastructure.

Second, in states that have a formal, regulated resource planning process for electric utilities or that require electric utilities to obtain certification for new electric generation facilities in advance of construction, state PUCs may want to consider what emphasis should be given in the regulatory process to concerns about encouraging fuel diversity for electricity generation.²⁹ (States may also want to recognize that encouraging fuel diversity may mean finding a place in the mix for clean coal technologies and other technologies; fuel diversity may also mean encouraging the development of renewable energy-portfolio standards.) In those states that have deregulated the generation component of the electric industry and rely on market-based economic factors to determine an appropriate mix of fuels for electric-generation purposes, other, more creative approaches may need to be considered. The electric industry supports a national energy policy where fuel diversity in the production of electricity would be encouraged. In a recent statement before the U.S. House of Representatives, the Edison Electric Institute argued that "Congress and the President [should] make sure that federal policies assure that an adequate and diverse fuel supply is available for the generation of electricity." The statement defines fuel diversity to include fuel-switching or dual fuel capability where "natural gas-fired plants are constructed and permitted to allow a switch between natural gas and oil products in times of either high prices or limited natural

²⁹ One concern is that most new electricity generating facilities in the United States are gas-fired and that most of these facilities lack dual-fuel capability. According to one estimate, only about 7 per cent of the planned gas-fired generating capacity can use another fuel. There is also the concern that the regional gas-pipeline transportation network will lack sufficient capacity and will not be able to meet the special demands of electric generators.

gas supplies."³⁰

³⁰ Edison Electric Institute, *Statement by the Edison Electric Institute*, before the House Committee on Energy and Commerce, June 10, 2003.

Other Groups' Activities

Q: What work has been done by non-NARUC groups in addressing the problem of high natural gas prices?

A: Numerous groups have been studying the implications of higher natural gas prices. Several of these groups, including the National Petroleum Council (NPC), the American Gas Association (AGA) and Speaker Hastert's Task Force on Affordable Natural Gas (TFANG), have issued reports or made recommendations that will be covered, as appropriate, in Phase II of the NARUC Gas Task Force's activities. The Task Force recognizes that many groups, such as the American Council for an Energy-Efficient Economy (ACEEE), have also issued reports and recommendations that address the implications of higher natural gas prices. In addition, many others, such as the Edison Electric Institute (EEI) and the American Association of Retired Persons (AARP), continue to monitor and study this issue.

The NPC, AGA and TFANG reports and recommendations are summarized below. It should be recognized, however, that at this time these reports and recommendations represent the views of the NPC, AGA and TFANG rather than NARUC.

On September 25, 2003, the National Petroleum Council Report released its study, *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy*.³¹ In this widely anticipated and comprehensive study on the U.S. natural gas market requested by Secretary of Energy Spencer Abraham in March 2002, the National Petroleum Council ("NPC") urges U.S. policy makers to open more lands to

³¹ The NPC is a Federally Chartered Advisory Committee formed to serve and advise the Secretary of Energy. Members include the energy industry, industrial consumers, and government agencies. The study also included contributions from the governments of Canada and Mexico. Over 240 companies participated by providing support in the form of manpower, which included about 300 people in all. Including both cash funding and donated manpower, the NPC Report cost approximately \$30 million.

exploration (the Rockies and the Mackenzie Delta), immediately enact enabling legislation for the Alaskan Pipeline, increase energy efficiency, conservation and dual fuel efforts as well as endorse a streamlined permitting process for liquefied natural gas projects.

The report develops two differing scenarios, "Reactive Path" and "Balanced Future," which forecast potential future supply and demand of the U.S. natural gas market. The "Reactive Path" assumes a "status quo" path of conflicting supply and demand policies, which leads to higher natural gas prices and volatility. Both scenarios assume continued improvements in energy efficiency and conservation, enabling legislation regarding the Alaskan Gas pipeline, expedited LNG terminal siting and increased drilling in the Rocky Mountains. The study maintains that if the "reactive path" is followed, prices will move above \$7 per MMBtu by 2025.

The "Balanced Future" scenario assumes improved fuel flexibility, increased supply diversity, sustained and enhanced infrastructure, as well as promotion of market efficiency. If this more proactive approach is adopted, the study argues that natural gas prices could potentially revert to \$3 per MMBtu by 2025. The "Balanced Future" scenario estimates that traditional North American natural gas sources would provide 75 percent of U.S. demand, with LNG and frontier gas potentially supplying the remaining 25 percent. LNG imports are projected to grow and eventually supply 10 to 15 percent of total U.S. natural gas demand.

The report identifies three problems that have emerged over the last few years. First, a fundamental shift in the supply-demand balance has caused gas prices to be higher and more volatile. Second, North America is moving to a new era in which it will no longer be self-reliant in meeting its growing natural gas needs as production from traditional U.S. and Canadian basins has leveled. Third, perhaps most fundamental for rationalizing major reforms, government policy encourages the use of natural gas but does not adequately address the corresponding need for additional supplies.

The NPC report makes four major recommendations in response to the problem areas identified in the previous paragraph:

1. Improve demand flexibility and efficiency (for example, encourage energy conservation and fuel diversity in electricity generation);
2. Increase supply diversity (for example, increase access to natural gas resources in the lower-48 states and reduce the process time for LNG-facility permit applications);
3. Sustain and enhance infrastructure (for example, increase regulatory certainty and remove regulatory barriers); and
4. Promote efficiency of markets (for example, improve price transparency and market-data collection and reporting).

The NPC report will be more extensively covered in Phase II of the NARUC Natural Gas Task Force's activities. The Summary, which is 87 pages in length, as well as the full integrated report can be accessed at www.npc.org.

The American Gas Association's (AGA's) "Recommendations to NARUC on actions that can be taken on natural gas supply, demand and prices" can also be found at its website at www.aga.org. Some of the AGA's recommendations to state regulators include:³²

1. Supporting hedging and other gas acquisition programs such as the use of longer-term contracts to assist in tempering price volatility;
2. Continuing the use of off-season natural gas storage;

³² Additionally, the AGA's recommendations include other useful "Fact Sheets" that can be found intermittently throughout its web site. These include the following topics: (1) frequently-asked-questions concerning natural gas market trends, as of August 20, 2003, (2) energy efficiency tips for residential consumers, (3) examples of successful energy efficiency education programs from natural gas utilities throughout the U.S., (4) sources for information about natural gas supply, demand and prices, (5) examples of successful attempts of natural gas utilities reaching out to assist low-income consumers, and (6) low-income home energy assistance programs, with facts and figures as of August 2003.

3. Promoting stabilization (for example, levelized and budget billing) programs to consumers;
4. Encouraging economic efficiency through innovative rate design;
5. Encouraging increased natural gas production;
6. Encouraging the efficient use of natural gas including the development of natural gas generating turbines that have dual-fuel capability;
7. Supporting higher funding for low-income assistance (LIHEAP) through efforts to increase the LIHEAP funding levels to \$3.4 billion; and
8. Considering the inclusion of uncollectible debt expenses as part of a utility's purchased gas recovery mechanism.

Finally, House Speaker J. Dennis Hastert commissioned a Task Force on Affordable Natural Gas (TFANG) in July 2003 to report to him by September 30, 2003 on the causes of the current natural gas shortage, the impact of natural gas prices on the U.S. economy, and short-and long-term ideas to encourage a stable supply of natural gas to ease prices to consumers and job-creating industries. The findings, similar to the NPC report, show an imbalance between the nation's natural gas supply and demand. Unlike the NPC report, however, the Hastert report states that "[r]ecent studies estimate that the total technically recoverable North American natural gas resource is sufficient to meet our current demand needs for many generations." (The complete report can be found at www.house.gov/speakerweb/tfangfindings.pdf.)

TFANG's major recommendations largely focus on policies that will increase the U.S. supply of natural gas. As such, they do not directly pertain to the topics in this toolkit. Nevertheless, they are listed below:

1. The U.S. government must ease its policies restricting the development of reserves on federal lands.
2. The Bush Administration should pursue an inventory of gas resources on federal lands.

3. A new federal office to coordinate the permitting and environmental review of gas drilling applications should be established.
4. Financial incentives for gas production on "marginal" lands as well as on the Outer Continental Shelf should be developed.
5. The Bureau of Land Management should streamline the approval of the development of new gas fields.
6. Royalty incentives for gas output in shallow, deep and ultra-deep waters of the Gulf of Mexico should be created.
7. Dependence on LNG as an additional supply is not supported as a potentially viable short-term option because of the extensive capital investment, governmental permitting, and legal challenges entailed.

EXHIBIT

DE Ohio EX. 64

GAS RATE FUNDAMENTALS

**Fourth Edition
1987**

American Gas Association Rate Committee
1515 Wilson Boulevard, Arlington, VA 22209

GAS RATE FUNDAMENTALS

earnings per share of common
links between incremental
and incremental capital can
be.

Revenues for
1979, 1981 and 1983

| 1981 | 1983 |
|------------|------------|
| 347,280 | 364,860 |
| 35,800 | 41,300 |
| 2,350 | 2,250 |
| 190 | 170 |
| 4 | 3 |
| 1 | 3 |
| 39,242,640 | 38,675,160 |
| 19,153,000 | 21,476,000 |
| 32,900,000 | 29,250,000 |
| 32,300,000 | 22,100,00 |
| 1,060,000 | 570,000 |
| 175,000 | 600,000 |
| \$ 223,683 | \$ 259,124 |
| 106,299 | 140,668 |
| 171,080 | 181,350 |
| 164,730 | 104,975 |
| 3,922 | 2,679 |
| 140 | 450 |
| \$5.70 | \$6.70 |
| 5.55 | 6.55 |
| 5.20 | 6.20 |
| 5.10 | 4.75 |
| 3.70 | 4.70 |
| .80 | .75 |
| 113 | 106 |
| 535 | 520 |
| 14,000 | 13,000 |
| 170,000 | 130,000 |
| 265,000 | 190,000 |
| 175,000 | 200,000 |

Chapter 14 Load Forecasting

Technical Editor: Joseph A. Bettinger, National Fuel Gas Company

FORECASTING AND RATEMAKING

For a gas company, forecasting future loads is an essential part of the ratemaking process. When cost levels were relatively constant, rate proceedings were based on historical cost data. In the 1970s, with costs increasing rapidly and, more recently, with operating conditions changing dramatically (e.g., because of conservation and competition), utilities have resorted to frequent rate increases to preserve financial viability. Because of the lag between preparing a rate filing and receiving rate relief, a company can no longer rely solely on historical data. If it did, the company's level of rates would remain hopelessly behind its level of costs. In addition, competitive pressures have created a need for innovative rate designs. This has increased the complexity of rate filings and the importance of sales forecasts.

There are three kinds of gas-load forecasts. Short-term (monthly) forecasts are needed for operating purposes and for matching hourly or daily gas supplies to loads. Mid-term (one- to three-year) forecasts are necessary for ratemaking, financial planning, making certain operating decisions, and scheduling some construction. Long-term (longer than three years) forecasts are essential for developing long-range gas-supply and construction plans. Because of its relevance to ratemaking, the mid-term forecast is given primary consideration here.

Utilities forecast gas requirements and gas sales. *Requirements* are the amount of gas a distribution company could sell if it had unlimited supplies of gas and sufficient line capacity to deliver that gas whenever its customers wanted service. This includes gas volumes needed for company use and a balancing figure called "unaccounted for gas." *Gas sales* are the volumes actually delivered to customers. Because of supply and

pipeline limitations, gas sales may be less than gas requirements. The difference is called "unsatisfied demand."

THE FORECASTER'S CHANGING PROBLEMS

Through the early 1960s, gas distribution systems were able to supply most of their customers' requirements. On days of extreme cold weather, interruptible customers would be curtailed occasionally. In the early 1970s, that situation changed drastically. Because of gas shortages, interruptible customers were severely cut back. Steam-electric generating plants, which had depended on natural gas, were forced to burn fuel oil or to revert to coal. In the early 1980s, gas supplies have been abundant. Nevertheless, large customers have shifted from gas to residual oil as relative prices have made fuel switching economic. This has spawned new gas rate designs as distribution companies have struggled to retain their market shares. Gas sales, of course, depend on gas market conditions as well as those of the oil business.

The company forecaster must deal with these market interactions in projecting gas sales (volumes) and revenues (dollars) as well as factoring in the anticipated cost of the gas purchased. In forecasting revenues, the mix of sales (i.e., the proportion of residential to industrial sales) is an important factor. Today, the interruptible nature of large-volume industrial sales poses a particular problem for the forecaster. Moreover, new rate designs, competition, and load management add to the traditional volatility or unpredictability of interruptible sales. Finally, some gas distribution companies have transportation contracts with the same customers that are eligible for innovative rates. By creating an internal competition between types of gas service, this increases the uncertainty of forecasting. In brief, the forecaster is faced with helping the utility manage risks. Thus, the accuracy of a forecast becomes more important at times when making one becomes more difficult. New rate designs and contract carriage now require forecasters to make multiple forecasts each with its own set of possibilities.

Because utilities' needs differ, there is no single method of forecasting that is best for all companies. Some utilities use procedures that are understood and accepted by the local regulatory agency. Some companies need detailed forecasts, while others rely on a more general approach. Some utilities have extensive accounting and record-keeping facilities, which make more information available to the forecaster. Some systems are quite diverse in types of customers served, weather conditions, and economic characteristics.

A traditional forecast shows monthly requirements by customer class (e.g., residential, commercial, industrial, interruptible, company

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have been abun-
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use, and unbilled gas). Frequently, the residential and commercial class forecasts are broken down to show space heating separately. Future residential requirements are sometimes disaggregated by single-family and multiple-dwelling structures.

RESIDENTIAL

Forecasts of residential loads are usually made on a use per customer basis, recognizing the effect of temperature (or weather conditions) on consumption. Generally, the *number* of new customers as a percentage of existing customers in a given year is relatively small. A small change in use per customer, however, can have a major effect on the total forecast load because use-per-customer is multiplied by a large number of customers.

The customer forecast can be made by a simple trend projection. This would suffice unless changes in the territory served or in the growth pattern is anticipated. For example, a reduction in new home building or a shift from construction of single-family homes to multiple-family dwellings or apartment houses (where several family groups could be counted as one customer) would significantly affect the growth in the number of customers. In addition, the prices of natural gas and other fuels as well as customer income will influence the growth in the number of customers and use per customer. Population studies, of course, are helpful in estimating customer growth. State, county, and local population forecasts and other demographic data may be useful if timely. Such studies are sometimes available for geographical areas that coincide reasonably closely to a company's service area. There is a high correlation between changes in population and changes in a utility's number of customers.

Temperature Adjustments

The use-per-customer element of the residential forecast is the critical one. It is difficult to estimate, however, because residential uses are greatly influenced by temperature. No one can forecast these independent variables with accuracy. Thus, forecasts of gas loads (except where space heating is inconsequential) are made on the assumption that "average" or "normal" temperature conditions will prevail.

In forecasting, past use-per-customer data must be adjusted to what they would have been had average temperature conditions been experienced. For this reason, companies maintain records of sales and temperatures, and determine the statistical relationship between

those two time series. This relationship is used to adjust (i.e., normalize) actual temperature-sensitive loads to what they would have been under average temperature conditions. Such normalization can reduce seasonal variations and billing problems.

If a utility's service area is extensive or includes areas with markedly different climatological zones, separate temperature adjustments may be necessary. Alternatively, a weighting scheme reflecting each climatological zone on a customer or load basis may be adequate to develop a composite adjustment.

In the gas industry, the term "degree day" is used to describe the temperature conditions that affect heating loads. The assumption is that above some temperature level, usually 65°F, there is no significant heating load. A *heating* degree day is the number of degrees Fahrenheit on any one day that the average temperature is less than that temperature. For example, if the average of the high and low temperatures over a twenty-four hour period is 40°F, that would be 25 "degree days." Adding up the degree days experienced in a year or in a winter season, measures the severity of the weather.

To reflect billing lag (generated when a customer uses gas over a 30-day period *not* coincident with the calendar month), "fiscal" degree days can be calculated. Here, a period other than a calendar month is selected to better fit the majority of the customers billed in a certain month.

A forecaster can make adjustments using temperature or degree days. Using temperature avoids adopting an arbitrary base (e.g., 65°F), which may improve a utility's forecasting accuracy. For making comparisons of heating requirements between gas companies in different geographical areas, the degree day is used. Some companies have lowered the degree day base from 65°F to say 60°F to reflect the lower thermostat settings in modern homes. These companies have found a better statistical correlation between sales and degree days calculated on the lower base. Some companies calculate degree days with a very low base for commercial customers (e.g., warehouses) to reflect actual operating conditions.

Gas use for heating purposes is affected by other weather conditions (e.g., wind velocity, cloud cover, and the cumulative effect of several successive days of abnormally cold weather). On an *annual* basis, these factors may be of minor importance. To forecast *peak* loads, however, historical data on the simultaneous occurrence (on a weekday) of minimum recorded temperatures and maximum wind velocities would be useful.

Some utilities separate space heating loads from total loads and forecast residential and commercial loads in two parts: a base load and

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a heating load. The base load is the average use per customer during the summer months (when there are few heating degree days). The heating load is the difference between the base load and the total winter load. Some companies refine this so-called Y-intercept technique by using linear regression analysis. Then the statistical correlation can be measured.

Other Factors

Forecasters of residential use per customer must consider other factors that influence gas use besides weather. For example, changes in the type of homes built will affect the number of customers and use per customer. Today's smaller, well-insulated homes require less gas than older homes. In any one year, such changes have a small effect but it is cumulative. The increase in apartment house building and the decline in single-family construction are more important factors. The former cuts into residential load while the latter boosts (commercial) multiple-family loads. Overall, there is a reduction in total gas loads. Information about new home construction is usually available and should be assessed by utility analysts. Often, the age of existing homes and the age of the customers affect the forecast.

A forecaster must also evaluate the effect of conservation on customer use—either price induced or that required by regulatory agencies (e.g., new home construction standards). Many companies have felt such an effect caused by higher gas prices and superior insulation in new homes. Moreover, many older homes have had extra insulation installed, further dampening residential sales.

COMMERCIAL

Compared to residential consumption, consumption per commercial customer varies greatly. A small shop may require gas for only a 30-gallon water heater, while a laundry may use gas for water heating, steam generation, and drying. The gas company records either business as one customer.

Some gas companies forecast their commercial loads by measuring the total number of customers on the system. This assumes that growth in commercial loads follows increases in population and, therefore, the increase in number of customers in the service area. Utilities can check the statistical validity of this proposition. Before using this approach, analysts usually segregate the large commercial