

March 1, 1983

NATURAL GAS DEREGULATION: GIVING THE CONSUMER A CHOICE

INTRODUCTION

This winter's unprecedented natural gas price rise--as much as 60 percent in some cases--demonstrates dramatically that the Natural Gas Policy Act (NGPA) fails to protect the consumer. Enacted in 1978, the NGPA was intended to restore some semblance of a free market in natural gas, while at the same time protecting the consumer from sudden, sharp price hikes. Yet, these very NGPA regulations, designed to shield the gas consumer from high prices, are responsible for the current increase. Worse still, should Congress to extend the rules beyond their 1985 expiration date, as nearly happened in last autumn's lame duck session, gas consumers could wind up paying as much as \$153.7 billion more for natural gas over the next six years than they would if controls were lifted. For the average homeowner, this would mean an additional \$887.80. And every consumer would see spurts in the price of a host of gas-dependent commodities, such as food and plastics.

Rather than eliminating market distortions, the NGPA has magnified them. It made natural gas regulations more complex instead of simplifying them, and it extended their scope far beyond previous regulation. It promoted investment in the highest cost sources of gas at the expense of low and moderately priced supplies. Most important, it reduced, rather than enhanced, the power of gas consumers to influence the operation of the gas market.

The Natural Gas Policy Act is fatally flawed. But the reasons for its failure go beyond the circumstances that surrounded its enactment. Just as the price hikes and market distortions of today are the natural consequence of the NGPA's regulations, the NGPA was an unfortunate reaction to a long series of events

that preceded its enactment. In a sense, the billions of dollars of added consumer costs, and the potential shortages that loom large on the natural gas horizon, are the culmination of policies initiated 45 years ago.

The current debate over natural gas regulation offers an opportunity to correct the mistakes of the past. All Congress need do is take a few steps to restore the consumer's power to influence the natural gas market. These include:

- * Declaration of a "renegotiation period" for all existing domestic natural gas contracts, during which "take or pay," "most favored nation," and "indefinite price escalator" clauses will be null and void.
- * Elimination of impediments to direct negotiations between producers and consumers by classifying natural gas pipelines as "limited common carriers."
- * Establishment of a date for re-evaluation of all natural gas import licenses. During the period leading up to the re-evaluation, foreign gas producers would be encouraged to renegotiate the prices in their gas contracts.
- * Elimination of all price controls on natural gas.

These steps again will make consumers sovereign in the natural gas market. Without these steps, consumers will suffer the shortages, higher prices and economic dislocations that are regulation's inevitable legacy.

THE EARLY HISTORY OF NATURAL GAS REGULATION

In its early days, the natural gas market was free of federal interference. In the 1920s, however, widespread pipeline mergers gave rise to fears that the gas industry was becoming too concentrated. Alarmed, the Senate charged the Federal Trade Commission (FTC) in 1929 with examining the status of the natural gas market. A 1935 FTC report concluded that the Senate's fears were justified and that excessive concentration was leading to cut-throat competition, which in turn threatened to squeeze out small gas producers.

The legislators responded with the Natural Gas Act of 1938. It extended the jurisdiction of the Federal Power Commission (FPC) to include some aspects of the natural gas market. The most important of the Commission's new powers was the regulation of the rates charged by interstate gas pipelines. In broadening the FPC's authority, however, the Act specifically excluded "the production or gathering of natural gas." It remained for the Supreme Court, in its 1954 landmark Phillips v. Wisconsin decision, to bring wellhead prices of interstate gas fully under FPC control.

Phillips effectively established a dual market for natural gas. The intrastate market, consisting of gas produced and sold within a single state, was kept free of federal interference. But the interstate market, covering gas that moves between states, was made subject to federal controls.

It was soon evident that the Court had given the Commission an unmanageable task. The FPC tried to regulate wellhead gas prices the same way it would regulate a pipeline or electric utility. But ratemaking of that kind proved ill-suited to the circumstances under which gas is bought and sold. Unlike pipelines or electric power plants, there is no uniformity or predictability in the costs incurred in drilling gas wells--even within the same geologic basin. Moreover, no allowance is made under conventional utility ratemaking procedures for the capital formation needed for exploration. Most important, there are many more firms involved in gas production than there are electric utilities or pipelines. As a result, the FPC attempt to treat wells on an individual basis generated an avalanche of paperwork. By 1960, a backlog of 3,278 cases had developed.

To simplify the process, the FPC adopted "area wide rates" for specific geographic regions. Within each region, all producers were subject to the same price ceilings, regardless of their individual costs. The trouble with the approach was that it became virtually impossible to raise prices for any producer, no matter how justified, because to raise them for one meant raising them for all. This was because in the event of a general price increase, producers with lower production costs might receive a windfall--something the Commissioners, who saw their job as keeping gas prices as low as possible, were loath to condone. The result was a de facto price freeze on interstate gas rates through most of the 1960s. The effect of the freeze was to discourage the development of new gas supplies and encourage excess gas consumption.

Over time, this led to a steep decline in gas reserves earmarked for the interstate market. The ratio of such reserves to production plummeted from 18.9 in 1964 to 8.5 in 1977. Proved reserves dedicated to the interstate market dropped from 189 Trillion Cubic Feet (Tcf) in 1967 to 92 Tcf in 1977.

In the intrastate market, however, reserve levels increased slightly from 92 TCF to 115 Tcf during the same period. This took place with prices only modestly higher than those prevailing on the interstate market. Increasingly, pipelines found it necessary to curtail service to industrial and commercial customers in order to meet residential demand. By 1970, these curtailments amounted to one billion cubic feet. A crisis was rapidly developing.

THE NATURAL GAS POLICY ACT OF 1978

The winter of 1976-1977 proved a turning point in the natural gas debate. Record low temperatures plagued large sections of the gas-consuming states in the northeast, causing demand for gas to skyrocket. Severe shortfalls of gas soon developed, leading to widespread factory closings and the imposition of a host of emergency conservation measures. To avert even more drastic economic disruptions, Congress passed the Emergency Energy Natural Gas Act. This suspended some price restrictions to permit the transfer of gas from intrastate supplies to interstate pipelines. Although the move solved the immediate problem, it skirted the basic issue: that the shortage had been caused by market distortions arising from federal price controls. Congress tried to address that in the Natural Gas Policy Act of 1978.

In spite of the harsh lessons of the winter of 1976-1977, Congress was still reluctant to face squarely the issue of gas price controls. Many Members feared that removal of the federal ceilings would lead to sharp gas price increases just as they were entering an election year. Others felt that gas supplies were nearing exhaustion, and that removing controls would somehow result in an unwarranted windfall to gas producers. Still others opposed decontrol out of a deep-seated hostility toward the oil and gas industry.

An Ad Hoc Committee on Energy was convened to resolve the matter. After nearly a year and a half of sometimes acrimonious debate, the Committee agreed on a proposal acceptable to Congress. In September 1978, the Natural Gas Policy Act was signed into law.

Although touted as a "decontrol" measure, the NGPA was nothing of the sort. As a trade-off for the eventual lifting of federal price ceilings on between 50 and 60 percent of natural gas supplies, the intrastate market, previously free of federal interference, was brought under the FPC's authority. Worse, it drastically increased the complexity of natural gas regulation by creating eight primary categories and thirty subcategories into which gas wells were classified.

It was the intent of the NGPA to allow prices for "new" natural gas to rise gradually to a level equal to the world price for an equivalent amount of crude oil. The phase-in of market prices was tied to an estimate of what the world price of oil would be in 1985--the year in which most NGPA controls expire. But the Act stipulated that gas from existing wells, called "old" gas, would continue to be subject to federal price ceilings. Also, certain types of gas wells, defined as "high-cost" gas in Section 107 of the Act, were decontrolled immediately. The NGPA thus set into place a series of market distortions that contained the seeds of the current price increases.

THE NGPA'S DEFICIENCIES

Like other congressional attempts at regulating natural gas prices, the NGPA suffers from inherent flaws.

Price Dislocation

Among the most serious flaws is the linkage of price increases permitted under the Act to a fixed "target" price for oil, based on a forecast of the market in 1985. This allowed no flexibility for orderly responses to shifting circumstances in the world market. In the year following enactment of the NGPA, for example, the world price of gas rose 48 percent, while U.S. domestic prices increased only 11.6 percent. As a result, the gap between the U.S. and the market price grew, increasing the possibility of a sharp price rise when controls finally expire--exactly the situation the Act was supposed to avoid.

Perverse Incentives

Another problem arose from the system of categories devised under NGPA. Under the Act, "old" gas (from wells drilled before April 1977) is to remain under federal control after 1985 and prices can only be increased at the pace of inflation. At the same time, producers of "high-cost" gas, under Section 107, can charge whatever the market will bear. Pipeline companies with large amounts of "old" gas under contract can use its low prices as a "cushion" against the higher prices they pay for Section 107 gas, by averaging the prices. Moreover, federal regulations that allow pipelines to pass the full cost of gas purchases on to their customers, and require that they maintain certain reserve levels, have led them to be far more concerned with continuity of supply than with price. Therefore, there has been little incentive for a pipeline to obtain gas supplies at the lowest possible price.

For gas producers, the NGPA categories created a tremendous incentive to search for gas in the highest cost categories. The prices allowed for other types of gas wells, meanwhile, often were insufficient to justify the investment drilling an exploratory well entailed. As a result, there was a severe misallocation of resources.

More and more, pipelines began contracting for high-cost gas to replace dwindling "old" gas reserves. Also, the low federal price ceilings imposed on "old" gas, and gas from existing reservoirs, made it less and less economic to develop and market these supplies. At the same time, the prices for equipment and materials for oil and gas drilling were dramatically increasing--as high as 400 percent for some items. In many cases, gas simply could not be sold profitably at the "old" gas price. By 1981, according to the Energy Information Agency, 70 percent of new gas purchases by pipelines were accounted for by high-cost gas, even though there was a surplus of available lower cost gas equal to between 15 and 20 percent of the total gas demand.

Gas imports were ignored under NGPA. Yet imported gas from Mexico and Canada and liquified natural gas (LNG) from Algeria play an increasingly important role in the U.S. picture. In 1981, consumers paid an extra \$4.2 billion for imported gas; in 1982 the cost may be even greater.

Contracting Practices

With increasing frequency, pipeline companies are entering into "take or pay" contracts for extremely expensive sources of gas. Under these contracts, the pipeline agrees to pay a producer for a specified amount of gas whether or not it accepts delivery. The practice of entering into such contracts arose out of necessity. Exploration and development of natural gas is capital intensive and highly risky. To justify their investment, producers sought to ensure at least a minimum return. As such they required pipelines to agree to a "take or pay" clause, to protect themselves from a sudden loss of their market. In most cases, the pipelines also insisted on what is called a "market out" clause, which permitted them to withdraw from the agreement if prices were too high.

After enactment of the NGPA, though, a new type of "take or pay" contract came onto the scene. Pipelines with large "cushions" of old gas began entering into highly restrictive "take or pay" contracts for gas produced under Section 107 (i.e. high-cost gas) of the NGPA, and for gas from foreign suppliers. Often, these contracts imposed "minimum take" requirements (the amount that must be either accepted or paid for) which were far higher than the customary level in years past. More important, many of these contracts had no "market out" provision. As a result, the pipelines were locked into using the gas contracted for regardless of the price. In many cases, this meant that the pipeline was accepting higher cost gas at the expense of lower cost supplies that were available. For example, Columbia Pipeline, which serves areas of the northeast, including Baltimore and the Washington, D.C. metropolitan area, filed a request for rate increases totalling nearly \$1.5 billion to pay for such gas purchases, even though other suppliers were willing to sell the company gas at a fraction of what they were paying for the high-cost gas. Unable to convince Columbia to do business, the producers ended up shutting in, and in some instances even flaring (burning off into the atmosphere), their gas instead.

THE CONSUMER IMPACT OF CONTINUING CONTROLS

It is now clear that the price controls established under the Natural Gas Policy Act have failed to keep gas prices down. In Virginia and West Virginia, they have risen 25 percent in the last year alone. In Pennsylvania, increases ranged from 21 to 28 percent. In Dallas, and some parts of Missouri, a staggering 60 percent price hike occurred, and in Southern California gas prices jumped 35 percent over the last twelve months.

Paradoxically, the failure of NGPA controls has led some Members of Congress to call for their extension. Mistakenly believing that the nature of the price ceilings, rather than the fact that price ceilings were imposed is to blame for the increases, they are pressuring the Administration to exercise its authority under Section 122 of the NGPA, and extend the phase-out of controls through 1988. Taking this course of action would be a drastic mistake. Not only would extending controls fail to keep gas prices down, it would actually result in far higher prices than if the market were allowed to operate. Just how much higher prices would go under controls can be demonstrated using a model of the oil and gas market developed by Dr. Helmut A. Merklein of Texas A&M University.

Applying the Merklein Model

In his model of the natural gas market, Dr. Merklein devised eight scenarios which predicted the supply and demand responses of natural gas to a variety of decontrol schemes. These ranged from an extension of NGPA controls, as desired by some Members of Congress, to one in which all controls are immediately lifted.

Assuming that controls were to be phased out gradually over a six-year period including the years 1983 to 1988, with full decontrol following in 1989, the model predicts varying shortages of conventional gas. This shortfall would have to be made up from other, unconventional sources, such as Section 107 gas, imported, or liquefied natural gas. Some might also be made up by switching to an oil product such as residual fuel oil, or #2 fuel oil. In virtually every case, however, the alternative would be more expensive than conventional natural gas. The shortfall, it should be emphasized, would not be the result of a lack of supply, but rather the lack of incentives fostered by NGPA price ceilings. Over the period between 1983 and 1988, the cumulative shortfall projected by the Merklein model comes to 206 Tcf. This is the amount of gas that would have come from high-cost sources. The question is, at what price?

Should current contract trends continue, it may be assumed that most of the shortfall will be covered by purchases of Section 107 gas, mostly from deep wells. Although there has been a decline in Section 107 prices recently, due to the fall in gas demand accompanying the general economic slowdown, a resurgence of economic activity can be expected to witness a corresponding strengthening of deep gas prices. Under these circumstances (even assuming that all other costs remain constant), the cumulative cost to the consumer would be \$153.7 billion more over the six years than if all controls were immediately removed. This would mean a \$32.8 billion, or 24 percent, rise in the nation's natural gas bill in the first year alone. For the average homeowner, the extra cost over the full six years would be \$877.80. If the effect of higher gas prices on commodities such as fertilizer, plastics, and other petrochemicals is taken into account, the full cost of higher gas prices for a family of four would equal

nearly \$4,160 for the six years, and nearly \$900 in the first year. These figures, of course, assume that price controls are gradually phased out. Should they be extended, the results could be even worse.

RESTORING CONSUMER SOVEREIGNTY

It is evident that controls not only are not working, but are contributing to natural gas price rises. The question then becomes: what should be done? The answer: restore consumer sovereignty to the natural gas market.

The notion of consumer sovereignty holds that consumers should have the widest possible latitude in making economic choices. If this is not the case, then willing sellers and willing buyers cannot transact freely, a free market cannot exist, and there will be costly misallocations.

In the natural gas market, government at the state and local level has imposed a third party--the pipelines--between gas producers and gas consumers. Although the stated function of the pipeline is to transport natural gas from its point of production to the point of local distribution, pipelines effectively have become the wholesalers of natural gas in the years following enactment of the Natural Gas Act. As regulated monopolies with exclusive service areas, their revenues are at best only indirectly linked to the cost of the natural gas they contract for. In most cases, moreover, they are able to pass through the full cost of gas purchases to the consumer. As a result, and unlike the ultimate user of the gas, they have little incentive to keep those costs down. So the consumer's normal inclination to bargain for the lowest price is frustrated by the imposition of a middleman between him and the producer.

For gas producers, the situation is no better. Because they contract with pipelines which are regulated monopolies, rather than the ultimate consumer, their market alternatives are also limited. The pipeline not only determines the price a producer receives, but how much he can sell as well. The result of these circumstances has been to create a range of natural gas prices running from as low as 25 cents per thousand cubic feet (mcf) to as high as \$11 per mcf--all for the identical commodity. In a free market, this situation would not exist.

In a free market the price of natural gas would be determined by the value consumers placed on it. Some feeling for how the market might operate can be gained from the recent experience of eliminating federal price ceilings on crude oil and refined products. Rather than leading to a rapid and sharp rise in oil prices, quite the opposite occurred. In fact, the U.S. composite price for crude oil (the average of what refiners pay for imports and domestic supplies) is now 14.3 percent lower than it was at its peak in March of 1981, a month after controls were lifted.

With the elimination of federal controls on oil, consumers could express their market preference and force the price down. Under the current structure of the natural gas market this cannot occur, or at least cannot occur as easily, because the consumer's sovereignty is severely limited by NGPA regulations. To remedy this situation, and restore consumer sovereignty, a number of steps must be taken.

HOW TO RESTORE CONSUMER SOVEREIGNTY

The first step in restoring consumer sovereignty is to eliminate the gas pipeline as a middleman to the extent possible. In some cases, gas users may prefer pipelines to act as a broker. In most cases, however, local distributors will want to enter into their own agreements with producers.

To accomplish this, however, certain aspects of existing gas contracts must be revised, particularly those which would be triggered automatically and lead to higher prices if controls were lifted. Gas experts refer to this phenomenon as "the contract problem."

This problem can be resolved by establishing a period during which the questionable clauses would be renegotiated. A period of adjustment also is needed if the transition to a free market is to take place.

During the "renegotiation period," both producers and pipelines would have the opportunity to "market out"--to abrogate their existing agreement. This would free pipelines from the "take or pay" requirements, and would allow producers to find other customers. During this period gas distributors, together with large industrial customers, would be allowed to contract directly with producers.

To the extent that direct contracts take place, the pipelines would, become a sort of limited common carrier, in the same way oil pipelines are. Their obligation would only be to transport, not supply gas.

The question of foreign supplies could also be dealt with during this period. As suggested by Representative Tom Corcoran (R-Ill.), Congress could require that by a specified date, say six months after enactment of the legislation, the Secretary of Energy must review all import licenses for natural gas and determine whether to allow them to continue. The basis of his decision would be the price and would force renegotiation of prices above market levels. Some governments, especially Canada's, currently refuse to allow their gas producers to lower prices they charge customers in the United States. The renegotiation period would permit a change in such pricing policies. If the foreign governments continued to insist that their producers charge above-market prices, then their export licenses would be invalidated, and U.S. domestic producers could make up the supply deficit.

When the contract renegotiation period ended, the structure of the natural gas market would have been altered fundamentally. Buyers would be able to contract directly with sellers, and at a price mutually agreed to. For the first time in four decades, the consumer would again be able to exercise his will. The net result of these actions would be lower prices for the end user, and greater incentives for the vast majority of producers.

CONCLUSION

When the Senate first moved to regulate the natural gas market forty-five years ago, it believed it was correcting a market imperfection, and ensuring competition. Were the Solons present in the chamber when the Natural Gas Act was passed able to look into the future and see the actual effect the law would have, they would have been shocked and dismayed. Similarly, the Natural Gas Policy Act has failed to achieve its intended goal. Rather than protecting consumers against high prices, it has fostered them. Rather than simplifying regulations, it has made them more complex. Rather than encouraging a free market in natural gas, it has given rise to even greater market distortions. While these facts may surprise many who labored long, and with good intentions, for passage of the NGPA, they were inevitable. No regulatory regimen can ever duplicate the efficiency of the marketplace.

There is no economic justification for artificially imposed price ceilings. If a commodity is in short supply, controls cause it to be underpriced and overconsumed, leading to its premature exhaustion and discouraging use of substitutes. Shortages, which then create pressure for price increases, must inevitably follow. This is why restoring a free market, and consumer sovereignty to the natural gas market is the only action clearly in the consumer interest.

If the Natural Gas Policy Act is not reformed--or worse, if its provisions are extended--it will be the gas consumer--especially the residential gas consumer--who will suffer. Large gas users often can switch to alternatives. But for homeowners, changing fuels is at best expensive, at worst impossible. Yet, if controls are extended through 1988, the average homeowner will suffer nearly \$900 in increased direct costs, and, for a family of four, nearly \$3,300 in indirect costs. This is a high and unnecessary price to pay for Congress's unwillingness to confront the natural gas issue. It is a cost that consumers should not have to bear.

Milton R. Copulos
Policy Analyst