

**NATURAL GAS PRICE DECONTROL:
A COMPARISON OF TWO BILLS**

The Congress of the United States
Congressional Budget Office

NOTES

All constant dollar numbers in this report are 1982 dollars, using the Gross Domestic Product deflator projected in the simulation.

All gas prices are expressed in thousands of cubic feet.

ERRATA SHEET

CONGRESSIONAL BUDGET OFFICE

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Page xix: The seventh sentence in the second full paragraph should read: "Gas imports would decline by 0.6 trillion cubic feet in 1990 in response to higher domestic gas supplies." No exportable surplus would occur.

Page xx: In the last sentence of the last paragraph, cumulative reserve additions under the Gephardt bill would be 10.4 trillion cubic feet lower than under the NGPA.

PREFACE

The Congress is once again considering natural gas wellhead pricing policy. In previous considerations of this issue, the debate has centered on the issue of redistributing income from consumers to gas producers through decontrol. But since the passage of the Natural Gas Policy Act of 1978, the average price of gas appears to have risen to levels that it would reach in a competitive market. Thus, the issue inherent in the gas decontrol debate may now be how to restore competition to the gas market. At the request of the Fossil Fuels Subcommittee of the House Energy and Commerce Committee, this report examines the effects of two approaches to natural gas pricing policy on the natural gas market and the economy. In keeping with CBO's mandate to provide objective analysis, the report makes no recommendations.

This report was prepared within CBO's Natural Resources and Commerce Division, under the direction of David L. Bodde and Everett M. Ehrlich, the report's author. The estimates found in this report are based on an econometric model of the gas market and the economy developed by Timothy J. Considine, who, together with Mollie V. Quasebarth, prepared the computer simulations. Mark Prell developed the submodel estimating gas exploration and production, and Paul McCarthy provided research assistance. The author wishes to thank several reviewers for valuable comments, including Dr. Harry G. Broadman of Resources for the Future, various members of the Department of Energy's Office of Economic Analysis, Dr. Raymond Scheppach of the National Governors Association, Peter M. Taylor of CBO's Fiscal Analysis Division, and Kathleen Gramp of CBO's Budget Analysis Division. Responsibility for errors, however, remains with the author. Patricia H. Johnston edited the manuscript, which was typed and prepared for publication by Philip F. Willis.

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November 1983

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SUMMARY

As the Natural Gas Policy Act of 1978 approaches its 1985 partial deregulation date, the Congress is once again considering natural gas pricing policy. In the past, the debate over gas pricing has focused on the question of whether consumers should bear the burden associated with a rise in gas prices to the "free-market" level. But today, substantial evidence exists that the average price of gas has already risen to the level it would reach if gas competed freely with oil. Thus, the major issue in gas pricing policy today may be how to improve the efficiency and competitiveness of the gas market, rather than the redistribution of income from consumers to gas producers.

This report examines two approaches to gas pricing policy, the decontrol provisions found in S. 1715, as reported by the Senate Energy and Natural Resources Committee, and the extended controls found in legislation proposed by Congressman Gephardt (H.R. 2154). These bills are compared to the existing provisions of the Natural Gas Policy Act of 1978 (NGPA), which serves as the base case. The NGPA allows much of the nation's gas to reach a competitive price in 1985, but preserves controls on some gas, notably low-cost gas from older fields sold in interstate markets.

The results of this analysis indicate that, by 1990, the gas price differences resulting from these three measures are slight, and that the effects of the two new proposals on the natural gas market and on the economy, are often negligible when compared to the NGPA. Using the base oil assumptions found in this report, the average current dollar price of gas delivered to local distribution companies (the "city-gate" price) in 1990 would rise to \$6.00 per thousand cubic feet under the NGPA, \$6.01 under the Senate bill, and \$5.98 under the Gephardt proposal. Both the Senate and Gephardt proposals would result in slightly higher economic output (as measured by the Gross Domestic Product) in the mid-1980s when compared to the NGPA, but by 1990, these differences would be negligible. 1/

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1. Gross Domestic Product (GDP) is a national income concept based on production within the geographic borders of a country. Gross National Product (GNP) covers production by and incomes to citizens of a country no matter where they live. GDP is used in this report because changes in gas prices would not appreciably affect income earned from foreign sources.

The differences between the two proposals are somewhat more pronounced with regard to gas markets. By encouraging domestic production--and particularly by promoting the extended development of older, larger gas fields--the Senate bill would result in higher levels of domestic gas reserves and lower gas imports. The effects of the Gephardt proposal would be the reverse--production and reserves would drop while imports would rise. Since gas imports are assumed to remain more expensive than domestic supplies in this analysis, the rise in imports under price controls and their fall under decontrol contribute to the converging trend in average prices under these two approaches. An overview of the results of this paper is present in Summary Table 1.

CURRENT STATE OF THE GAS MARKET

The differences between the effects of the Senate and Gephardt bills would be small because gas prices, despite current regulation, have already risen to levels equal to those that would arise if gas and oil competed freely. Understanding how this occurred necessitates understanding recent developments in the gas market.

In 1978, the Congress passed the Natural Gas Policy Act (NGPA). The NGPA created price ceilings for older, cheaper gas while permitting the eventual deregulation of various categories of newer and higher-cost gas. One of these (Section 107, or "high-cost" gas) was deregulated immediately. The legislation sought to bring the average price of gas to the equivalent of the price of oil (then projected to be about \$15 per barrel in 1977 dollars) by 1985. Unfortunately, the framers of the act did not envision that oil prices would rise substantially in the interim. With this oil price increase, the NGPA became a new system of controls that held gas prices below their oil equivalent level, rather than gradually phasing up gas prices to a decontrolled level. 2/

In this environment, gas pipelines were eager to secure new supplies to meet growing demand for the cheaper gas. Since they enjoyed an endowment of old gas under controlled prices, pipelines could afford to pay premi-

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2. The "oil-equivalent" price of gas is the price that gas would achieve if it were to compete freely with oil. It is assumed to be the price of oil used by manufacturers, calculated on a Btu basis, minus the average costs of transporting gas from the gas field to its point of use. If all gas were priced at the oil-equivalent level at the wellhead, therefore, gas and oil would cost the same amount per Btu when burned in the manufacturing sector.

SUMMARY TABLE 1. GAS PRICES, GAS MARKET EFFECTS, AND ECONOMIC EFFECTS UNDER THE NGPA, THE SENATE BILL, AND THE GEPHARDT BILL, CALENDAR YEARS 1984-1990.

	1984	1985	1986	1987	1988	1989	1990
NGPA Base Case							
Average city-gate price (in current dollars per thousand cubic feet)	4.17	4.49	4.75	5.08	5.38	5.69	6.00
Domestic reserve additions (in trillions of cubic feet)	14.2	15.3	14.9	14.1	13.4	12.9	12.4
Gas consumption (in trillions of cubic feet)	17.3	17.1	17.1	17.1	17.3	17.3	17.2
Gas imports (in trillions of cubic feet)	0.9	1.6	1.7	1.9	1.9	1.9	2.0

Changes from NGPA Base Case							
Senate Bill							
Average city-gate price (in current dollars per thousand cubic feet)	-0.24	-0.20	-0.05	0.08	0.06	0.03	0.01
Domestic reserve additions (in trillions of cubic feet)	0.5	0.4	0.8	1.7	1.9	1.8	1.7
Gas consumption (in trillions of cubic feet)	0.2	0.2	0.1	0.0	0.0	0.0	0.0
Gas imports (in trillions of cubic feet)	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6
Real gross domestic product (GDP, percent change in level)	0.16	0.11	0.02	-0.06	-0.02	0.01	0.03
Price level (GDP deflator, percent change)	-0.31	-0.26	-0.09	0.08	0.08	0.06	0.04
Gephardt Bill							
Average city-gate price (in current dollars per thousand cubic feet)	-0.38	-0.38	-0.33	-0.02	-0.04	-0.04	-0.02
Domestic reserve additions (in trillions of cubic feet)	-0.7	-1.7	-2.2	-0.9	-0.6	-0.5	-0.5
Gas consumption (in trillions of cubic feet)	0.3	0.4	0.4	0.2	0.2	0.2	0.1
Gas imports (in trillions of cubic feet)	0.6	0.2	0.7	0.6	0.5	0.6	0.7
Real gross domestic product (GDP, percent change in level)	0.24	0.20	0.15	-0.06	-0.03	-0.01	-0.01
Price level (GDP deflator, percent change)	-0.51	-0.49	-0.46	-0.08	-0.07	-0.05	-0.02

um prices for new higher-priced gas, which could be averaged with the cheaper gas supplies. Moreover, pipelines had lost many of their customers when they were unable to deliver gas during the gas shortage in the winter of 1976-77 and wanted to secure new reserves to avoid a repetition. Thus, pipelines signed contracts with a variety of provisions that forced them to assume a high level of risk. Most notable are take-or-pay provisions, which obligate pipelines to pay for higher-priced gas even if they cannot use it and cheaper gas supplies are available. Other contracts include clauses that tie the price of gas upon deregulation to prices well above the oil-equivalent price, such as 110 percent of the price of distillate (home heating) oil, or the average of the highest three prices found in the region.

The recession of 1981-82 and the resulting decline in oil prices changed gas market conditions. As pipelines were forced to buy more and more high-cost gas and as the price of oil fell, average gas prices reached the level at which gas was as expensive to burn as oil. This can be seen by the fact that the average price of high-cost gas contracts is falling, that many such contracts are being renegotiated, and that gas is losing customers to oil, particularly industrial users. But while pipelines were unable to sell all of their gas, their take-or-pay provisions went into effect. Obligated to buy newer, more expensive supplies, pipelines often had to cut back on cheaper sources. Last winter, gas costs rose rapidly, in part because of these take-or-pay obligations. Moreover, because of contract rigidities, there is a surplus of lower-priced gas in the market. Gas decontrol, therefore, could potentially lower gas prices if it allowed pipelines to resequence their purchases of gas supplies from higher- to lower-priced gas or to renegotiate their contracts.

Policy Options

Two alternative legislative approaches to gas pricing policy are now before Congress. H.R. 2154, submitted by Congressman Gephardt (with a comparable but not identical proposal submitted by Senator Kassebaum) seeks to roll back gas prices and delay the partial deregulation found in the NGPA by two years (assuming immediate enactment, this would move the NGPA's deregulation date to January 1, 1987). S. 1715, reported by the Senate Energy and Natural Resources Committee, would decontrol all gas by 1987 and would encourage the renegotiation of gas contracts, allowing the gas market to be reordered. In this report, the effects of these two proposals are compared to the anticipated effects of the NGPA.

METHODOLOGY AND ASSUMPTIONS

This analysis involves two interrelated steps: estimating the price of gas under the NGPA, the Senate bill, and the Gephardt bill, and then estimating the effects of these prices, combined with other provisions found in the bills, on the economy and on the gas market.

The NGPA and the Gephardt bill, which essentially delays the provisions of the NGPA by two years, divide the nation's gas supply into nine major categories, or "sections." Some of these are to be deregulated (in 1985 under the NGPA, in 1987 under the Gephardt bill), while others are to be regulated in perpetuity. Regulated gas would follow a series of price paths tied to the rate of inflation by the law. This analysis uses those prices to establish the NGPA base case. The price of deregulated gas was determined by assuming that gas, once delivered to local distribution companies (at what is called the "city-gate" price), was equal in price per Btu to oil purchased in the manufacturing sector--the so-called "oil-equivalent" level. Once regulated and deregulated gas prices were estimated, the relative shares of each under the NGPA and Gephardt bills were calculated based on similar projections made by the Energy Information Agency. 3/

Prices under the NGPA and Gephardt bills also reflect assumptions regarding contract provisions. Contracts now in place have a variety of provisions that could lead gas prices to untenable levels upon deregulation. Many of these contracts were written in the 1970's, when pipelines feared running short of gas supplies. These provisions sometimes call for gas to be priced at 110 percent of the value of distillate oil, or equal to the three highest prices found in the region. If these provisions were to be honored universally, many pipelines would be in great financial jeopardy. Thus, it was assumed that these contracts were renegotiated to allow prices to rise to the oil-equivalent level upon decontrol. The exception to this rule is the price of Section 107 high-cost gas, which is already priced above the oil-equivalent price; it was assumed to fall to \$4.50 per thousand cubic feet in 1985 under the NGPA (it remains regulated under the Gephardt bill). The price of imported gas was assumed to remain at its present level in constant dollars. While there are strong pressures for renegotiation of foreign gas contracts, no assumption could be made regarding the outcome of these international negotiations.

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3. Department of Energy, Energy Information Administration, The Current State of the Natural Gas Market, DOE/EIA 0313 (December 1981).

Prices under the Senate bill reflect that measure's provisions. The bill would deregulate some gas immediately, and phase most of the rest towards a free-market "indicator" price by 1987. The indicator price is equal to the average price of gas sold under contracts written in the previous six months. This analysis assumes this price to be the oil-equivalent price of gas. All expensive gas would be phased down to that level in one year, and all cheap gas up to that level in three. The Senate bill would also allow pipelines and producers to reach new agreements in a competitive context. Thus, once again, it was assumed that contracts would be renegotiated to permit gas prices to reach the oil-equivalent level as the Senate bill phased out price controls.

A final important assumption is that local gas distribution companies, under the direction of state regulatory commissions, do not assign residential users a disproportionate part of any price increase associated with changes in pricing policy. Since residential users are often willing to pay higher gas prices than industry users (because home heating oil costs more than industrial fuel), some state regulators might consider charging them a higher price in order to keep local business costs low. This analysis assumes that the distribution of costs between these two groups is consistent with past patterns.

The second step of the analysis involves estimating the economic and gas market effects of these proposals, using an econometric model. The model estimates the demand for inputs--such as capital, labor, energy, and materials--in each sector of the economy. When energy prices change, the model reallocates consumer expenditures among sectors, and then changes each sector's demand for inputs. This allows the model to calculate the economy's demand for capital and labor, which allows it to estimate national income and unemployment and total energy demand. Once energy demand is estimated, the model breaks it down into demands for specific fuels, such as natural gas.

The model also estimates gas supplies by estimating the rate at which gas reserves (both new reserves and extensions of old ones) are sought and discovered. These reserves are then depleted to form supplies. When domestic gas supply and demand change, the model changes gas imports to accommodate them. But since gas imports are more expensive than domestic gas, the model recalculates average gas prices and restarts the process until it reaches a solution.

One final caveat is in order. In theory, macroeconomic modeling resembles a science, but in practice it is more of an art and is, therefore, less precise. Results obtained from different models will differ as do the models themselves. Many of the results presented in this analysis depend critically

on important parameters, such as the responsiveness of gas supply and demand to changes in price, and on critical assumptions. Consequently, the estimates presented in this analysis should not be construed as unerring and definitive statements of the effects they represent. They do, however, strongly indicate the magnitude and direction of those effects.

RESULTS

Summary Table 1 presents the effects of the Senate and Gephardt bills compared to the NGPA. Under the NGPA, average current dollar city-gate prices are projected to rise by 51 percent (or by 10 percent in constant dollars) from 1983 to 1990. While natural gas consumption is projected to remain constant, domestic reserve additions would fall. Gas supplies consequently fall, resulting in higher gas imports.

The Senate bill would result in immediate price relief when compared to the NGPA, since it would allow for extensive renegotiation of gas contracts and, therefore, permit excess gas supplies to put downward pressure on prices. By 1987, however, prices under the Senate bill would catch up to NPGA levels, and by 1990 they would be roughly equal. By allowing the resequencing of gas supplies and by equalizing the long-term average price received by all gas producers, the Senate bill would expand both reserve additions and supplies. Under the Senate bill, cumulative reserve additions for 1984-1990 would be 8.8 trillion cubic feet higher than under the NGPA, roughly equal to one-half year's consumption. The actual supply response under the Senate bill may be smaller than these estimates, however, since the NGPA gives the Federal Energy Regulatory Commission the authority to offer higher "incentive prices" to gas in price-controlled categories. Potential new supplies generated in response to these incentive prices, however, were not incorporated in this report's simulations of the NGPA. Gas imports would decline by 0.6 billion cubic feet in 1990 in response to higher domestic gas supplies, producing an exportable surplus. The Senate bill would also lead to modest improvements in real economic activity and small reductions in price levels in 1990, when compared to the NGPA base case. These macroeconomic effects, however, are generally very small.

The Gephardt bill, in contrast, would sacrifice some reserves and supplies in exchange for a small but further decline in the price of gas in the mid-1980s. Gas prices would be lower between 1984 and 1986 under the Gephardt bill than under the NGPA or the Senate bill. But by 1990, city-gate gas prices would converge under all three cases. Lower wellhead prices under the Gephardt bill, however, would discourage reserve additions by a cumulative 7.1 trillion cubic feet over the 1984-1990 period. Thus, 1990 gas

imports would rise to 2.7 trillion cubic feet (16 percent of domestic consumption) under the Gephardt bill.

The Gephardt bill would result in a small increment in real Gross Domestic Product (GDP) and smaller increases in the price level between 1984 and 1986 when compared to the NGPA. But all the differences among these bills are eliminated by 1990, the end of the analysis period. Under the Gephardt bill, old gas would eventually be depleted and replaced by new, higher-priced gas, increasing average wellhead prices. Growing gas imports would also increase the average prices paid by consumers. Under the Senate bill, higher domestic supplies would reverse this import effect, and could increase the likelihood of successful renegotiation of foreign gas contract prices, although this effect was not assumed for this analysis.

Effects of Higher and Lower Oil Prices

Because oil prices are central in determining gas prices, this analysis examined the sensitivity of its results to changes in oil prices. The base oil price assumption sets oil prices at a level of \$27.59 per barrel (in constant dollars) from 1984 to 1990. Under an assumed low oil price path, oil prices fall to \$21.22 per barrel (in constant dollars) by 1986, and remain at that level through 1990. A high oil price path assumes that oil prices rise to \$32.31 per barrel (in constant dollars) in 1986 and remain at that level to 1990.

While higher and lower oil prices change the NGPA base case dramatically, they do not appear to expand the differences between the NGPA, on the one hand, and the Senate and Gephardt bills, on the other. In fact, these differences essentially would disappear by 1990. Under low oil prices, current gas prices are unambiguously above oil prices. The differences between the Senate, Gephardt, and NGPA measures are strictly related to how quickly they fall. Under high oil prices, the Senate bill would yield higher gas prices than the Gephardt bill throughout most of the 1980s. But the supply response to higher gas prices under the Senate bill is great enough to more than eliminate more costly gas imports. These added supplies would glut the domestic market and push prices downward in constant dollars by 1989, and in current dollars by 1990. Thus, under high oil prices, the major difference between the Senate and Gephardt bills would appear in reserve additions--cumulative reserve additions from 1984-1990 would be 18.4 trillion cubic feet higher under the Senate bill, and 10.4 billion cubic feet lower under the Gephardt bill, when compared to the NGPA.

CHAPTER I. INTRODUCTION AND BACKGROUND

The Congress is once again considering natural gas pricing policy. The Senate Energy and Natural Resources Committee has reported a bill (S. 1715) that would lead to complete decontrol of natural gas prices at the wellhead in 1987. The House Energy and Commerce Committee is in the process of marking up comparable legislation. At the same time, a major legislative proposal by Congressman Gephardt (H.R. 2154) would reestablish controls on wellhead gas prices by, in effect, postponing for two years the provisions found in current law. (A similar but not identical proposal has been submitted by Senator Kassebaum). This analysis compares these two major legislative approaches--the Senate Committee and Gephardt bills--and their effects on the natural gas markets and the economy.

Historically, the issue in natural gas pricing policy has been whether consumers should have to bear the burden of allowing gas prices to rise to "free-market" levels. But this concern may no longer be valid; rather the problem now may concern how to create competitive conditions in the natural gas market.

Much evidence exists that the average price of natural gas has already risen to levels at or near the price it would reach if gas competed freely with oil and other fuels (called the "oil-equivalent" price). But while the average price of gas probably has risen to this level, the prices received by individual gas producers (and, to a lesser extent, paid by individual gas consumers) vary widely because of the variety of gas price ceilings found in current law. Moreover, because of the rigidities in current contracts, many pipeline companies now have to buy gas from expensive sources when lower-cost alternatives exist. Thus, the issue currently underlying the gas decontrol debate is less whether income will be redistributed from gas consumers to gas producers (although gas decontrol will change the gas prices consumers pay, depending on the particular transmission pipeline that serves them) than it is the redistribution of existing gas revenues among gas producers and pipelines. Understanding this evolution requires understanding current gas pricing policy and special gas contract provisions and how these factors have interacted with rapidly changing conditions in gas markets.

RECENT DEVELOPMENTS IN THE NATURAL GAS MARKET

For almost 50 years, the natural gas market has been subject to controls. These have led to changed behavior by gas producers, pipeline companies, and consumers; unintended economic effects; and unanticipated administrative burdens and judicial interpretations. All of these side effects, in turn, have led to new or different controls. As a result, the gas market now reflects political and regulatory decisions as much or more than it does economic signals regarding supply, demand, and prices.

The Congress first introduced controls into the gas market in the Natural Gas Act of 1938 (NGA). The NGA sought to restrain the monopolies enjoyed by the gas pipelines that delivered natural gas from the wellhead to local distribution companies and end users. It did so by regulating the rate of return these pipelines could earn and established the Federal Power Commission (FPC—now the Federal Energy Regulatory Commission) to administer the NGA. The scope of the NGA was expanded in 1954 by a Supreme Court decision that required the FPC to regulate prices charged by natural gas producers as well as pipelines in the sale of interstate gas. The FPC initially sought to do so on a case-by-case basis, but the resulting administrative burden was overwhelming. It therefore established regional wellhead price ceilings for gas, based on average production costs in each region, a concept upheld by the Supreme Court in 1968.

But the regulation of interstate gas prices led to different prices for interstate and intrastate gas. Since interstate gas was subject to price controls, and therefore cheaper, the demand for it began to exceed its supply. At the same time, since intrastate gas was allowed a higher, free-market price, consumers in gas-producing states were able to bid supplies away from their out-of-state counterparts. The discrepancy between interstate and intrastate prices was exacerbated by the OPEC oil price increase of 1973-1974. By the winter of 1976-1977, interstate gas shortages became prevalent, and the Congress began to reexamine gas pricing policy.

The result of this reexamination was the Natural Gas Policy Act of 1978 (NGPA). The NGPA brought interstate and intrastate gas under a common set of regulations. It maintained price ceilings for older, cheaper gas, while either deregulating immediately or establishing paths to the eventual deregulation of various categories of newer and higher-cost gas in order to provide incentives for new gas production. Moreover, the legislation sought to raise gradually the price of most gas to the equivalent of the act's projected price of oil by 1985--about \$15 per barrel in 1977 dollars. With the eventual depletion of older gas fields, and the ensuing shift to deregulated newer gas, many proponents of the act saw it as a program of "phased decontrol."

What the framers of the act did not envision was that the price of oil on which the act was predicated would rise substantially in the interim. By 1980, oil prices reached \$30 per barrel and more, and the NGPA became, in effect, more like a new system of price controls than a phased decontrol program. But the controls the NGPA inadvertently placed on rising gas prices were undermined by the fact that some gas--termed "high-cost" gas under section 107 of the NGPA--was already decontrolled. Gas pipeline companies could contract to buy this category of more readily available gas at prices far in excess of market prices and average in its cost with the cost of cheaper, regulated gas. Thus, while the NGPA did not allow for the deregulation of all gas, it did permit circumstances in which the average price of gas could rise as if all gas had been decontrolled. A numerical example illustrates this process. Suppose a pipeline can sell 400 billion cubic feet of gas at a price of \$4 per thousand cubic feet. If its existing contracts provide it with 300 billion cubic feet of regulated gas at a cost of \$1 per thousand cubic feet, the pipeline can afford to pay as much as \$13 per thousand cubic feet for the remaining 100 billion cubic feet and still charge its consumers an average price of \$4.

In fact, pipelines did exactly that--by June 1982, the price of decontrolled gas from deep reservoirs (so-called high-cost gas) rose to \$7.41 per thousand cubic feet, substantially above the market-clearing price--that is, the price at which supply and demand would balance in an unimpeded market. Moreover, in their attempts to secure these high-cost supplies for the long term, many pipeline companies signed "take-or-pay" provisions with producers that obligated them to pay for gas even if it could not be marketed. Pipelines have significant incentives to secure supplies in this fashion because of their regulatory treatment; FERC allows pipeline companies to earn a return on the value of their pipelines only if they can demonstrate that they have contracted for enough gas reserves to keep the pipeline "used and useful." In addition, FERC prohibits large gas consumers from contracting for gas from a pipeline unless it can demonstrate its ability to satisfy their needs for many years to come. This particular concern arose because of the natural gas shortages of the mid-1970s when many pipelines were unable to meet their commitments to customers. Thus, gas pipelines were encouraged by regulation and economic conditions to secure large amounts of gas at prices above those sustainable in competitive markets and to guarantee the purchase of that gas through long-term contracts.

The recession of 1981-1982 and the simultaneous worldwide decrease of oil demand, however, dramatically changed conditions in the gas market. Gas prices historically had been lower than their oil-equivalent prices. But as more and more high-cost gas was contracted by pipelines and as the price of oil fell during the recession, the gap between oil and gas prices rapidly

closed, and gas prices approached the level at which gas was as expensive to burn as oil. (This was particularly true in the industrial boiler market, in which gas competes with residual oil, a relatively cheap petroleum product). Gas prices now appear to have risen to levels at which they rival other fuels. This is demonstrated by the fact that the average price found in new contracts for high-cost gas fell by about \$1 per thousand cubic feet from June 1981 to June 1982. Moreover, many pipelines are now renegotiating downward the prices they pay to gas producers. These price declines are evidence that demand for relatively higher price gas has fallen and that pipelines can no longer raise the price of gas paid by their customers. As pipelines found themselves unable to sell all their gas, their "take-or-pay" provisions went into effect. Obligated to buy new and more expensive supplies, pipelines were often forced to cut back their purchases of less expensive gas, precisely the opposite of the sequence that would presumably occur in a competitive market.

Under decontrol, therefore, gas prices would fall further only if pipelines could reorder the purchasing of their supplies, buying lower-cost gas before more expensive gas. With the soft gas market, a considerable amount of low-cost gas currently is available on the market, but pipelines often cannot buy it because their existing contracts lock them into more expensive purchases. This problem might be addressed through legislation that would allow pipelines to dissolve their contracts with high-cost producers or, short of that, to pressure high-cost gas producers to negotiate their prices downward. Thus, if pipelines can achieve this flexibility, then the oversupply of gas now available in the domestic market would force gas prices down, as it would in a competitive market.

This is the context within which the Congress is reconsidering gas pricing policy. Decontrolling the wellhead price of all gas might not lead to immediate increases in average gas prices if competition from oil prevents pipelines from passing on these higher prices to their customers. Given this strong competition from oil, pipelines have the incentive to search for lower gas prices if the law and their contracts allow them to.

But while gas prices have the potential to fall, gas supplies could nonetheless increase. If pipelines could escape from their high-cost gas contracts and resequence the purchase of their supplies (either in courts, through other contract provisions, or through Congressional action), natural gas wellhead price decontrol could result in a substantial redistribution of revenues within the natural gas industry--producers of high-cost gas would suffer while producers of low-cost, older gas would receive a substantially higher price. By redirecting revenues from high-cost to low-cost producers, decontrol might encourage a more efficient search for gas supplies and, therefore, result in both higher levels of domestic gas reserves and possible

price decreases. Equalizing national wellhead gas prices, therefore, might be one way to increase the long-term availability of natural gas. However, equalizing the wellhead prices of all the nation's gas would change the prices that many consumers pay, depending on whether the pipelines that serve them have high- or low-priced gas under contract and whether they can recontract their supplies.

This analysis focuses on the NGPA and two major alternative gas pricing proposals--the Senate bill (as reported by the Energy Committee) to decontrol gas prices and the Gephardt proposal for recontrol. The major questions it seeks to answer are:

- o Will the proposal change the average price of gas?
- o How will the proposal affect natural gas markets, including consumption and supply decisions?
- o What will be the economic effects of the proposal?

One important issue that this paper does not address is the redistribution of income among consumers. An examination of the prices paid by consumers in individual regions or served by individual pipelines is beyond its scope.

PLAN OF THE PAPER

Chapter II presents a projection of the natural gas market and the economy under current policy (the NGPA), and then analyzes the effects of the two alternate proposals on the gas market and the economy. Economic effects are presented in the form of changes from the CBO five-year forecast.^{1/} It also discusses the methodology and assumptions underlying these estimates. Chapter III then examines the sensitivity of these results to changes in the price of oil.

The reader is also directed to other recent CBO publications in this area. In January 1983, the CBO published Natural Gas Pricing Policies: Implications for the Federal Budget. That report presents results comparable to those found in this paper for typical decontrol options. Appendix A

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1. These projections were presented in CBO, The Outlook for Economic Recovery, February 1983, and were updated in CBO, The Economic and Budget Outlook: An Update, August 1983. See Table 4 of this chapter for further explanation.

of that report, "Natural Gas Regulatory History and Contract Provisions," is reprinted here for those who wish to read a more complete description of these subjects. In April 1983, the CBO published Understanding Natural Gas Price Decontrol, a report that describes the history of natural gas regulation in greater detail, and discusses the various facets of the decontrol problem. In addition to these two papers, a forthcoming technical paper, entitled An Empirical Analysis of Energy Economy Interactions, provides documentation for the econometric model used by the CBO in this analysis.