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MASTER

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Preface

The *Natural Gas Monthly (NGM)* is prepared in the Data Operations Branch of the Reserves and Natural Gas Division, Office of Oil and Gas, Energy Information Administration (EIA), U.S. Department of Energy (DOE).

General questions and comments regarding the *NGM* may be referred to Kendrick E. Brown, Jr. (202) 586-6077, Audrey E. J. Corley (202) 586-4804, or Eva M. Fleming (202) 586-6113. Specific technical questions may be referred to the appropriate persons listed in Appendix E.

The *NGM* highlights activities, events, and analyses of interest to public and private sector organizations associated with the natural gas industry. Volume and price data are presented each month for natural gas production, distribution, consumption, and interstate pipeline activities. Producer-related activities and underground storage data are also reported. From time to time, the *NGM* features articles designed to assist readers in using and interpreting natural gas information.

The data in this publication are collected on surveys conducted by the EIA to fulfill its responsibilities for gathering and reporting energy data. Some of the data are collected under the authority of the Federal Energy Regulatory Commission (FERC), an independent commission within the DOE, which has jurisdiction primarily in the regulation of electric utilities and the interstate natural gas industry. Geographic coverage is the 50 States and the District of Columbia.

Explanatory Notes supplement the information found in tables of the report. A description of the data collection surveys that support the *NGM* is provided in the Data Sources section. A glossary of the terms used in this report is also provided to assist readers in understanding the data presented in this publication.

All natural gas volumes are reported at a pressure base of 14.73 pounds per square inch absolute (psia) and at 60 degrees Fahrenheit.

Common Abbreviations Used in the Natural Gas Monthly

AGA	American Gas Association	IOGCC	Interstate Oil and Gas Compact Commission
Bbl	Barrels		
BLS	Bureau of Labor Statistics, U.S. Department of Labor	LNG	Liquefied Natural Gas
Bcf	Billion Cubic Feet	Mcf	Thousand Cubic Feet
BOM	Bureau of Mines, U.S. Department of the Interior	MMBtu	Million British Thermal Units
Btu	British Thermal Unit	MMcf	Million Cubic Feet
DOE	U.S. Department of Energy	MMS	United States Minerals Management Service, U.S. Department of the Interior
DOI	U.S. Department of the Interior	NGL	Natural Gas Liquids
EIA	Energy Information Administration, U.S. Department of Energy	NGPA	Natural Gas Policy Act of 1978
FERC	Federal Energy Regulatory Commission	OCS	Outer Continental Shelf
		PGA	Purchased Gas Adjustment
		Tcf	Trillion Cubic Feet

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U.S. Production of Natural Gas from Tight Reservoirs

by Herbert T. Black ¹

Introduction

Most natural gas production in the United States, about 90 percent, comes from conventional gas reservoirs. The remainder comes from a variety of nonconventional sources, the most volumetrically important of which consists of so-called tight gas reservoirs. The principal distinction between conventional and tight gas reservoirs lies in their marked differences of production rate capability. Due to their geological characteristics, the initial production rates of tight reservoirs are very low as compared to those of conventional reservoirs. This factor often renders them economically marginal. Consequently, some kind of economic incentive must often be present to induce operators to explore for and develop their gas resources.

Since 1980, the Federal Government has allowed operators of new domestic wells drilled into tight gas reservoirs to take either a tax credit on the resulting production or to charge an incentive price that is prescribed relative to the price of oil. The unitary purpose of the Crude Oil Windfall Profits Tax Act's Section 29 tax credit, and the incentive pricing provided under Section 107 of the Natural Gas Policy Act of 1978, was to stimulate exploration for, and development of, technically difficult and economically marginal nonconventional gas reservoirs, especially during times of low oil prices.

For the purposes of this article, tight gas reservoirs are defined as those that meet the Federal Energy Regulatory Commission's (FERC) definition of tight. They are generally characterized by an average reservoir rock permeability² to gas of 0.1 millidarcy or less and, absent artificial stimulation of production, by production rates that do not exceed 5 barrels of oil per day

and certain specified daily volumes of gas which increase with the depth of the reservoir.³ All of the statistics presented in this article pertain to wells that have been classified, from 1978 through 1991, as tight according to the FERC; i.e., they are "legally tight" reservoirs. Additional production from "geologically tight" reservoirs that have not been classified tight according to the FERC rules has been excluded. This category includes all producing wells drilled into legally designated tight gas reservoirs prior to 1978 and all producing wells drilled into physically tight gas reservoirs that have not been designated legally tight. Therefore, all gas production referenced herein is eligible for the Section 29 tax credit. Although the qualification period for the credit expired at the end of 1992, wells that were spudded (began to be drilled) between 1978 and May 1988, and from November 5, 1990, through year end 1992, are eligible for the tax credit for a subsequent period of 10 years.

Based on the above definition of tight gas, U.S. tight gas production increased from 69 billion cubic feet obtained from 3,052 wells in 1979, to 1,264 billion cubic feet obtained from 55,645 wells in 1991. Tight gas production accounted for almost 7 percent of total U.S. natural gas production in 1991. This article updates EIA's tight gas production information through 1991 and considers further the history and effect on tight gas production of the Federal Government's regulatory and tax policy actions. It is based on an EIA Technical Report of the same title "U.S. Production of Natural Gas from Tight Reservoirs," (DOE/EIA-TR-0574), which provides, beyond the material presented in this article, a discussion of the geologic background needed to understand the nature and location of low-permeability reservoirs, a short discussion of each of the major tight gas producing basins, and tight gas production data by major producing formation within each basin.

¹The author acknowledges the assistance provided by Philip Shambaugh and Robert King in the preparation of the production data reported here.

²The permeability of a rock is a measure of its ability to conduct fluid flow through interconnections of the pores that exist between the mineral grains that make up the solid portion of the rock.

³18CFR, Chapter 1, Subchapter H - First Sale Regulation Under the Natural Gas Policy Act of 1978, Subpart G - High Cost Natural Gas, Section 271.703 Tight Formations, Federal Energy Regulatory Commission, April 1, 1991.

Past Studies

EIA previously published two studies about U.S. gas production that included production data for nonconventional gas resources.⁴ The most recent one covered data through 1988 for tight gas, Devonian shales, and deep gas. EIA has published two related studies of U.S. coalbed methane production which document results of the drilling boom for that resource stimulated by availability of the Section 29 tax credit.⁵

Also, a report written for the Gas Research Institute (GRI) by Energy and Environmental Analysis, Inc. (EEA) provided tight gas production estimates for the United States, excluding the Appalachian region, through 1988.⁶ The EEA's methodology caused the GRI production estimates to be higher than EIA's, due to the fact that EEA included some production from geologically tight formation areas that were not legally designated as tight by the FERC.

As noted above, EIA decided to limit its tight gas production estimates strictly to tight gas production obtained from FERC-designated wells, and to only that time period after they were legally designated tight (i.e., no backward extrapolation was done even though in some cases it is known that a particular reservoir was producing before its FERC approval date). EIA's tight gas production volumes are therefore minimums that can be reliably used to show how much tight gas has become eligible for the Section 29 tax credit.

Factors Unique to Tight Gas Resources Development

The Natural Gas Policy Act and FERC Section 107 Tight Gas Designation

The Natural Gas Policy Act (NGPA, Public Law 95-621), signed into law on November 9, 1978, represented a compromise that followed some 18 months of congressional debate. The House of Representatives had initially passed a bill deregulating interstate natural gas prices (intrastate sales of natural gas had never been federally regulated), while the Senate had initially passed a bill extending federal price regulation to intrastate gas sales. Prior to this, interstate natural gas

sales prices had been federally controlled at below-market clearing levels, and an imbalance had therefore developed between interstate and intrastate gas prices, causing loss of supply to interstate commerce. Indeed, at the time Congress was considering the NGPA, increasing oil prices and demand and declining supplies of natural gas had resulted in severe gas shortages as evidenced by curtailments of contracted delivery in many parts of the United States.

The NGPA was designed primarily to facilitate a transition to decontrolled natural gas prices by 1985. However, another purpose was to encourage exploration for and the development of nonconventional and typically high-cost gas resources. Section 107 of the NGPA defined high-cost natural gas as gas produced from (1) a well spudded after February 19, 1977, and completed deeper than 15,000 feet, (2) geopressured brine, (3) coal seams, and (4) Devonian shale. All four of these categories of high-cost gas were deregulated on November 1, 1979, via a FERC ruling.⁷

The NGPA also permitted the FERC to identify gas that was produced under conditions of extraordinary risk or cost and to thereafter establish a maximum lawful price "... necessary to provide reasonable incentives for the production of such gas." Tight formation gas was thus identified and defined by a FERC ruling effective March 21, 1980, and thereby became eligible for incentive pricing, ultimately until January 1, 1985. Tight gas was given the highest ceiling price of any NGPA regulated category. A tax credit, described in the next section, was also available, but producers had to elect either the credit or the incentive price. To receive either benefit, producers were required to prove, via the State regulatory body that had jurisdiction over the geographic area of the reservoir, that the reservoir was eligible to be designated tight according to the FERC's criteria.

The Section 29 Tax Credit

From December 31, 1979, until May 1988, and from November 5, 1990, until December 31, 1992, tax credits were made available for the production of tight gas under Section 29 of the Crude Oil Windfall Profits Tax Act of 1980, which was twice amended to provide extensions of the end of the initial qualification period from December 31, 1989, to December 31, 1992. The amount of the tax credit for tight formation gas was set at 51.7 cents per million British thermal units (Btu).

⁴Energy Information Administration: *Drilling and Production Under Title I of the Natural Gas Policy Act, 1978-1986*, DOE/EIA-0448(86) (Washington, DC, January 1989); *Natural Gas Production Responses to a Changing Market Environment, 1978-1988*, DOE/EIA-0532 (Washington, DC, May 1990).

⁵Energy Information Administration: David Murchison, "Status of Coalbed Methane Recovery in the United States," *Natural Gas Monthly*, September 1988, DOE/EIA-0130(88/09) (Washington, DC, December 1988); Herbert T. Black, "Update on U.S. Coalbed Methane Production," *Natural Gas Monthly*, October 1990, DOE/EIA-0130(90/10) (Washington, DC, December 1990).

⁶R.H. Hugman, P.S. Springer, and E.H. Vidas, *Tight Gas Field, Reservoir, and Completion Analysis of the United States*, Vol. 1, *Project Summary* (Arlington, VA: Energy and Environmental Analysis, Inc., April 1992).

⁷Energy Information Administration, *Drilling and Production Under Title I of the Natural Gas Policy Act, 1978-1986*, p. 36.

For comparison purposes, during the 1980 through 1992 period, the national annual average wellhead price of natural gas ranged between \$1.54 and \$2.58 per million Btu.

Geological Characteristics of U.S. Tight Reservoirs

For fluids such as natural gas to flow easily through a rock, there must be good interconnection of the rock's pore spaces. Otherwise the rock simply stores the fluid. A tight reservoir rock may have much pore space but very low permeability if the pore spaces are not well interconnected. The original porosities and permeabilities of gas-bearing reservoir rocks are initially determined by their environments of deposition. But post-depositional physical and chemical changes that occur at depth during a process called diagenesis often significantly alter a rock's porosity and permeability, and hence its ability to produce gas. Most tight gas reservoir rocks originally had moderate to high porosity and permeability when deposited, but compaction due to deep burial of the rock and the precipitation of cements into the spaces between the mineral grains that form the solid portion of the rock have reduced these properties. Older and deeper sandstones generally are tighter than younger or shallower rocks because they have been buried more deeply, which allows more cementation and compaction to occur. Most U.S. tight gas reservoirs are of the Paleozoic (570-245 million years old) or Mesozoic (245-66 million years old) Eras. The only younger FERC-designated tight gas sandstones are the Wilcox and Vicksburg of the Texas Gulf Coast, both of which date to the Tertiary Era (66 - 1.6 million years old) and are deeply buried,⁸ and the Wasatch of the Uinta Basin, which is also Tertiary. It is often necessary to artificially fracture the rock to create permeable paths around a well bore before economical production can be obtained from a tight gas reservoir. This is the objective of the massive hydraulic fracturing completion techniques applied to many of them. These techniques must often be tailored for the specific area, and they are very expensive.

Beyond the need for artificial stimulation, tight reservoirs are, in general, difficult and expensive to work with. For example, one of the main tools that geologists and engineers use to evaluate reservoirs, the geophysical well log, is very difficult to interpret in tight reservoir rocks due to a variety of their geologic characteristics.⁹ This makes decisions about whether a porous reservoir is present--and if so, exactly where--much more problematical than in conventional reservoirs.

Further, once a discovery well has been drilled and tested, and a decision is made to produce the gas, it is very easy to damage a tight gas reservoir. Many tight reservoir rocks contain secondary clay minerals in their pores, some of which swell when contacted by fresh water or can otherwise easily block the very small pore throats in the rock. The clay minerals also have a high surface-to-volume ratio, which increases the water saturation in the reservoir, lowering its relative permeability to gas.¹⁰ However, careful planning during the drilling phase can nevertheless often reduce these problems.

Yet another problem is that most tight gas reservoirs are either over- or underpressured. That is, the gas pressure in the reservoir is either substantially more or less than the normal hydrostatic pressure associated with the reservoir's depth. Most high porosity tight gas reservoirs are underpressured, while many low porosity tight gas reservoirs in the deep parts of the Rocky Mountain basins are overpressured.¹¹ The abnormal reservoir pressures must be taken into account when a reservoir is drilled. For example, drilling unaware and unprepared into an overpressured gas reservoir can result in a well blowout. Underpressured reservoirs are more difficult to produce than conventional reservoirs because there is not as much pressure driving the gas to the surface. In some cases the gas may have to be compressed before it can be delivered into a pipeline.

Tight Gas Production Technology

While a major purpose of the Section 29 tax credit was to encourage gas producers to explore for, and develop production from, unconventional gas resources, another important purpose was to induce producers to develop new and more economical production enhancement techniques with which they could not otherwise afford to experiment. The combined 1979 through 1992 effect of the incentive pricing for Section 107 gas and the Section 29 tax credit was (as intended) stimulation of the drilling for, and increased production of, unconventional gas. There are three main types of technologies that are presently used to attempt to increase the production rates of low-permeability reservoirs. Their development for tight gas applications can largely be tied to the provided incentives. They are as follows:

1. Artificial fracturing, which creates fractures that intersect the reservoir's natural fracture system

⁸S.P. Dutton and S.E. Laubach, "Comprehensive Geologic Basin Analysis: Application of a Generic Research Approach to Several Tight Gas Sandstone Formations," *In Focus--Tight Gas Sands* (Washington, DC: Gas Research Institute, May 1993), pp. 5-6.

⁹C.W. Spencer, "Review of Characteristics of Low-Permeability Gas Reservoirs in the Western United States," *American Association of Petroleum Geologists Bulletin* 73, 5 (May 1989), p. 621.

¹⁰S.P. Dutton and S.E. Laubach, "Comprehensive Geologic Basin Analysis: Application of a Generic Research Approach to Several Tight Gas Sandstone Formations," p. 6.

¹¹C.W. Spencer, "Review of Characteristics of Low-Permeability Gas Reservoirs in the Western United States," p. 622.

2. Horizontal wells, which intersect the reservoir's natural fracture system at approximate right angles
3. Slim hole wells that are drilled with closer than conventional spacings.¹²

In both artificial fracturing and horizontal drilling, natural fractures must already be present for the gas to be produced from tight gas reservoirs. Most rocks in the earth's shallow crust react to the application of stress in a brittle fashion, forming natural fractures. Because the earth's crust is made up of massive, constantly moving tectonic plates, compression of the crustal rocks results from the collisions of the plates. The resulting compressive stress causes fractures to be created and propagated in the crustal rocks in directions that vary according to the directions of maximum and minimum stress. Fractures can also be formed by crustal extension, as in the Basin and Range Province of the Western United States where deep mantle material upwelling beneath the crust has caused the shallow crustal formations to be extended. Other mechanisms that can cause natural fractures to form in rocks include flexure, uplift, cooling, and fluid migration.¹³

Fractures can be classified according to their method of formation and by the relative movement of the fracture walls. Fractures that have walls which have moved perpendicularly to each other are called extension fractures. These tend to be open fractures unless they have been closed after their formation by subsequent compression or diagenesis. Fractures which have formed by lateral wall movements are called faults. These come in many different kinds, sizes, densities, and orientations. It is thought that natural fractures, of whatever type and origin, have increased the permeability to gas in virtually all productive tight reservoirs.¹⁴ These effects have been described in many tight reservoirs, such as the Cotton Valley of the East Texas Basin, the Mesaverde of the Piceance Basin, and the Frontier Formation of the Green River Basin.

In a hydraulic fracturing operation intended to stimulate tight gas production, knowledge of the orientation and nature of the natural fractures in the reservoir rock is the key to good results. Foreknowledge of the resident stress field is necessary, and there are indicators that reservoir engineers can use to ascertain the stress field in a given area. These are beyond the scope of this article. The interested reader may find more information on this topic in the *Atlas of Major Low-Permeability Sandstone Reservoirs in the Continental United States*.¹⁵

EIA's Calculation of Production from Tight Reservoirs

The EIA's primary detailed data source on gas production is Dwight's Energydata, Inc., (Dwight's). Dwight's maintains production histories by well for all States located outside of the Northeast (the Appalachian area). Identification of the well includes its unique API (American Petroleum Institute) number, the field name, the reservoir name, and the lease name, in addition to information indicating when the well began production. The reservoir type is not provided.

To ascertain which wells were producing tight gas, a second data source was used. FERC Form 121, "Application for Determination of NGPA Criteria," was instituted in 1978 pursuant to the Natural Gas Policy Act (NGPA). It is filed by producers to obtain FERC certification of the gas category under the NGPA. One of the categories is tight gas. The form asks for the unique API well number and the field and well names. EIA accessed a cumulative file of these FERC-121 forms and extracted all FERC-certified tight gas wells. The extract file was then merged with the Dwight's file, thereby coding the Dwight's wells to tight/nontight status. Over half of the FERC-121 records were easily matched to the Dwight's data, while the remainder required manual editing of the field, reservoir, and lease names in order to match the FERC-121 filing to a Dwight's well record.

When all of the FERC-121 filings were matched to the Dwight's well records, a subset was created of the Dwight's data that included all reservoirs that had any tight gas. The data presented in this article were prepared primarily from that subset. For the Appalachian region, a different method had to be used to determine per-well production since the Dwight's data are unavailable for that region. The FERC-121 filings include a filing date and the producer's estimate of production. These variables, plus the well completion date obtained from API well tickets, were used to create an initial level of production for each well. This initial production was then reasonably declined each year. The resulting annual sums for all Appalachian wells, not just those producing from tight reservoirs, were then compared to published production totals for the Appalachian States. Prorated edits that resulted from the comparison were then applied to each well, as necessary, to derive a final estimated annual production by well.

¹²National Petroleum Council, *The Potential for Natural Gas in the United States*, Vol. II, *Source and Supply* (Washington, DC: December 1992), pp. 93-94.

¹³P.L. Hancock, "Brittle Microtectonics: Principles and Practice," *Journal of Structural Geology* 7, 3/4 (March 1985), pp. 437-458.

¹⁴S.P. Dutton and S.E. Laubach, "Comprehensive Geologic Basin Analysis: Application of a Generic Research Approach to Several Tight Gas Sandstone Formations," p. 9.

¹⁵S.P. Dutton, et al., *Atlas of Major Low-Permeability Sandstone Reservoirs in the Continental United States*, Topical Report No. GRI-93/0044, prepared for the Gas Research Institute (Austin, TX: The University of Texas Bureau of Economic Geology, 1992).

U.S. Basins with Tight Gas Production

According to a 1992 National Petroleum Council (NPC) study,¹⁶ U.S. nonconventional gas resources, including tight gas, Devonian/Antrim shales, and coalbed methane, amount to 1,065 trillion cubic feet, subject to the application of currently available exploration and production technologies. Tight gas accounts for 232 trillion cubic feet of that total, with the Rocky Mountain basins containing 53 percent. Twelve percent is in the Arkla/East Texas basins, 9 percent in the Midcontinent area, 8 percent in each of the Texas Gulf Coast and Permian basins, 6 percent in the Appalachian Basin, and 4 percent in all other basins. (A map showing locations of the major tight-gas-containing basins appears as Figure FE1.) Assuming the application of advanced technology as defined in the study, the NPC estimates that tight gas resources would amount to 349 trillion cubic feet—some 117 trillion cubic feet more—and total nonconventional gas resources would amount to 1,295 trillion cubic feet. The NPC also predicts that tight gas production will account for about one half of the domestic gas supply by the year 2030.

There have been a number of other studies which have estimated tight gas resources.¹⁷ In 1973 the Federal Power Commission estimated 600 trillion cubic feet of gas-in-place in three western basins, the Green River, Piceance, and Uinta basins.¹⁸ Gas-in-place is the total amount of gas trapped in the reservoirs, not the technically recoverable portion thereof, or the technically and economically recoverable portion thereof, each of which is volumetrically smaller than the preceding category. In 1978, FERC added the Northern Great

Plains (130 trillion cubic feet) and the San Juan Basin (63 trillion cubic feet) for a total of 793 trillion cubic feet of gas-in-place.¹⁹

Lewin and Associates, in 1978, estimated 423 trillion cubic feet of tight gas-in-place from the most prospective formations of 13 basins to a depth of 12,700 feet.²⁰ In 1980, the National Petroleum Council (NPC) expanded the Lewin study to 113 known and expected tight gas areas and basins and to a depth of 15,000 feet, resulting in estimates of 444 trillion cubic feet of gas-in-place from 10 basins and another 480 trillion cubic feet located in additional potentially productive basins.²¹ In the period 1987 through 1990, the U.S. Geological Survey (USGS) estimated 5,063 trillion cubic feet of gas-in-place in the Green River Basin and 423 trillion cubic feet in the Piceance Basin.²² In 1990-1991, ICF Resources estimated resources of tight gas-in-place for three basins—the East Texas Basin (31 trillion cubic feet), the San Juan Basin (17 trillion cubic feet), and the Piceance Basin (287 trillion cubic feet).²³ Finally, in 1991, Enron Corporation estimated that 201 trillion cubic feet of *recoverable* tight gas are present in the United States.²⁴

Unfortunately, there are no estimates of proved gas reserves, from any source, that distinguish between tight gas and other types of proved gas reserves. Based on the data gathered for this article, at year end 1991 the largest tight gas production volumes came from the Gulf Coast Basin, followed in decreasing order by the East Texas, Appalachian, Permian, and Denver basins. Table FE1 lists tight gas production data for all of the basins in EIA's data base that have such production. Table FE2 summarizes the tight gas production data by State.

¹⁶National Petroleum Council, *The Potential for Natural Gas in the United States*, p. 93.

¹⁷National Petroleum Council, *The Potential for Natural Gas in the United States*, p. 94.

¹⁸Federal Power Commission, *National Gas Survey*, Vol. 2, *Task Force Report of the Supply-Technical/Advisory Task Force - Natural Gas Technology* (Washington, DC, 1973).

¹⁹Federal Energy Regulatory Commission, *National Gas Survey: Nonconventional Natural Gas Resources*, DOE/FERC-0010 (Washington, DC, June 1978).

²⁰V.A. Kuuskraa, et al., *Enhanced Recovery of Unconventional Gas*, Vol. II (Washington, DC: Lewin and Associates, Inc., October 1978).

²¹National Petroleum Council, *Unconventional Gas Sources*, Vol. V, *Tight Gas Reservoirs-Parts I and II* (Washington, DC, December 1980).

²²B.E. Law, et al., "Estimates of Gas Resources in Over-Pressured Low-Permeability Cretaceous and Tertiary Sandstone Reservoirs, Greater Green River Basin, Wyoming, Colorado, and Utah," *Gas Resources of Wyoming*, 40th Annual Field Conference, 1989 (Casper, WY: Wyoming Geological Association), pp. 39-61. R.C. Johnson, et al., *An Assessment of Gas Resources in Low Permeability Sandstones of the Upper Cretaceous Mesaverde Group, Piceance Basin, Colorado* (Washington, DC: U.S. Geological Survey Open File Report 87-357, 1987).

²³ICF Resources: *Impact of Improved Technology on Potential Reserves of Tight Gas in East Texas and North Louisiana*, report GRI-90/0174 prepared for Gas Research Institute (Fairfax, VA, September 1990); *Technical and Economic Evaluation of Low Permeability Sandstones Within the Mesaverde Group, Piceance Basin, Colorado*, report prepared for the Office of Fossil Energy, U.S. Department of Energy (Fairfax, VA, March 1991); *A Geologic Assessment of Natural Gas from Tight Gas Sandstones in the San Juan Basin*, prepared for the Morgantown Energy Technology Center, U.S. Department of Energy (Fairfax, VA, May 1991).

²⁴Enron Corporation, *Enron Corporation's Outlook for Natural Gas: Fueling the Future into the 21st Century* (Houston, TX: Enron Corporation, 1990).

Figure FE1. Principal Basins Producing Tight Gas, 1991

Source: Energy Information Administration, Office of Oil and Gas.

Summary

Responding to incentive gas prices provided under the Natural Gas Policy Act of 1978 and a special tax credit for new gas production provided under the Windfall Profits Tax Act of 1980, the U.S. gas industry increased its exploration and development activities relative to domestic nonconventional gas sources such as gas from low-permeability (tight) reservoirs. The EIA has assembled tight gas production data from 1979 to 1991. Prior EIA studies of tight gas production provided data through 1988. The present study updates the production data through 1991 and presents it by state and geologic basin. Twenty-nine basins were identified as having tight gas production in 1991, accounting for 1,264 billion cubic feet of production, which amounted to about 7 percent of total U.S. gas production.

Because EIA's production data are based only on wells located in areas designated tight by the Federal Energy Regulatory Commission (FERC), production from a given formation does not show up in EIA's tight gas data base until approval by the FERC or a FERC-designated State agency. EIA's production data are therefore only for "legally tight" gas, and the recorded

production steadily increases over time from 1979 to 1991. Tight gas production from all reservoirs that are "geologically tight" would likely show a different trend. According to a previously cited study conducted by Energy and Environmental Analysis, Inc., for the Gas Research Institute, which covered overall tight gas production through 1988, 1985 was the year of peak total tight gas production. This is not an unexpected result, as the highest national annual average wellhead gas prices occurred in the 1982 to 1985 period; the highest, \$2.58 per million Btu, occurred in 1984. Thereafter prices dropped rapidly to a low of \$1.59 per million Btu in 1991, a factor of 38 percent. As a consequence, many marginal tight gas wells that were not eligible for the tax credit, for whatever reason, were undoubtedly plugged and abandoned after 1985.

Now that both the incentive prices and the tax credit are expired for new wells, it is a matter of conjecture what trend tight gas drilling will follow. However, without tax or price incentives, it is unlikely that companies will explore heavily for tight gas, barring the advent of significantly higher overall gas price levels. Therefore, the most likely present outlook is that new drilling for tight gas will decrease after 1993.

Table FE1. Tight Gas Production from Wells Eligible for the Section 29 Tax Credit by Basin, 1979-1991
(Volumes in Million Cubic Feet)

Basin or Other Structure		Year												
		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Anadarko	Prodn=	3,134	12,764	19,098	21,691	23,239	22,462	24,214	23,247	21,152	23,365	23,167	20,671	26,583
	Wells=	74	157	257	321	355	441	454	451	470	448	459	420	443
Appalachian	Prodn=	17,911	57,119	110,578	155,926	18,720	235,925	270,404	280,076	283,407	276,401	267,867	255,987	256,671
	Wells=	2,054	5,943	11,291	16,638	21,165	26,885	31,627	34,401	36,793	38,359	36,978	40,592	41,990
Arkla	Prodn=	644	6,901	18,789	25,229	31,495	36,733	31,900	25,508	22,000	18,760	16,747	16,443	15,834
	Wells=	39	193	393	552	648	701	764	763	816	820	820	822	812
Arkoma	Prodn=	0	21	211	66	41	53	41	52	18	24	48	54	55
	Wells=	0	1	1	1	1	1	1	1	1	1	1	1	1
Bend Arch	Prodn=	0	0	7	5	6	4	3	1	2	2	1	1	1
	Wells=	0	0	1	1	2	1	1	1	1	1	1	1	1
Black Warrior	Prodn=	0	0	22	58	55	57	46	64	79	272	255	244	184
	Wells=	0	0	2	1	1	1	1	2	1	2	2	2	2
Central Western Overthrust	Prodn=	348	4,207	10,031	10,220	8,403	8,959	9,716	8,658	8,540	8,361	9,087	13,666	18,749
	Wells=	10	29	53	79	107	113	117	122	120	124	130	144	188
Chautauqua Platform	Prodn=	52	78	54	1,049	1,766	1,359	1,010	876	1,706	1,603	1,089	601	335
	Wells=	1	1	2	22	24	22	27	25	27	27	26	26	26
Denver	Prodn=	2,271	5,602	11,955	22,627	21,165	33,071	39,124	39,144	41,454	42,726	38,107	43,179	57,522
	Wells=	55	148	342	674	953	2,193	1,835	2,039	2,208	2,325	2,370	2,557	2,497
East Texas	Prodn=	9,255	63,740	119,263	160,562	156,610	201,729	199,796	194,574	177,628	194,832	212,884	276,012	287,922
	Wells=	113	406	797	1,161	1,323	1,527	1,594	1,590	1,619	1,680	1,884	2,119	2,273
Fort Worth Syncline	Prodn=	181	240	144	133	283	620	1,312	2,109	1,778	2,056	3,045	4,106	7,347
	Wells=	1	2	1	2	5	15	36	39	44	50	59	90	111
Green River	Prodn=	505	9,651	31,523	35,351	29,905	36,836	36,715	28,989	34,298	35,857	36,332	37,900	40,226
	Wells=	15	72	156	227	276	308	327	325	333	321	338	344	391
Gulf Coast	Prodn=	8,120	33,160	69,665	98,429	141,292	245,585	342,815	423,638	413,402	359,212	337,330	320,193	363,594
	Wells=	56	229	381	628	816	1,111	1,335	1,461	1,532	1,592	1,648	1,688	1,832
Las Animas Arch	Prodn=	0	0	9	14	9	17	7	1	0	15	6	5	5
	Wells=	0	0	2	2	2	3	2	1	0	2	1	1	1
Mid-Gulf Coast	Prodn=	183	245	272	867	816	1,062	1,119	1,124	1,277	752	651	826	1,448
	Wells=	7	8	10	10	10	10	9	7	7	6	6	8	10
Paradox	Prodn=	0	0	40	176	410	387	258	155	151	87	170	120	109
	Wells=	0	0	2	5	6	7	7	7	6	6	6	5	5
Permian	Prodn=	8,076	22,691	50,112	88,340	118,993	127,278	125,870	111,759	113,087	106,002	122,117	131,184	140,123
	Wells=	317	683	1,256	2,203	2,832	3,209	3,490	3,408	3,547	3,674	4,117	4,090	4,091
Piceance	Prodn=	653	2,648	6,775	10,795	10,416	9,678	9,240	7,481	5,805	5,675	8,790	9,701	10,947
	Wells=	21	71	188	319	376	397	443	407	332	291	332	387	375

See note at end of table.

Table FE1. Tight Gas Production from Wells Eligible for the Section 29 Tax Credit by Basin, 1979-1991
(Continued)
(Volumes in Million Cubic Feet)

Basin or Other Structure		Year												
		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Powder River	Prodn=	0	0	0	86	69	57	65	42	37	33	25	17	16
	Wells=	0	0	0	3	3	4	4	4	4	4	3	2	3
San Juan	Prodn=	3,502	5,791	12,650	17,296	16,594	19,806	17,590	15,917	18,002	14,491	16,674	18,664	17,805
	Wells=	163	224	377	486	597	657	735	748	736	710	756	759	735
South Oklahoma Folded Belt	Prodn=	0	0	0	0	228	173	94	143	83	80	46	149	14
	Wells=	0	0	0	1	1	1	1	1	1	1	1	1	1
Strawn	Prodn=	0	0	0	0	0	0	0	0	0	0	0	181	73
	Wells=	0	0	0	0	0	0	0	0	0	0	0	1	1
Uinta	Prodn=	9,131	12,878	14,069	20,696	18,236	23,867	19,025	17,807	16,023	15,390	15,804	16,719	15,866
	Wells=	125	161	221	292	310	339	351	349	352	350	343	341	281
Williston	Prodn=	0	0	0	0	0	0	0	0	0	0	0	76	102
	Wells=	0	0	0	0	0	0	0	0	0	0	0	4	6
Wind River	Prodn=	5,245	4,212	2,652	3,752	4,292	1,986	2,744	2,311	1,006	405	793	2,130	2,665
	Wells=	1	3	3	7	7	7	7	8	7	4	6	7	12

Source: Energy Information Administration, Office of Oil and Gas, as derived from FERC Form 121 filings and Dwight's Energydata, Inc., well production files.

**Table FE2. Tight Gas Production from Wells Eligible for the Section 29 Tax Credit by State,
1979–1991**
(Volumes in Million Cubic Feet)

State	Year						
	1979	1980	1981	1982	1983	1984	1985
U.S. Total	69,211	241,968	477,929	673,371	771,538	1,007,701	1,133,113
Alabama	0	0	0	0	0	0	0
Colorado	3,959	10,259	23,405	39,260	37,941	50,020	53,773
Illinois	0	20	17	15	13	11	10
Kentucky	0	0	42	53	264	505	634
Louisiana	814	7,157	18,999	25,440	32,253	37,016	32,061
Mississippi	183	245	294	925	871	1,119	1,165
Montana	0	0	0	0	0	0	0
New Mexico	4,730	8,283	19,498	41,253	54,116	57,879	45,814
New York	1,331	4,602	9,394	16,121	20,596	24,286	24,998
Ohio	10,384	30,404	54,833	72,335	89,132	108,432	121,094
Oklahoma	52	99	722	1,960	3,202	2,260	4,116
Pennsylvania	4,467	15,609	35,065	51,933	59,657	77,866	95,310
Tennessee	8	30	55	67	60	60	53
Texas	26,333	127,838	246,101	338,311	394,618	551,379	657,247
Utah	9,131	12,878	14,109	20,872	18,646	24,254	19,283
Virginia	117	413	925	1,955	2,126	5,306	6,885
West Virginia	1,604	6,061	10,264	13,462	15,374	19,470	21,430
Wyoming	6,098	18,070	44,206	49,409	42,669	47,838	49,240

See notes at end of table.

**Table FE2. Tight Gas Production from Wells Eligible for the Section 29 Tax Credit by State,
1979–1991 (Continued)**
(Volumes in Million Cubic Feet)

State	Year					
	1986	1987	1988	1989	1990	1991
U.S. Total	1,183,683	1,160,943	1,106,396	1,111,037	1,169,831	1,264,198
Alabama	16	37	215	183	183	128
Colorado	51,740	53,009	52,695	52,936	60,165	75,337
Illinois	9	8	8	7	6	6
Kentucky	847	1,032	1,178	2,659	5,657	7,768
Louisiana	25,904	22,335	19,197	17,441	17,526	16,815
Mississippi	1,172	1,319	809	723	887	1,504
Montana	0	0	0	0	76	102
New Mexico	36,656	42,547	31,257	44,444	36,646	32,231
New York	24,251	22,963	21,641	20,489	19,258	18,918
Ohio	119,328	118,985	114,563	109,787	105,107	101,334
Oklahoma	5,594	5,435	6,712	7,630	5,871	10,879
Pennsylvania	102,122	106,566	106,509	103,322	96,963	97,669
Tennessee	48	48	43	42	38	38
Texas	724,554	692,791	658,969	657,595	720,932	792,894
Utah	17,962	16,174	15,477	15,974	16,839	15,975
Virginia	11,019	10,463	10,567	9,803	9,217	8,771
West Virginia	22,461	23,350	21,900	21,765	20,747	22,173
Wyoming	40,000	43,881	44,656	46,237	53,713	61,656

Note: These data represent "legally tight" production, which is a subset of all "geologically tight" production.

Source: Energy Information Administration, Office of Oil and Gas, as derived from FERC Form 121 filings and Dwight's Energydata, Inc. well production files.

The Expanding Role of Underground Storage

by James Tobin, John H. Herbert, and Joan Heinkel

Market forces and regulatory changes during the past decade have led to increased awareness of the importance and value of natural gas storage services. Although competition throughout the industry has increased substantially since the Federal Energy Regulatory Commission (FERC) issued Order 436 in 1985, limited access to storage services has restricted the effectiveness of open-access transportation services. Addressing the importance of storage to quality pipeline service, FERC Order 636 (issued April 1992) mandated changes aimed specifically at providing access to storage capacity and unbundling storage services.²⁵ This article discusses the expanded role of underground natural gas storage in the restructured natural gas industry. It focuses on the changes in storage use since open-access transportation under Order 436 and the further changes that may develop as a result of Order 636.

Large amounts of storage capacity will be opened to transportation customers when Order 636 provisions are fully implemented. Order 636 restructuring filings submitted to FERC by interstate (jurisdictional) storage operators indicate that generally 80 to 90 percent of interstate working gas storage capacity²⁶ will become available to customers. The storage operators plan to retain the remaining 10 to 20 percent for load balancing, system management, and support of a new transportation service called "no-notice."²⁷ Even before implementation of Order 636, however, the development of a more competitive market environment has brought about significant changes in the operation and use of underground storage. For instance:

- The growth in transportation service prompted several operators to open their storage to others. At the beginning of the 1987-88 heating season,²⁸ 28 percent of interstate pipeline working gas was

owned by pipeline company customers (Figure FE2). By the 1992-93 heating season, the level had risen to 42 percent.

- From 1990 through 1992, working gas capacity increased by 51 billion cubic feet (1 percent) and deliverability from underground storage increased by 2.7 billion cubic feet per day (5 percent).²⁹
- Overall, injection and withdrawal activity has increased substantially since the 1985-86 heating season, even after adjustment for weather effects (Figure FE3). More gas is being injected during the winter, on average, and more gas is being withdrawn in the summer than was the case before FERC Order 436 (Table FE3).
- Yet, at both the beginning and end of the past two heating seasons (1991-92 and 1992-93), the average level of working gas capacity in use has declined (Figure FE4). In contrast, at the beginning of each of the three heating seasons before 1991-92, capacity in use had increased (Table FE4). This variability reflects, in part, the greater attention to inventory management resulting from the more responsive and open market for storage services.
- As of March 1993, more than 80 storage projects had been announced for completion by the end of the decade. By 1996, these projects could result in an increase of about 13 percent (514 billion cubic feet) over December 1992 working gas capacity levels and about 26 percent (16 billion cubic feet per day) over daily deliverability levels (Table FE5).

²⁵Offered as a distinct service, separately charged, and itemized.

²⁶Working gas is the portion of natural gas in storage sites ordinarily available for withdrawal and delivery to markets. In addition to working gas capacity, a portion of total reservoir capacity must be reserved for base (cushion) gas to maintain reservoir integrity and operational pressures.

²⁷No-notice transportation service allows shippers to receive delivery on demand up to their firm entitlements. No-notice provisions were generally part of the bundled sales service offered by pipeline companies prior to Order 636. Because of unbundling, pipeline companies may no longer be the supplier of the gas. However, the companies still must ensure that customers will receive their gas when "the valve is turned on."

²⁸The heating year is defined as beginning on April 1 and extending to March 31 of the following year; the nonheating season as the period between April 1 and October 31; and the heating season as the period between November 1 and March 31.

²⁹Form EIA-191, "Underground Gas Storage Report," filed monthly with the Energy Information Administration. Additional data in the article were attained from filings with the Federal Energy Regulatory Commission, from various natural gas industry publications, the American Gas Association, and the Gas Research Institute.

Owners of Storage

The principal owners of underground storage facilities are (1) interstate pipeline companies, (2) local distribution companies (LDC's), (3) intrastate pipeline companies, and (4) independent storage service providers. Several natural gas producers and large industrial users also own a limited amount of storage.

- **Interstate pipeline companies** account for 63 percent of all working gas capacity in the United States (Table FE6). Historically, these FERC-jurisdictional companies have owned and distributed most of the natural gas from U.S. underground storage sites. Underground storage is particularly important to interstate pipeline companies because they depend heavily on storage inventories to facilitate load balancing and system supply management on their long-haul transmission lines.
- **LDC's and intrastate pipeline companies** account for about 33 percent of working gas capacity. LDC's generally use gas from storage sites to serve customer needs directly, whereas intrastate pipeline companies use underground storage for operational balancing and system supply as well as the energy needs of end-use customers. While most LDC and intrastate pipeline storage operations are subject only to State regulatory agencies, a few (9 of 56) are subject to FERC jurisdiction because they also provide significant service to the interstate market. LDC's are highly dependent upon underground storage because they must be ready to serve their residential and other firm customers with supplies at all times, especially during periods of winter peak demand. Without access to market area storage, LDC's must contract for more capacity on their supplying pipelines than would otherwise be the case, thus incurring large charges (reservation fees) based upon maximum peak-day demand.
- **Independent operators** own or operate about 4 percent of working gas capacity. Many of the salt cavern and high-deliverability sites currently being developed have been initiated by independent storage service operators. If the independent operators principally serve the interstate market they are subject to FERC regulations; otherwise, they are State regulated. Several independent storage operations are joint ventures that include major interstate pipeline companies and LDC's as partners, or they are subsidiaries of interstate pipeline companies operating as independent entities.

- Independent operators are the main developers of new storage capacity (Figure FE5). These operators have increasingly entered the market to accommodate the growing needs of potential customers who cannot acquire capacity because existing sites are already devoted to system needs and former sales customers.

Growth in Customer Access to Storage

Before the issuance of FERC Order 436 in 1985,³⁰ storage services were used for the most part to support the terms and conditions of sales service. Most local distribution companies (LDC's) still utilize storage in the

same manner. On the other hand, in recent years interstate storage operators subject to FERC jurisdiction have been opening their storage facilities to transportation customers, as sales service has become a much smaller part of their business.

The issuance of the FERC policy statement on rate design in May 1989³¹ further contributed to the movement toward open-access storage. The policy statement recommended a revised rate structure for storage services, which in effect called for unbundling of storage service. Rates would be stated with separate charges for capacity (a reservation or gas inventory charge), delivery (deliverability costs), injection, and withdrawal.³²

³⁰Order 436/500 was issued, in part, to provide incentives to pipeline companies to institute "open access" transportation programs and transport gas on a nondiscriminatory basis.

³¹Federal Energy Regulatory Commission, *Notice of Proposed Policy Statement (NPPS): Interstate Natural Gas Pipeline Rate Design*, 47 FERC 61295 (1989) (PL89-2-000).

³²FERC suggested that pipeline companies consider adopting a one-part rather than two-part demand rate for pipeline services and stressed a seasonal approach to rates rather than an annual structure. When usage patterns could be clearly differentiated, peak and offpeak demand and commodity charges should be imposed to improve economic efficiency. Adoption would increase demand charges during peak periods while

Figure FE2. Percent of Nonoperator-Owned Working Gas Storage at the Beginning of the Heating Season (November 1), 1986-1992

Sources: 1986-1990: Energy Information Administration, EIA-191/FERC-8, "Underground Gas Storage Report"; 1991 - November 1, 1992: Energy Information Administration, EIA-191/FERC-8, "Underground Storage Report."

As customers increasingly used transportation services rather than bundled sales services, several interstate pipeline companies sought FERC authority to operate as open-access storage providers.³³ By mid-1991, 10 companies had been granted authority to institute open-access storage services. These services were generally offered to existing customers as part of a "sales" conversion package, but were only offered to new customers on a capacity-available basis. Both firm and interruptible storage services were offered. Firm service could be for different durations, such as 60, 90, and 120 days. Generally, the shorter the term, the greater the cost for service.

The percentage of working gas in interstate storage not owned by pipeline companies has been generally increasing since 1985 (Figure FE2). At the beginning of the heating season, the percentage of total working gas in interstate storage owned by customers grew from 27 percent in 1986 to 42 percent in 1992. During the same period, the working gas capacity used by others in LDC-owned storage also increased.

As previously noted, Order 636 now mandates open access to storage facilities that are under FERC jurisdiction. Most interstate pipeline operators are likely to make 80 to 90 percent of their working gas storage capacity available to their customers, while retaining the rest for load balancing and system management. Several State public utility commissions, such as in California and Illinois, have also taken steps to allow or require their jurisdictional (intrastate) storage operators to open storage to others.

Although Order 636 will directly affect only interstate storage operations, its impact will be widespread. Interstate pipeline operators account for over 60 percent of total U.S. working gas capacity and 52 percent of daily deliverability from storage (Table FE6). Thus approximately half of all working gas capacity will be accessible to customers as a result of the restructuring. Much of this storage will probably not be placed on the open market immediately since it will be offered first to existing pipeline customers.

decreasing the commodity charges slightly overall. This shift could make storage more attractive to customers, depending on the cost of storage relative to any seasonal price differences in the cost of gas. If customers could increase their load factor (the ratio of average demand to maximum demand for some time period) appreciably by utilizing storage more during nonpeak periods, they could save on demand charges.

³³An open-access storage designation requires that the storage-related services be offered on a nondiscriminatory basis. Offerings are made during an "open season," in which existing and potential customers may bid on storage capacity that the operator has put up for solicitation. Entitlements are most often assigned on a first-come first-serve basis; schemes for settling ties vary with the offering.

Figure FE3. Withdrawals from Underground Natural Gas Storage During Heating Seasons, 1985-86 Through 1992-93

Note: Because vertical scales differ, graphs should not be directly compared. Monthly withdrawals have been adjusted for weather by subtracting the estimated influence of heating degree days from withdrawals. The estimated influence is obtained by regressing withdrawals on heating degree days.

Sources: 1986-1990: Energy Information Administration, EIA-191/FERC-8, "Underground Storage Report; 1991 - March 31, 1993: Energy Information Administration, EIA-191/FERC-8, "Underground Storage Report; Heating Degree Days: National Oceanic and Atmospheric Administration.

**Table FE3. Monthly Natural Gas Injections, Withdrawals, and Working Gas Levels,
Heating Years 1983-87 Versus 1988-92**
(Volume in Million Cubic Feet)

Month	Average Injections (per field)				Average Withdrawals (per field)				Average Working Gas (per field)			
	Period 1983-87	Period 1988-92	Volume Change	Percent Change	Period 1983-87	Period 1988-92	Volume Change	Percent Change	Period 1983-87	Period 1988-92	Volume Change	Percent Change
Nonheating Season												
April	380	474	94	25	259	311	52	20	4,803	4,683	-120	-2
May	679	796	117	17	89	119	30	34	5,392	5,324	-68	-1
June	717	853	136	19	66	83	17	26	6,025	6,074	49	1
July	753	849	96	13	80	110	30	38	6,672	6,780	108	2
August	708	828	120	17	90	127	37	41	7,283	7,464	181	2
September	669	801	132	20	64	122	58	91	7,887	8,144	257	3
October	492	594	102	21	160	217	57	36	8,211	8,523	312	4
Nonheating Season Monthly Average	628	742	114	18	115	156	41	36	6,610	6,713	103	2
Heating Season												
November	230	310	80	35	496	585	89	18	7,932	8,230	298	4
December	139	191	52	37	1,122	1,366	244	22	7,023	7,094	71	1
January	116	190	74	64	1,420	1,352	-68	-5	5,678	5,862	184	3
February	132	153	21	16	997	1,219	222	22	4,836	4,829	-7	0
March	243	267	24	10	656	867	211	32	4,441	4,269	-172	-4
Heating Season Monthly Average	172	222	50	29	938	1,078	140	15	5,982	6,057	75	1
Heating Year Monthly Average	438	526	88	20	458	539	81	18	6,348	6,442	94	1

Note: Data are not adjusted for weather.

Sources: 1983-1990: Energy Information Administration, EIA-191/FERC-8, "Underground Gas Storage Report"; 1991 - March 31, 1993: Energy Information Administration, EIA-191, "Underground Gas Storage Report."

Overall Storage Activity Has Increased

Injection and withdrawal activities since 1987 have averaged 20 and 18 percent higher, respectively, than evident during the prior 5 years (Table FE3). Although Order 436 was initially issued in 1985, the majority of open-access certificates were granted to interstate pipeline companies after 1987. Thus, storage operations, averaged over the period from 1988 through 1992 (when most interstate companies were actually operating under Order 436), are compared with operations during the previous 5-year period, 1983 through 1987. For both injections and withdrawals, significant changes are observed when comparing the offpeak nonheating season with the heating season. For instance:

- Average withdrawals per storage field during the nonheating season in recent years increased by over 36 percent, versus an average increase in withdrawals of 15 percent during the heating season (Table FE3). Thus, much of the increased withdrawal activity has occurred during the nonheating season when underground storage facilities are traditionally in their injection cycle.

- Withdrawal activity during the heating season has also increased (by 15 percent). Since withdrawals during the heating season are greatly influenced by weather, it is useful to adjust the data for weather before comparing changes over time.³⁴ After adjusting the withdrawal series for the seasonal influence of heating degree-days, an upward trend in withdrawal activity is clearly still evident (Figure FE3). The trend is pronounced after the 1987-88 heating season. For example, withdrawals in the 1991-92 heating season were 118 billion cubic feet higher than in the 1985-86 heating season.
- Increased injection activities during the heating season are also evident. Average injections in recent years have increased overall by 20 percent and by 29 percent during the heating season.

The increased use in recent years of salt cavern storage is an important source of market flexibility (see Box, "Types of Underground Storage Facilities"). Withdrawals from salt cavern storage account for an increasing percentage of monthly storage withdrawals, particularly during the nonheating season (Figure FE6). Although withdrawals from salt cavern storage represented only 1 to 2 percent of total withdrawals

³⁴When the temperature drops in the winter, the demand for space heating increases. Examination of the relationship between withdrawals and heating degree-days indicates a relatively strong positive relationship. In fact, regression analysis shows that heating degree-days explain 82 percent of the variability in withdrawals. When withdrawals are regressed against heating degree-days and dummy variables for each year, 93 percent of the variability in withdrawals is explainable. Thus, factors other than weather explain an additional 11 percent of the variability.

Types of Underground Storage Facilities

The three principal types of underground storage sites used in the United States today are: (1) depleted reservoirs in gas and/or oil fields, (2) aquifers, and (3) salt caverns. Each type has its own physical characteristics (porosity, permeability, retention capability) and economics (site preparation costs, deliverability rates, cycling capability), which govern their suitability to particular applications.

Depleted Gas/Oil Fields. Depleted oil and gas reservoirs are the most common underground storage sites. They use the pressure of the stored gas and, in some cases, water influx to drive withdrawal operations. The reservoirs are usually designed for one injection and withdrawal cycle per year. Daily deliverability rates from depleted fields vary widely because of differences in the surface facilities, base gas levels, and the fluid flow characteristics of each reservoir. Retention capability, which is the degree to which stored gas is held within the reservoir area, however, is the highest of the three types of underground storage sites. Depleted field storage is also the least expensive to develop, operate, and maintain.

Aquifers. An aquifer storage site is a water-bearing reservoir with particular geological characteristics that allow it to hold natural gas. Aquifers are usually used as storage reservoirs only when depleted gas or oil reservoirs are not available. In general, aquifer storage is more expensive to develop and maintain than depleted gas/oil reservoirs. Unlike a depleted gas/oil field, aquifers require additional facilities, testing, and additional development time. New facilities must be installed from scratch and extra base gas must be bought and injected since no native gas is present. In addition, while base gas in gas/oil storage reservoirs usually is about 50 percent of total capacity, base gas in aquifer storage may constitute more than 50 percent and as much as 80 to 90 percent by the time the site is fully developed for gas storage. Deliverability rates, while variable, are comparable to gas/oil field storage. Aquifer storage is designed for about one cycle per year.

Salt Caverns. Salt bed or dome storage is prepared by injecting water (leaching) into a salt formation and shaping a cavern. It is the most costly of the three types of facilities to develop, often 2 to 3 times more expensive. Because they are susceptible to cavern wall deterioration over time and to salt water incursion, high workover costs may be incurred, as well as additional expenses for special equipment on site. However, deliverability rates are high because a salt cavern is essentially a high-pressure storage vessel (that is, an underground tank). Base gas requirements are low (about 25 percent) and can be withdrawn fully in an emergency. On average, cycling rates range from 4 to 6 times per year, in comparison with 1 to 1.2 cycles for depleted gas/oil field storage, and 0.95 to 1 for aquifer storage. As such, salt cavern storage is well suited for meeting dramatic swings in demand.

during the heating season from 1989 to 1993, they accounted for 7 percent of total withdrawals in the 1992 nonheating season. In June 1993, salt cavern withdrawals rose to a record 17 percent of total withdrawals. Although pipeline companies are not the major participants in salt dome projects, they are beginning to find these storage sites ideal to support their increased load-balancing requirements as well as to provide a backup source for meeting their no-notice service requirements.³⁵

Changes in Storage Use and Users

The principal role of storage is still to build supplies in the market area in order to service short-term variation in demand. Yet, other factors now influence storage activity:

- Traditionally, interstate pipeline companies and LDC's have scheduled storage injections and withdrawals to fulfill their sales service obligations to their customers. Now, however, with the customers' growing access to storage, injections

³⁵In general, storage used for no-notice transportation service must be located fairly close to consumers as it must be available quickly. The salt domes in the Gulf Coast are probably somewhat remote to support this service directly.

Figure FE4. Working Gas Levels as a Percentage of Working Gas Capacity During Nonheating Seasons, 1990-1993

Sources: 1990: Energy Information Administration, EIA-191/FERC-8, "Underground Gas Storage Report"; 1991 - August 31, 1993: Energy Information Administration, EIA-191/FERC-8, "Underground Storage Report."

Table FE4. Average Fill Rates During Nonheating Seasons, 1985-1993

Year	Working Gas Inventory (billion cubic feet)		Average Daily Net Injection Level ^a (billion cubic feet)		Working Gas Capacity on Nov. 1 (billion cubic feet)	Average Utilization Rate on Nov. 1 (percent)
	March 31	November 1	Nonheating Season Overall	During Most Active Month		
1985	1,743	3,204	6.8	8.5	3,741	86
1986	1,764	3,208	6.8	8.3	3,775	85
1987	1,879	3,106	5.7	8.5	3,777	82
1988	1,682	3,243	7.3	9.3	3,770	86
1989	1,777	3,268	7.0	11.8	3,780	87
1990	1,867	3,422	7.3	10.6	3,793	92
1991	1,912	3,369	6.8	9.1	3,813	88
1992	1,545	3,220	7.8	10.6	3,832	84
1993 Under Alternative Heating Season Targets ^b						
3,066	1,235	3,066	8.6		3,832	80
3,257	1,235	3,257	9.4		3,832	85
3,449	1,235	3,449	^c 10.3	^d 13.6	3,832	90

^a Based on 214-day nonheating season extending from April 1 through October 31.

^b Target levels based on attaining working gas utilization of 80, 85, or 90 percent of capacity at the beginning of the heating season.

^c In fact, during the 153-day period from April 1, 1993 through August 31, 1993, the actual average daily net injection rate was 10.3 billion cubic feet per day.

^d Average daily net injections occurring in May 1993 over 31 days.

Sources: 1985-1990: Energy Information Administration, EIA-191/FERC-8, "Underground Gas Storage Report"; 1991 - August 31, 1993: Energy Information Administration, EIA-191, "Underground Gas Storage Report."

Table FE5. Planned Additions to Underground Storage, by Type, 1993-1996
(Volume in Million Cubic Feet)

Year / Type of Project	Depleted Gas/Oil			Aquifer Storage			Salt Cavern Storage ^a			Total		
	Number of Projects	Working Gas Capacity	Daily Delivera- bility	Number of Projects	Working Gas Capacity	Daily Delivera- bility	Number of Projects	Working Gas Capacity	Daily Delivera- bility	Number of Projects	Working Gas Capacity	Daily Delivera- bility
In Service - 1992 ^b	328	3,282,289	52,513	39	514,433	7,347	11	46,804	3,810	378	3,848,526	63,670
1993												
New	6	78,000	1,185	1	4,000	35	7	29,000	2,550	14	111,000	3,770
Expansion	7	19,000	478	1	9,000	125	2	5,000	400	10	33,000	1,003
Total	13	97,000	1,663	2	13,000	160	9	34,000	2,950	24	144,000	4,773
1994												
New	5	137,000	1,850	1	5,000	40	3	13,000	1,050	9	155,000	2,940
Expansion	1	15,000	258	0	0	0	3	11,000	1,000	4	25,000	1,258
Total	6	152,000	2,108	1	5,000	40	6	24,000	2,050	13	180,000	4,198
1995												
New	7	104,000	2,032	0	0	0	6	27,000	2,620	13	131,000	4,652
Expansion	1	5,000	50	1	5,000	40	4	10,000	870	6	20,000	960
Total	8	109,000	2,082	1	5,000	40	10	37,000	3,490	19	151,000	5,612
1996												
New	2	13,000	135	0	0	0	2	9,000	570	4	22,000	705
Expansion	1	6,000	60	1	1,000	0	4	9,000	900	6	16,000	960
Total	3	19,000	195	1	1,000	0	6	18,000	1,470	10	38,000	1,665
Total through 1996												
New	20	332,000	5,202	2	9,000	75	18	78,000	6,790	40	419,000	12,067
Expansion	10	45,000	846	3	15,000	165	13	35,000	3,170	26	95,000	4,181
Total	30	377,000	6,048	5	24,000	240	31	113,000	9,960	66	514,000	16,248

^a Salt dome and bedded-salt storage.

^b As of December 31, 1992.

Note: Totals may not equal sum of components because of independent rounding.

Sources: In Service 1992: Energy Information Administration, EIA-191, "Underground Gas Storage Report." 1993-1996: Energy Information Administration, Office of Oil and Gas, "Proposed Natural Gas Storage Projects," draft data base as of August 31, 1993, based on Federal Energy Regulatory Commission filings and information from various industry news sources.

and withdrawals are increasingly being arranged by customers according to their specific requirements and purchasing strategies.

- Wellhead price volatility has altered purchasing strategies. Price has become a more important consideration and storage fill schedules may be altered to take advantage of favorable price changes.
- Gas producers are using storage facilities as a backup source of supply in the event of unanticipated field equipment problems, and more generally as a means of maintaining constant wellhead production.
- Marketers are assuming the supply aggregation role previously played by the interstate pipeline companies. Marketers are beginning to use storage as a means of building inventories from which to serve their customers and meet sales contracts requirements.

Changes in Working Gas Inventory Levels

Inventory levels in the past 2 years show a reduction in the level of working gas capacity being used to serve the market. In each of the past 2 years, working gas inventory levels at the beginning of the heating season³⁶ have been progressively lower (Figure FE4). This has been especially true for interstate storage operations where working gas levels on November 1 in 1991 and 1992, respectively, reached only 85 and 80 percent of capacity. Before 1991, their working gas inventories generally ranged from 87 to 92 percent of capacity at the beginning of the heating season.

Working gas inventories at the end of the heating season also dropped significantly during the past 2 years, both in volume and as a percentage of capacity. From

³⁶At the close of a heating season, most of the market-area storage operations focus upon building supplies for the next heating season. Injections at most gas field and aquifer storage sites, which operate on a typical 210-day injection, 150-day withdrawal cycle, are scheduled during the nonheating season based on the level of working gas still remaining in the facility at the end of the heating season and the need to reach a desired level of working gas by late October.

Figure FE5. Percentages of Working Gas Capacity and Deliverability in 1992 and Estimated Percentages in 1996, by Operator Type

Sources: 1992: Energy Information Administration, Form EIA-191, "Underground Gas Storage Report"; 1996: Energy Information Administration, Office of Oil and Gas, "Proposed Natural Gas Storage Projects," draft data base as of August 31, 1993, based on Federal Energy Regulatory Commission filings and information from various industry news sources.

Table FE6. Summary of Underground Natural Gas Storage Capacity and Deliverability, by Operator Type, As of December 31, 1992

Operator	Number of Fields	Total Capacity (Bcf)	Working Gas		Deliverability	
			Capacity (Bcf)	Percent of U.S. Total	Total Daily (MMcf/d)	Percent of U.S. Total
Interstate Pipelines						
Largest 5	87	2,774	1,389	36	17,740	28
All Others (22)	110	2,202	1,035	27	15,515	24
Total	197	4,976	2,424	63	33,255	52
LDC's and Intrastate Pipelines						
Largest 5	32	1,383	646	17	13,934	22
All Others (51)	132	1,436	625	16	14,862	23
Total	164	2,819	1,271	33	28,796	45
Independents and Others						
Largest 5	7	186	128	3	620	1
All Others (9)	10	34	25	1	999	2
Total	17	221	154	4	1,619	3
Total All Operators	378	8,016	3,849	100	63,670	100

Bcf = Billion cubic feet. MMcf/d = Million cubic feet per day.

Note: Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, EIA-191, "Underground Gas Storage Report."

Figure FE6. Salt Cavern Withdrawals as a Share of Total Natural Gas Storage Withdrawals, 1989-1993

Note: Data for 1993 nonheating season are through August.

Sources: 1989-1990: Energy Information Administration, EIA-191/FERC-8, "Underground Gas Storage Report"; 1991 - August 31, 1993: Energy Information Administration, EIA-191/FERC-8, "Underground Storage Report."

1985 through 1991, end-of-season inventories ranged from 47 to 53 percent of capacity. In contrast, inventories were 40 percent of capacity in 1992 and 31 percent in 1993 (Figure FE4). Given the severe weather in the East in March 1993 and reactions to the relatively mild winter in 1992,³⁷ the low levels may simply have been a response to weather as well as market conditions.

However, the low inventories may indicate a more fundamental adjustment relating to the economics of storage use and a reassessment of what storage levels are adequate for supply reliability. As some storage services have become unbundled, it is likely that users of storage have become more cost conscious and have begun to evaluate more closely their use of storage relative to their needs and purchasing strategies. This is an important factor in explaining the lower inventory levels in the past few years.

The low March 1993 inventories raised some concern in the industry. Since 1985, the average net injection rate for the nonheating season has not exceeded 7.8

billion cubic feet per day. This rate would have to be exceeded throughout the 1993 nonheating season simply to refill storage inventories to match 1992 levels. In fact, to achieve working gas levels of 80 to 90 percent of working gas capacity, the average daily net injection level would have to average from 8.6 to 10.3 billion cubic feet during the 7 nonheating months (Table FE4).

Nonetheless, there are good indications that by the beginning of the 1993-94 heating season, storage inventories will approach if not reach the level on November 1, 1992. Storage information available through August indicates that storage has been refilled at a very high rate this summer. From March 31 through August 31, 1993, net storage injections averaged 10.3 billion cubic feet per day, with the result that 69 percent of working gas capacity had been refilled (although still slightly below the 73-percent level in 1992) (Figure FE4). During May 1993, average net injections were at a record rate of 13.6 billion cubic feet per day, in contrast to the previous high of 11.8 billion cubic feet per day in June 1989. However, since August inventory levels were below those in August 1992, there still appear to

³⁷Mild weather in January 1992 brought about an overabundance of storage supplies. During February storage was increasingly drawn down and used in place of gas purchases on the open market. This action contributed to the subsequent significant drop in working gas inventories. For further information, see: Energy Information Administration, *Natural Gas 1992: Issues and Trends* (Washington, DC, March 1993), p. 5.

be some indications that the lower average inventory levels of the past several years may be maintained.

Even though there is not a simple relationship between storage levels and price changes (see Box, "Is There a Simple Relationship ..."), the large volume of natural gas being placed into storage this summer has probably contributed to the upward pressure on spot and futures prices of natural gas. In fact, spot prices from April through August remained above 1992 prices for the same period.³⁸ More importantly, the high fill rate during a period of high prices suggests that demand for natural gas is expected to continue to increase this winter, when Order 636 is implemented.

Outlook

On November 1, 1993, all customers should have open access to interstate storage facilities, which will be operating under Order 636 guidelines. Storage services will be offered as distinct services and be separately charged, i.e., unbundled. Depending on the pipeline company and the service profile of its customers, various types of services will be made available (see Box, "Storage Service Offerings"). The unbundling of interstate storage facilities will allow purchasers to duplicate effectively the sales service previously provided by the pipeline companies.

The regulatory changes at the national level and general changes in the marketplace have also affected regulatory and storage practices at the State level. Several States have revised or are in the process of revising their storage regulations to improve the availability of storage to intrastate pipeline companies, local distribution companies, and others.³⁹

Eleven States allow storage operators to offer unbundled storage services and rates to customers as an alternative to bundled service. The specific features of the implementing regulations and their allowances differ among the States, but the general emphasis is on protecting and providing for the core, or captive (residential and small commercial) customer, especially with respect to assured peak-day service.

FERC Oversight of Storage Operations Reduced

As a consequence of Order 636, storage operators will experience regulatory relief in the future. Most importantly, FERC will no longer regularly review the price charged for storage service. Instead, the market will regulate the price (below a FERC-set maximum) much as markets regulate the discounted price of a wide assortment of commodities in the U.S. economy. Rates of return may be more variable as a consequence. If profits increase as a result either of an increase in the value of gas service or a reduction in the cost of providing this service, more storage capacity may be planned. On the other hand, profits may decline and older, less efficient storage capacity may be retired or not refurbished if demand for storage service declines.

Substantial New Storage Facilities Are Planned

Currently, 40 new and 26 expansion storage projects are scheduled to be completed by the end of 1996 (Table FE5). These projects would add approximately 514 billion cubic feet to U.S. working gas capacity, which represents an increase of 13 percent over 1992 levels. Moreover, this activity will generate an additional 16 billion cubic feet of daily deliverability from storage, 26 percent above the 1992 level.

Most (73 percent) of the planned capacity development is the traditional depleted gas/oil reservoir type, yet this component accounts for only 37 percent of the planned increase of daily deliverability and only a 9-percent increase over daily deliverability in 1992. In contrast, salt cavern storage projects represent only 22 percent of the planned increase in working gas capacity, but more than 61 percent of the planned increase in daily deliverability (16 percent above the 1992 level).

Independent operating companies have entered the market in the past several years, offering expanded and flexible storage services. Currently, independent storage accounts for only 4 percent of U.S. working gas capacity, although this is expected to change significantly in the next several years (Figure FE5). Since 1989, approximately 41.7 billion cubic feet of working gas capacity and 2.5 million cubic feet per day of deliverability have been placed on the market by such operators.

³⁸The Oil Daily Company, *Natural Gas Week* (September 3, 1993).

³⁹For a well-detailed and timely exposition on the nature of underground storage regulations in the various States see: The National Regulatory Research Institute, *Gas Storage: Strategy, Regulation, and Some Competitive Implications*, NRRI 90-14 (Columbus, OH, September 1990). For a useful summary of restructuring rulings for major pipeline companies, see: Foster Associates, "Tracking Service, Interstate Natural Gas Pipeline Restructuring Proposals" (Washington, DC, June 1993).

Is There a Simple Relationship Between Storage Levels and Price Changes?

Changes in the price of natural gas between months are influenced by a variety of factors, but many believe that no factor is as important as storage inventory levels. This belief is based upon the need for the industry to have sufficient working gas in place at the beginning of the heating season to meet customer demands over the winter. The idea is that low levels of working gas, relative to historical monthly and seasonal patterns, will increase demand on available supplies and create an upward pressure on prices.

During any month there is a desired level of working gas storage that enables the gas industry to serve all customer demand with little risk. This desired level varies by month. For example, the desired level in January would enable the gas industry to serve all customers even under extreme weather conditions in February. There is, however, a different desired level of working gas storage in July that would enable the gas industry to reach planned storage levels for November. The level of working gas in July is important because the amount of gas the industry can inject per month is limited. Thus, working gas levels during the summer are an indication of whether the industry will be able to attain the necessary level by November.

If the level of storage for a month is low relative to other years, generally one would expect the price of natural gas to increase because of the upward shift in demand as storage operators attempt to rebuild working gas levels. On the other hand, when storage levels are relatively high it is more likely that price will decrease than increase. Accordingly, when working gas levels for a given month over several years are ordered from lowest to highest values, it is expected that price changes will be ordered from highest to lowest because of the expected negative relationship between storage levels and price changes.

But, when data on price changes and working gas levels are examined, it is unclear whether a negative relationship holds between these two series. For example, because working levels were at their lowest level in January 1993, the price change between January and February 1993 would be expected to be higher than for any other year. However, January to February 1993 produced only the next to the highest price change. January 1990 had the third lowest storage levels, yet the price change in the subsequent month was lower than for any other January. Similar results are observed when data are examined for other months.

Working Gas Levels at the End of January and Price Changes Between January and February, 1989-1993

Year	Working Gas (billion cubic feet)	Rank	Price Change (dollars per thousand cubic feet)	Rank
1989	2 509	5	0 04	3
1990	2 265	3	-0 06	1
1991	2 362	4	-0 01	2
1992	2 215	2	0 19	5
1993	2 041	1	0 16	4

It is difficult to draw any general conclusion from a mere examination of the data. Therefore, to summarize the data by month, rank correlation coefficients were computed for working gas levels and price changes by month. When the rank correlation coefficients are examined, one would expect to observe many more negative values than positive values. However, no such relationship is found. In fact, there are as many positive as negative correlations. Thus, in this case, storage level is not a strong driving variable for the gas price. The results suggest that many other factors, such as world oil prices and other economic factors, also influence the price changes.

Storage Service Offerings

To comply with FERC Order 636, interstate storage operators have restructured their storage operations and developed service plans that provide their transportation customers the same access to storage support as was available through bundled sales service. While the specifics differ by company, the restructured, unbundled storage service offerings in general include:

- **Firm (Seasonal) Storage.** This service enables customers to inject, withdraw, and store gas on a firm basis up to a maximum contract level. Among the services are:
 - **Baseload** 100- to 150-day service. Storage supplies are guaranteed over the winter. Customers must arrange for transportation to or from storage separately. Penalties may be incurred if gas is not withdrawn by the end of the heating season or if the customer withdraws or injects gas above monthly or daily limits.
 - **No-notice Service** provides storage supplies on demand. Customers must replace gas received under no-notice service within a specified period or pay a penalty. Often no-notice storage service is bundled and included as part of no-notice transportation service.
 - **Peaking Service** provides for storage supplies for a limited time (up to 30 days) during peak periods. Offered at a premium price.
- **Interruptible Storage Service.** This service provides storage on a "best efforts" basis and is always subject to the service priorities of others, as well as the need to maintain system integrity, efficiency, quality, and flexibility. Customers may be required to withdraw gas on short notice if firm service requires operational support. Transportation of storage volumes must be arranged separately. Capacity allocations among interruptible customers are based on highest bids up to a maximum rate.

Unbundled storage service charges include injection and withdrawal fees, a capacity reservation (demand) charge, and a deliverability (in and out of storage) demand charge. Authorized overrun charges, which are essentially premiums for special services such as peaking or swing gas allowances when they are included in firm services, may also be included. Similarly, penalties for unauthorized injection and withdrawal overages, as well as failure to withdraw all supplies by the close of the heating season, can be imposed.

To meet the needs of today's marketplace, storage operators, primarily the independents, have also developed service plans offering operational flexibility, varying service levels, and market-based pricing. Some are offering customized services designed to attract nontraditional customers and to expand the utility of their storage capacity. For instance, operators of high-deliverability storage are well situated to offer balancing services and rapid response to demand surges for customers such as electric utilities, industrial users, and cogeneration facilities. It is also attractive to LDC's for emergency backup and supply, swing supply needs, and balancing purposes.

The strategic placement of new storage sites in the vicinity of, or with ready access to, multiple pipeline transporters around market hubs is enabling independent operators to compete effectively with traditional storage operators. Since 1989, at least 14 new storage sites have been placed in operation in the United States.

Ten of these projects were developed by independent companies, whereas none were by interstate pipeline companies. Five of these new projects were salt dome storage facilities in Louisiana and Texas designed mainly to satisfy the growing demand for low-volume high-deliverability storage service.

Promising Developments in Technology

New technologies, under development or recently introduced, will also alter the utilization and marketing of underground storage in the near future. For instance, horizontal well drilling in existing gas/oil storage fields has shown that deliverability rates can be attained that are comparable to those for salt cavern storage.⁴⁰ This increase introduces operational flexibility to conventional storage operations that would permit expanded use and marketing of their working gas capacity while lowering their unit costs.

Implementation of horizontal drilling at several storage sites (about 11 to date) has increased deliverability from 4 to 8 times the previous levels. Another technology, which is operational in France and is being tested in the United States, is the replacement of some portion of base gas with inert gases such as nitrogen and argon. Successful use of relatively inexpensive base gas replacements would reduce costs and conserve natural gas that might otherwise be unrecoverable.

Summary

The unbundling of storage services in the interstate market provides substantial additional flexibility for pipeline customers to optimize their purchasing of natural gas and scheduling of deliveries to meet their own needs. Pipeline customers now have the capability to develop service arrangements that are comparable in quality to the former bundled pipeline sales service.

As access to storage has grown in the past few years, the impact of unbundled storage services is already evident in the industry. One consequence of the increased access to storage (as well as the open access on the transportation system) has been an increase in

overall storage activity levels throughout the year, even when adjusted for weather variation. The variation in wellhead prices is also an increasingly important factor as purchasers adjust their activity to take advantage of favorable price movements. The growing development of high-deliverability salt cavern storage facilities has added an important dimension to the market, providing the flexibility to move gas quickly in and out of storage. This flexibility is needed by customers who want to take advantage of their increased purchasing and transportation options.

With the unbundling of storage service, the costs associated with different types of service are more apparent to customers. They can now better evaluate the trade-offs between various gas storage services and other sources of supply. Thus, some adjustment in the overall levels of storage may occur as the strategies and requirements of the new players in the market may differ from those of the pipeline companies. Some adjustments in storage planning and utilization may already be in progress as inventory levels (relative to capacity) at the beginning of the past two heating seasons were below year-earlier levels.

Storage information through August indicates that storage levels for the upcoming winter are roughly comparable to year-ago levels. This has occurred despite the very low inventory levels at the end of March in the aftermath of the severe snowstorm on the East Coast and the continued cool weather in early spring. The industry has been moving natural gas into storage at rates exceeding historical injection rates. Through August 1993, injections averaged 10.3 billion cubic feet per day, with the result that 69 percent of working gas capacity had been refilled. Inventories comparable to year-ago levels appear to be attainable, allaying some concern about the ability of the system to exceed previous offpeak fill rates. Given the uncertainty associated with the implementation of Order 636 for this heating season, storage users may well choose to be cautious going into this heating season.

⁴⁰One of the first tests of this technique was performed in the West Edmond storage field near Oklahoma City, OK, in 1992. See Gas Research, "Horizontal Storage Well Field Experiment," GRI-93/0021 (March 1993).

Overview

Supply and Disposition

The Energy Information Administration estimates that marketed production (gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations) totaled 1,525 billion cubic feet in August 1993 (Table 1). This is slightly higher than in August 1992.

The total gas supply available for disposition in August 1993 was an estimated 1,763 billion cubic feet, 6 percent greater than in August 1992 (Table 2). The August 1993 total includes 98 billion cubic feet withdrawn from storage, 9 billion cubic feet of supplemental fuel supplies, and 165 billion cubic feet of imported gas.

On the disposition side, the consumption of 1,332 billion cubic feet was 1 percent less than in July 1993 and 5 percent greater than in August 1992 (Table 2). Total disposition included 419 billion cubic feet of gas injected into underground storage reservoirs and exports of 13 billion cubic feet.

Consumption

Data for the four major end-use sectors indicate that the total amount of gas delivered to all consumers in July 1993 was 1,204 billion cubic feet, 5 percent greater than in June 1993. (Table 3). Consumption in the industrial sector increased from 597 billion cubic feet in June 1993 to 618 billion cubic feet in July 1993, an increase of 4 percent.

The electric utility sector consumed 333 billion cubic feet in July 1993, which is 31 percent greater than in June 1993 and almost identical to June 1992.

The residential sector consumed 130 billion cubic feet in July 1993, 2 percent lower than in July 1992. The commercial sector consumed 123 billion cubic feet in July 1993, 1 percent higher than in July 1992.

Prices

In July 1993, major interstate pipeline companies paid an average of \$2.02 per thousand cubic feet for gas purchased from domestic producers, slightly less than June's \$2.03 price and a 9-percent increase from the \$1.86 paid in July 1992 (Table 4). In July 1993, these pipeline companies paid \$1.78 per thousand cubic feet for imported gas.

Distributors paid an average \$3.34 per thousand cubic feet for gas at the city gate in July 1993. This is 3 percent less than what these distributors paid in June 1993 and 11 percent greater than they paid in July 1992. Residential consumers paid \$7.83 per thousand cubic feet in July 1993, 8 percent higher than what they paid in July 1992. Commercial consumers paid \$5.03 per thousand cubic feet in July 1993, 5 percent greater than the \$5.31 paid in June 1993 and 8 percent higher than what they paid in July 1992.

Industrial consumers paid \$2.71 per thousand cubic feet in July 1993, an 8-percent decrease from the June 1993 price of \$2.95 and 7 percent greater than in July 1992. Electric utilities paid an average of \$2.47 per thousand cubic feet in June 1993, an increase of 15 percent from the \$2.90 per thousand cubic feet paid in May 1993.

Table 1. Summary of Natural Gas Production in the United States, 1987-1993
(Billion Cubic Feet)

Year and Month	Gross Withdrawals	Repressuring	Nonhydrocarbon Gases Removed ^a	Vented and Flared	Marketed Production (Wet)	Extraction Loss ^b	Total Dry Gas Production ^c
1987 Total	20,140	2,208	376	124	17,433	812	16,621
1988 Total	20,999	2,478	460	143	17,918	816	17,103
1989 Total	21,074	2,475	362	142	18,095	785	17,311
1990 Total	21,523	2,489	289	150	18,594	784	17,810
1991							
January	R 1,958	235	24	13	R 1,886	76	R 1,810
February	R 1,738	221	22	12	R 1,483	67	R 1,417
March	R 1,889	245	24	13	R 1,607	72	R 1,535
April	R 1,800	234	21	14	R 1,531	69	R 1,462
May	R 1,786	227	23	15	R 1,522	69	R 1,453
June	R 1,713	226	22	14	R 1,451	65	R 1,385
July	R 1,740	236	23	16	R 1,465	66	R 1,399
August	R 1,741	231	23	15	R 1,471	66	R 1,405
September	R 1,716	214	24	14	R 1,484	66	R 1,398
October	R 1,864	245	23	15	R 1,580	71	R 1,509
November	R 1,864	226	23	15	R 1,600	72	R 1,528
December	R 1,942	231	24	15	R 1,673	75	R 1,597
Total	R 21,750	2,772	276	170	R 18,532	835	R 17,698
1992							
January	R 1,952	R 251	24	R 14	R 1,683	R 77	R 1,586
February	R 1,748	R 247	22	13	R 1,467	R 68	R 1,398
March	R 1,837	R 254	22	14	R 1,547	R 72	R 1,475
April	R 1,801	R 246	R 24	R 13	R 1,518	R 71	R 1,447
May	R 1,842	R 248	R 24	R 12	R 1,557	R 73	R 1,485
June	R 1,800	R 246	R 23	R 15	R 1,515	R 71	R 1,444
July	R 1,842	R 238	R 24	R 18	R 1,564	R 73	R 1,491
August	R 1,799	R 237	R 24	R 15	R 1,522	R 71	R 1,451
September	R 1,786	R 242	R 21	15	R 1,508	R 70	R 1,437
October	R 1,899	R 253	R 25	R 13	R 1,608	R 75	R 1,533
November	R 1,871	R 246	R 23	R 14	R 1,588	R 74	R 1,514
December	R 1,956	R 263	R 24	R 14	R 1,656	R 77	R 1,579
Total	R 22,132	R 2,973	R 280	R 168	R 18,712	R 872	R 17,840
1993							
January	R 1,993	R 270	22	15	R 1,687	R 79	R 1,608
February	R 1,775	R 246	R 21	14	R 1,494	R 70	R 1,424
March	R 1,940	R 266	21	14	R 1,640	R 76	R 1,563
April	R 1,885	256	R 22	16	R 1,592	R 74	R 1,518
May	R 1,901	R 261	R 21	15	R 1,605	R 75	R 1,530
June	R 1,828	R 242	R 21	14	R 1,551	R 72	R 1,479
July	RE 1,848	RE 250	RE 21	15	RE 1,563	173	RE 1,490
August	R 1,803	R 243	R 20	R 14	R 1,525	R 71	R 1,454
1993 YTD	14,974	2,034	189	115	12,656	590	12,066
1992 YTD	14,620	1,968	188	111	12,353	576	11,778
1991 YTD	14,364	1,856	182	111	12,216	550	11,665

^a See Appendix A, Explanatory Note 1 for a discussion of data on Nonhydrocarbon Gases Removed.

^b Extraction loss is only collected on an annual basis. Annually it is between 4 and 5 percent of marketed production. Monthly extraction loss is estimated from monthly marketed production by assuming that the preceding annual percentage remains constant for the next twelve months.

^c Equal to marketed production (wet) minus extraction loss.

R = Estimated Data.

RE = Revised Data.

RE = Revised Estimated Data.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources: EIA, *Natural Gas Annual 1992* Table 7 and EIA estimates, January 1993 through current month. See Appendix A, Explanatory Notes 1, 3, and 6 for discussion of computation, estimating procedures, and revision policy.

Table 2. Supply and Disposition of Dry Natural Gas in the United States, 1987-1993
(Billion Cubic Feet)

Year and Month	Supply					Total Supply/Disposition ^a	Disposition		
	Total Dry Gas Production	Withdrawals from Storage ^b	Supplemental Gaseous Fuels ^b	Imports	Balancing Item ^c		Additions to Storage ^a	Exports	Consumption ^a
1987 Total	16,621	1,905	101	993	-444	19,176	1,911	54	17,211
1988 Total	17,103	2,270	101	1,294	-453	20,315	2,211	74	18,030
1989 Total	17,311	2,854	107	1,382	-218	21,435	2,528	107	18,801
1990 Total	17,810	1,986	123	1,532	-149	21,302	2,499	86	18,716
1991									
January	^a 1,610	^a 717	^a 12	163	^a -80	^a 2,412	^a 104	10	^a 2,299
February	^a 1,417	^a 422	^a 10	138	^a 38	^a 2,024	^a 102	11	^a 1,912
March	^a 1,535	^a 300	^a 11	151	^a -29	^a 1,968	^a 118	10	^a 1,840
April	^a 1,462	^a 94	^a 9	144	^a 78	^a 1,766	^a 234	9	^a 1,542
May	^a 1,453	^a 48	^a 9	141	^a 36	^a 1,688	^a 343	8	^a 1,337
June	^a 1,385	^a 31	^a 7	133	^a -13	^a 1,545	^a 339	7	^a 1,199
July	^a 1,399	^a 65	^a 9	135	^a -9	^a 1,599	^a 307	8	^a 1,283
August	^a 1,406	^a 71	^a 9	127	^a -31	^a 1,581	^a 298	10	^a 1,274
September	^a 1,398	^a 87	^a 8	134	^a -53	^a 1,554	^a 312	11	^a 1,231
October	^a 1,509	^a 93	^a 9	157	^a -75	^a 1,693	^a 280	14	^a 1,419
November	^a 1,528	^a 368	^a 9	169	^a -226	^a 1,846	^a 140	15	^a 1,691
December	^a 1,597	^a 477	^a 11	181	^a -125	^a 2,141	^a 114	18	^a 2,009
Total	^a 17,696	2,752	113	1,773	^a -500	^a 21,836	2,672	129	^a 19,035
1992									
January	^a 1,586	^a 624	12	165	^a -71	^a 2,315	^a 60	16	^a 2,239
February	^a 1,398	^a 483	11	175	^a 42	^a 2,089	^a 45	14	^a 2,031
March	^a 1,475	^a 397	11	180	^a -42	^a 2,022	^a 74	23	^a 1,926
April	^a 1,447	^a 142	10	176	^a 89	^a 1,864	^a 161	18	^a 1,685
May	^a 1,485	^a 44	9	174	^a 68	^a 1,780	^a 344	19	^a 1,418
June	^a 1,444	^a 35	8	162	^a 16	^a 1,666	^a 384	18	^a 1,264
July	^a 1,491	^a 42	8	167	^a -8	^a 1,700	^a 373	16	^a 1,311
August	^a 1,451	^a 46	^a 8	175	^a -19	^a 1,662	^a 380	18	^a 1,264
September	^a 1,437	^a 40	^a 8	166	^a -24	^a 1,629	^a 362	18	^a 1,249
October	^a 1,533	^a 70	10	178	^a -130	^a 1,659	^a 271	19	^a 1,368
November	^a 1,514	^a 282	11	210	^a -239	^a 1,778	^a 88	19	^a 1,672
December	^a 1,579	^a 587	12	209	^a -191	^a 2,195	^a 58	19	^a 2,119
Total	^a 17,840	^a 2,772	^a 118	2,138	^a -508	^a 22,360	^a 2,599	216	^a 19,544
1993									
January	^a 1,608	605	13	198	^a -64	^a 2,361	50	18	^a 2,293
February	^a 1,424	^a 578	^a 12	183	13	^a 2,211	^a 27	^a 13	^a 2,171
March	^a 1,563	^a 381	12	199	^a 75	^a 2,230	^a 78	^a 17	^a 2,136
April	^a 1,518	111	10	185	^a 76	^a 1,901	219	^a 12	^a 1,670
May	^a 1,530	25	^a 8	^a 160	^a 26	^a 1,749	447	^a 12	^a 1,289
June	^a 1,479	43	^a 10	^a 178	^a -6	^a 1,704	416	^a 11	^a 1,278
July	^a 1,490	^a 48	^a 9	^a 178	^a 30	^a 1,755	^a 398	^a 15	^a 1,342
August	^a 1,454	98	^a 9	^a 165	38	1,783	419	^a 13	^a 1,332
1993 YTD	12,066	1,889	83	1,447	188	15,674	2,052	109	13,512
1992 YTD	11,778	1,793	77	1,375	76	15,099	1,821	142	13,136
1991 YTD	11,665	1,748	76	1,133	-20	14,603	1,846	71	12,686

^a Monthly and annual data for 1987 through 1992 include underground storage and liquefied natural gas storage. Data for January 1993 forward include underground storage only. See Appendix A, Explanatory Note 7 for discussion of computation procedures.

^b Supplemental gaseous fuels data are only collected on an annual basis except for the Dakota Gasification Inc. coal gasification facility where they are gathered each month. The ratio of annual supplemental fuels (excluding Dakota Gasification Inc.) to the sum of dry gas production, net imports, and net withdrawals from storage is calculated. This ratio, which varies between .0026 and .0037, is applied to the monthly sum of these three elements. The Dakota Gasification Inc. monthly value is added to the result to produce the monthly supplemental fuels estimate.

^c Represents quantities lost and imbalances in data due to differences among data sources. See Appendix A, Explanatory Note 10 for full discussion.

^d "Total" data for 1987 through 1992 do not equal equivalent data in Table 1 of the *Natural Gas Annual 1991* due to the exclusion of intransit receipts and deliveries in the NGM.

^e Consists of pipeline fuel use, lease and plant fuel use, and deliveries to consuming sectors as shown in Table 3.

^f = Estimated Data.

^g = Revised Data.

^h = Revised Estimated Data.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources: •Total Dry Gas Production: EIA *Natural Gas Annual 1992*, 1987 through 1992; IOGCC, MMS reporting, and EIA estimates, January 1993 through current month. See Appendix A, Explanatory Note 3 for estimation procedures and revision policy. •Withdrawals from and Additions to Storage: EIA *Natural Gas Annual 1992*, 1987 through 1992; Form EIA-191, January 1993 through current month. •Supplemental Gaseous Fuels: EIA *Natural Gas Annual 1992* 1987 through 1992; and EIA computations, January 1993 through current month. See Appendix A, Explanatory Note 2 for discussion of computation procedures and revision policy. •Imports and Exports: Form FPC-14, 1987 through 1992; and EIA estimates, January 1993 through the current month. See Appendix A, Explanatory Note 4 for discussion of procedures and revision policy. •Consumption and Balancing Item: EIA *Natural Gas Annual 1992*, 1987 through 1992; and EIA computations, January 1993 through current month. See Appendix A, Explanatory Notes 5 and 10 for discussion of computation procedures and revision policy.

Figure 1. Production and Consumption of Natural Gas in the United States, 1990-1994

Source: *Natural Gas Annual* and the *Short Term Energy Outlook*.

Table 3. Natural Gas Consumption in the United States, 1987-1993
(Billion Cubic Feet)

Year and Month	Lease and Plant Fuel ^a	Pipeline Fuel ^b	Delivered to Consumers					Total Consumption
			Residential	Commercial	Industrial	Electric Utilities	Total	
1987 Total	1,149	519	4,315	2,430	5,953	2,844	15,542	17,211
1988 Total	1,096	614	4,830	2,670	6,383	2,636	16,320	18,030
1989 Total	1,070	629	4,781	2,718	6,816	2,787	17,102	18,601
1990 Total	1,236	660	4,391	2,623	7,018	2,787	16,820	18,716
1991								
January	R 102	R 74	844	434	672	173	2,123	R 2,299
February	R 90	R 61	684	359	591	146	1,781	R 1,912
March	R 98	R 58	573	R 310	607	193	1,683	R 1,840
April	R 93	R 49	373	R 225	586	216	1,400	R 1,542
May	R 93	R 42	229	154	571	249	1,202	R 1,337
June	R 89	R 37	148	119	546	260	1,073	R 1,199
July	R 90	R 40	126	125	572	330	1,153	R 1,283
August	R 90	R 40	118	113	586	328	1,144	R 1,274
September	R 89	R 38	138	121	582	263	R 1,103	R 1,231
October	R 97	R 44	225	163	626	263	1,278	R 1,419
November	R 97	R 54	459	256	627	198	1,540	R 1,691
December	R 101	R 64	658	350	665	170	R 1,843	R 2,009
Total	R 1,129	R 601	4,556	R 2,729	7,231	2,789	17,305	R 19,035
1992								
January	R 104	R 68	R 786	R 410	R 701	169	2,067	R 2,239
February	R 92	R 62	R 696	R 366	R 644	170	R 1,876	R 2,031
March	R 97	R 58	R 574	R 315	R 674	208	R 1,770	R 1,926
April	R 95	R 51	431	R 250	R 628	229	R 1,539	R 1,685
May	R 97	R 42	251	R 170	R 620	236	R 1,278	R 1,418
June	R 95	R 37	162	R 125	R 578	266	R 1,132	R 1,264
July	R 98	R 39	132	R 122	R 587	334	R 1,175	R 1,311
August	R 95	R 37	126	R 121	R 582	303	R 1,131	R 1,264
September	R 94	R 37	137	R 121	R 586	274	R 1,117	R 1,249
October	R 101	R 41	241	R 166	R 608	213	R 1,227	R 1,368
November	R 99	R 50	R 437	R 256	R 641	189	R 1,523	R 1,672
December	R 104	R 64	R 717	R 381	R 677	176	R 1,951	R 2,119
Total	R 1,171	R 588	R 4,690	R 2,803	R 7,527	2,766	R 17,786	R 19,544
1993								
January	R 106	R 69	834	R 421	R 699	164	R 2,119	R 2,293
February	R 94	R 65	R 770	R 408	R 672	162	R 2,012	R 2,171
March	R 103	R 64	R 703	R 374	R 699	194	R 1,969	R 2,136
April	R 100	R 50	450	257	R 639	174	R 1,521	R 1,670
May	100	R 39	R 234	R 156	R 593	167	R 1,150	R 1,289
June	97	R 38	R 164	R 127	R 597	255	R 1,142	R 1,278
July	98	40	130	123	618	333	1,204	1,342
1993 YTD	697	366	3,284	1,867	4,517	1,449	11,117	12,180
1992 YTD	678	358	3,033	1,758	4,434	1,612	10,837	11,873
1991 YTD	655	361	2,957	1,726	4,145	1,567	10,395	11,412

^a Plant fuel data are only collected on an annual basis and monthly lease fuel data are only collected annually. Lease and plant fuel estimates have been between 6 and 7 percent of marketed production annually. Monthly lease and plant fuel use is estimated from monthly marketed production by assuming that the preceding annual percentage remains constant for the next twelve months.

^b Pipeline fuel use is only collected on an annual basis. Annually it is between 3 and 4 percent of total consumption. Monthly pipeline fuel data are estimated from monthly total consumption (excluding pipeline fuel) by assuming that the preceding annual percentage remains constant for the next twelve months.

^R = Revised Data.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources: All data except electric utility: EIA *Natural Gas Annual 1992*, 1987 through 1992; and Form EIA-857 and computations January 1993 through the current month. See Appendix A, Explanatory Note 5 for computation procedures and revision policy. Electric utility data: Form EIA-759, "Monthly Power Plant Report" (formerly Form FPC-4).

Figure 2. Natural Gas Deliveries to Consumers in the United States, 1989-1993

Source: *Natural Gas Annual*, Form EIA-857, and Form EIA-759.

Table 4. Selected National Average Natural Gas Prices, 1987-1993
(Dollars per Thousand Cubic Feet)

Year and Month	Wellhead Price ^a	Major Interstate Pipeline Companies		City Gate	Delivered to Consumers			
		Imports ^b	Purchased from Producers ^b		Residential	Commercial	Industrial	Electric Utilities ^c
1987 Annual Average	1.67	2.17	2.10	2.87	5.54	4.77	2.94	2.32
1988 Annual Average	1.69	2.00	2.13	2.92	5.47	4.63	2.95	2.33
1989 Annual Average	1.69	2.04	2.18	3.01	5.64	4.74	2.96	2.43
1990 Annual Average	1.71	2.03	2.19	3.03	5.80	4.83	2.93	2.39
1991								
January	1.96	2.20	2.19	3.08	5.54	4.94	3.25	2.70
February	1.62	2.10	1.93	2.94	5.56	4.94	2.97	2.35
March	1.49	1.92	2.02	2.78	5.60	4.89	2.75	2.21
April	1.50	2.03	1.87	2.74	5.90	4.87	2.68	2.10
May	1.48	1.99	1.96	2.76	6.28	4.65	2.40	2.01
June	1.43	2.03	1.75	2.86	6.97	4.80	2.34	1.94
July	1.34	2.11	1.79	2.74	7.23	4.50	2.23	1.88
August	1.43	1.71	1.71	2.78	7.36	4.73	2.29	1.96
September	1.59	1.84	1.76	2.91	6.92	4.57	2.40	2.19
October	1.82	2.00	1.94	2.92	6.20	4.58	2.69	2.35
November	1.89	2.20	2.02	2.92	5.51	4.71	2.84	2.43
December	2.00	2.09	2.11	3.05	5.51	4.84	3.09	2.64
Annual Average	1.64	2.02	1.92	2.90	5.82	4.81	2.69	2.18
1992								
January	1.73	2.20	2.10	2.90	5.53	4.85	3.04	2.49
February	1.31	1.98	1.70	2.70	5.54	5.03	2.78	2.03
March	1.40	1.45	1.90	2.61	5.50	4.77	2.58	1.99
April	1.47	2.01	1.73	2.74	5.62	4.77	2.54	2.06
May	1.57	1.79	1.99	2.90	6.15	4.59	2.44	2.11
June	1.68	2.03	2.16	3.00	6.84	4.72	2.53	2.18
July	1.61	1.89	1.86	3.01	7.27	4.64	2.54	2.13
August	1.91	1.82	2.14	3.18	7.45	4.73	2.71	2.42
September	1.99	2.05	2.13	3.23	7.15	4.69	2.82	2.51
October	2.46	2.13	2.69	3.50	6.52	4.90	3.21	3.04
November	2.20	2.32	2.37	3.33	6.02	5.12	3.26	2.87
December	2.14	1.92	2.40	3.17	5.74	5.11	3.38	2.81
Annual Average	1.80	1.97	2.10	3.01	5.89	4.88	2.84	2.36
1993								
January	2.05	2.02	2.17	3.11	5.71	5.18	3.26	2.70
February	1.79	1.91	1.94	2.94	5.71	5.08	3.12	2.55
March	1.97	1.78	2.20	3.06	5.66	5.06	3.08	2.61
April	2.11	2.15	2.34	3.24	5.99	5.13	3.13	2.75
May	2.40	2.13	2.81	3.58	6.72	5.21	3.24	2.90
June	1.96	1.95	2.03	3.45	7.32	5.31	2.95	2.47
July	1.99	1.78	2.02	3.34	7.83	5.03	2.71	NA
1993 YTD	2.04	1.96	2.21	3.18	5.97	5.13	3.08	2.65
1992 YTD	1.54	1.91	1.92	2.81	5.74	4.82	2.65	2.14
1991 YTD	1.55	2.06	1.93	2.88	5.80	4.86	2.70	2.18

^a See Appendix A, Explanatory Note 8 for discussion of wellhead price.

^b See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline company data.

^c Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

NA = Not Available.

R = Revised Data.

E = Estimated Data.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Prices for gas delivered to industrial consumers for 1987 include imputed averages for volumes of gas delivered for the account of others. From 1988 on, prices reflect on-system sales prices only. The change in series in 1988 affects the commercial and industrial sector prices.

Sources: •Average wellhead price: EIA *Natural Gas Annual 1992*, 1987 through 1992; and EIA estimates, January 1993 through current month. See Appendix A, Explanatory Note 8 for estimation procedures and revision policy. •Imports and Interstate Pipeline Company Purchases: Form FERC-11. •Average City Gate, Residential, Commercial and Industrial average prices for 1987 through current month from Form EIA-857. See Appendix A, Explanatory Note 5 for discussion of revision policy. •Earlier prices from EIA *Natural Gas Annual 1992*. Electric Utilities average prices from Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Figure 3. Average Price of Natural Gas Delivered to Consumers in the United States, 1989-1993

Source: *Natural Gas Annual*, Form EIA-857, and Form FERC-423.

Figure 4. Average Price of Natural Gas in the United States, 1989-1993

Source: *Natural Gas Annual*, Form FERC-11, and Form EIA-857.

Table 5. U.S. Natural Gas Imports by Country, 1987-1993
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Pipeline		LNG		Total	
	Canada		Algeria		Volume	Average Price
	Volume	Average Price	Volume	Average Price		
1987 Total	992,532	1.95	0	--	992,532	1.95
1988 Total	1,276,322	1.83	17,490	2.71	1,293,812	1.84
1989 Total	1,339,357	1.81	42,163	2.22	1,381,520	1.82
1990 Total	1,448,065	1.91	84,193	2.47	1,532,259	1.94
1991						
January	155,805	2.06	7,643	2.94	163,448	2.11
February	132,962	1.89	5,035	2.49	137,998	1.92
March	146,383	1.83	5,105	2.91	151,487	1.86
April	138,833	1.79	5,122	1.93	143,955	1.79
May	136,202	1.74	5,091	1.66	141,292	1.74
June	130,701	1.72	2,562	1.68	133,264	1.72
July	129,768	1.67	5,091	1.66	134,859	1.68
August	127,139	1.60	0	--	127,139	1.60
September	131,345	1.67	2,589	1.66	133,934	1.67
October	146,489	1.76	10,146	2.41	156,635	1.80
November	163,605	1.89	5,113	2.48	168,718	1.91
December	170,485	1.94	10,099	2.63	180,585	1.98
Total	1,709,716	1.81	63,596	2.36	1,773,313	1.83
1992						
January	157,026	1.95	7,610	2.49	164,636	1.98
February	170,167	1.64	5,076	2.91	175,243	1.68
March	177,978	1.63	2,503	3.32	180,482	1.65
April	173,615	1.62	2,531	2.12	176,146	1.63
May	174,312	1.66	0	--	174,312	1.66
June	159,743	1.77	2,505	2.09	162,249	1.77
July	167,216	1.70	0	--	167,216	1.70
August	172,240	1.81	2,492	3.15	174,733	1.83
September	163,584	1.96	2,533	1.83	166,117	1.96
October	173,904	2.21	2,563	3.19	176,466	2.22
November	202,846	1.94	7,633	2.57	210,479	1.96
December	201,756	2.13	7,670	2.17	209,426	2.13
Total	2,094,387	1.84	43,116	2.54	2,137,504	1.85
1993						
January	192,899	2.06	5,141	2.59	198,039	2.07
February	175,444	1.95	7,654	2.93	183,097	1.99
March	193,830	1.98	5,146	2.24	198,976	1.98
April	177,552	2.04	7,720	2.12	185,272	2.04
May	R 154,640	2.08	5,236	2.01	R 159,876	2.08
June	R 170,870	2.04	7,563	1.94	R 178,433	2.03
July	RE 170,413	NA	7,642	NA	RE 178,054	NA
August	E 160,193	NA	5,091	NA	E 165,285	NA
1993 YTD	1,395,841	NA	51,192	NA	1,447,032	NA
1992 YTD	1,352,298	1.72	22,718	2.66	1,375,016	1.74
1991 YTD	1,097,792	1.79	35,649	2.30	1,133,442	1.81

NA = Not Available.
 -- = Not Applicable.
 R = Revised Data.
 E = Estimated Data.
 RE = Revised Estimated data.

Source: 1987-1992: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1993 through the current month: Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*. Monthly data (for the most current months), Pipeline Fuel: data shown with an E are taken from data from the National Energy Board of Canada plus EIA estimates. LNG: industry reports.

Table 6. U.S. Natural Gas Exports by Country, 1987-1993
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Pipeline				LNG		Total	
	Canada		Mexico		Japan		Volume	Average Price
	Volume	Average Price	Volume	Average Price	Volume	Average Price		
1987 Total	3,297	1.81	2,125	3.18	48,599	3.15	54,020	3.07
1988 Total	19,738	2.02	2,327	3.21	51,573	2.99	73,638	2.74
1989 Total	38,443	2.00	17,004	2.14	51,424	3.01	106,871	2.51
1990 Total	17,359	2.70	15,859	1.88	52,546	3.59	85,565	3.10
1991								
January	1,710	2.47	3,477	2.19	4,375	5.19	9,562	3.61
February	3,343	2.02	2,853	1.70	4,370	4.79	10,566	3.08
March	1,228	2.04	4,404	1.61	4,369	4.13	10,001	2.76
April	2	1.71	3,208	1.56	5,829	3.59	9,039	2.87
May	36	1.73	4,762	1.46	2,947	3.23	7,744	2.14
June	31	1.51	3,759	1.43	2,915	3.18	6,706	2.19
July	195	1.24	3,235	1.28	4,400	3.20	7,830	2.36
August	540	1.21	3,117	1.40	5,869	3.25	9,526	2.53
September	446	1.30	5,921	1.68	4,370	3.31	10,737	2.32
October	2,245	1.57	7,776	1.84	4,371	3.39	14,393	2.27
November	2,385	1.87	8,349	2.00	4,371	3.50	15,105	2.41
December	2,630	1.97	9,586	2.12	5,820	3.61	18,036	2.58
Total	14,791	1.91	60,448	1.76	54,005	3.71	129,244	2.59
1992								
January	2,377	1.87	9,687	1.83	4,368	3.58	16,432	2.30
February	3,654	1.43	5,983	1.24	4,369	3.44	13,986	1.98
March	11,437	1.95	6,707	1.37	4,367	3.27	22,511	2.03
April	5,980	1.35	7,371	1.52	4,403	3.21	17,754	1.88
May	5,919	1.56	7,285	1.69	5,827	3.23	19,030	2.12
June	6,172	1.81	7,262	1.78	4,378	3.31	17,812	2.17
July	5,230	1.67	6,258	1.68	4,379	3.44	15,868	2.16
August	5,074	1.84	8,778	1.97	4,377	3.56	18,229	2.31
September	5,547	1.91	8,181	2.00	4,408	3.61	18,136	2.36
October	6,290	2.19	10,063	2.66	2,920	3.59	19,272	2.65
November	3,487	2.04	10,674	2.26	4,366	3.56	18,527	2.52
December	6,611	2.18	7,743	2.18	4,370	3.52	18,724	2.49
Total	67,777	1.83	95,973	1.90	52,532	3.43	216,282	2.25
1993								
January	R 5,577	2.20	R 7,833	2.03	4,367	3.41	R 17,777	2.42
February	R 6,453	2.06	R 2,121	1.77	4,355	3.29	R 12,929	2.42
March	R 7,583	2.09	R 3,199	1.96	5,812	3.22	R 16,594	2.43
April	R 4,527	1.99	R 2,875	2.13	4,373	3.21	R 11,775	2.48
May	R 3,941	1.88	R 3,453	2.44	4,381	3.29	R 11,775	2.57
June	R 3,647	1.88	R 4,050	1.84	2,950	3.22	R 10,647	2.24
July	E 5,000	NA	E 5,000	NA	5,162	NA	E 15,162	NA
August	E 4,000	NA	E 4,000	NA	4,761	NA	E 12,761	NA
1993 YTD	40,728	NA	32,531	NA	36,162	NA	109,421	NA
1992 YTD	45,843	1.71	59,312	1.66	36,468	3.37	141,623	2.12
1991 YTD	7,085	2.04	28,816	1.57	35,073	3.83	70,974	2.73

NA = Not Available.
R = Revised Data.
E = Estimated Data.
RE = Revised Estimated Data.

Source: 1987-1992: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1993 through the current month: Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*. Monthly data (for the most current months), Pipeline Fuel: data shown with an E are EIA estimates. LNG: industry reports.

Table 7. Marketed Production of Natural Gas by State, 1987-1993
(Million Cubic Feet)

Year and Month	Alabama ^b	Alaska	California	Colorado	Florida	Kansas
1987 Total	117,241	359,837	424,621	164,557	8,281	472,752
1988 Total	129,524	378,638	399,663	191,544	7,484	592,845
1989 Total	128,411	393,729	362,860	216,737	7,534	601,196
1990 Total	135,276	402,907	362,748	242,997	6,483	573,603
1991						
January	13,267	40,203	30,159	20,110	290	63,891
February	11,866	36,265	27,015	23,344	285	54,601
March	13,131	38,847	32,268	23,648	325	57,863
April	13,020	34,664	30,902	24,673	412	51,936
May	13,906	32,434	31,072	22,724	301	R 50,732
June	13,174	33,065	29,259	23,034	94	46,685
July	14,400	33,840	32,169	23,088	381	R 44,913
August	15,273	33,448	31,021	23,659	465	42,777
September	11,850	41,609	31,944	22,546	543	43,491
October	15,207	36,384	35,427	23,868	602	50,386
November	15,502	38,363	34,194	24,349	591	57,959
December	20,250	38,700	32,953	30,918	594	63,225
Total	170,847	R 437,822	378,384	285,961	4,884	628,459
1992						
January	R 28,638	R 40,789	R 32,882	27,414	R 570	R 64,920
February	R 28,093	R 37,311	R 30,127	25,451	R 536	R 56,375
March	R 28,699	R 38,433	R 32,006	R 24,545	R 492	R 53,499
April	R 28,690	R 37,128	R 31,789	25,119	R 488	R 47,445
May	R 28,920	R 37,014	R 32,353	26,318	R 520	R 50,271
June	R 29,312	R 34,222	R 29,550	26,270	R 572	R 48,589
July	R 30,718	R 35,020	R 30,949	25,501	R 458	R 49,051
August	R 29,338	R 32,832	R 30,046	27,256	R 574	R 48,567
September	R 29,402	R 32,233	R 29,211	R 26,061	R 564	R 47,818
October	R 31,435	R 39,237	R 30,386	R 27,474	R 654	R 56,304
November	R 30,470	R 38,453	R 28,070	R 28,461	R 593	R 64,316
December	R 31,386	R 40,924	R 28,262	R 33,152	R 635	R 70,853
Total	R 355,099	R 443,597	R 365,632	R 323,041	R 6,657	R 658,007
1993						
January	24,591	41,375	R 26,956	RE 30,623	637	64,279
February	22,157	35,689	R 24,024	RE 30,043	573	57,258
March	R 22,784	41,674	RE 27,544	RE 29,757	603	61,084
April	R 22,235	39,226	R 25,320	RE 29,907	601	R 53,431
May	R 23,312	35,702	R 25,294	RE 29,932	685	R 54,054
June	E 22,847	E 35,118	27,398	E 29,421	577	50,200
1993 YTD	137,926	228,784	156,536	179,683	3,676	340,306
1992 YTD	172,352	224,897	188,708	155,136	3,179	321,098
1991 YTD	78,364	215,479	180,676	137,533	1,709	325,709

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas by State, 1987-1993 (Continued)
(Million Cubic Feet)

Year and Month	Louisiana	Michigan	Mississippi	Montana	New Mexico	North Dakota
1987 Total	5,122,509	146,996	139,727	46,456	823,773	62,258
1988 Total	5,180,267	146,145	124,053	51,654	791,819	57,747
1989 Total	5,078,125	155,988	102,645	51,307	854,615	51,174
1990 Total	5,241,989	172,151	94,616	50,429	965,104	52,169
1991						
January	R 468,583	15,493	9,113	5,235	96,319	4,640
February	R 408,977	13,850	7,601	4,433	79,943	4,162
March	R 440,394	17,320	9,021	4,779	89,186	4,588
April	R 421,649	18,019	R 9,346	4,786	86,221	4,351
May	R 415,253	19,521	9,745	4,516	86,029	4,419
June	R 388,442	15,994	R 9,499	3,467	81,862	4,481
July	R 387,063	16,468	9,467	3,501	77,279	4,787
August	R 392,982	15,697	8,866	4,081	83,204	4,625
September	R 394,190	16,040	8,183	3,940	83,766	4,054
October	R 430,728	15,055	8,615	4,393	91,254	4,253
November	R 430,550	15,344	9,217	4,166	90,101	4,482
December	R 455,550	16,948	9,359	4,702	R 93,120	4,638
Total	R 5,034,361	195,749	108,031	51,999	R 1,038,284	53,479
1992						
January	R 447,681	R 14,061	R 8,666	R 5,025	R 96,194	R 4,821
February	R 397,242	R 12,580	R 7,632	R 4,831	R 86,756	R 4,469
March	R 415,797	R 16,011	R 7,761	R 5,256	R 94,373	R 4,762
April	R 406,614	R 15,126	R 7,549	R 4,583	R 102,157	R 4,389
May	R 425,880	R 13,012	R 7,602	R 4,429	R 108,294	R 4,486
June	R 411,275	R 20,668	R 7,447	R 3,645	R 101,770	R 4,436
July	R 422,105	R 16,208	R 7,533	R 3,846	R 111,611	R 4,593
August	R 377,693	R 17,200	R 7,553	R 3,746	R 114,145	R 4,609
September	R 375,997	R 19,210	R 7,039	R 3,782	R 109,064	R 4,428
October	R 409,724	R 17,614	R 7,618	R 4,503	R 111,646	R 4,772
November	R 401,240	R 14,277	R 7,694	R 5,083	R 114,329	R 4,490
December	R 423,050	R 18,848	R 7,601	R 5,138	R 118,523	R 4,628
Total	R 4,914,300	R 194,815	R 91,697	R 53,867	R 1,268,863	R 54,883
1993						
January	E 449,393	18,622	7,657	5,205	R 116,663	R 4,484
February	E 400,231	9,728	7,249	4,729	R 108,426	R 3,923
March	E 425,024	24,098	7,166	5,054	R 118,479	R 4,702
April	E 415,982	19,700	7,047	4,304	R 113,865	R 4,664
May	E 435,973	R 14,321	7,025	4,617	R 119,167	R 4,856
June	E 415,775	17,810	6,549	3,984	112,820	4,610
1993 YTD	2,542,378	104,279	42,693	27,893	689,420	27,239
1992 YTD	2,504,491	91,458	46,658	27,769	589,545	27,363
1991 YTD	2,543,299	100,197	54,325	27,216	519,561	26,640

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas by State, 1987-1993 (Continued)
(Million Cubic Feet)

Year and Month	Oklahoma	Texas	Utah	Wyoming	Other ^a States	U.S. Total
1987 Total	2,073,461	6,126,315	87,158	497,980	758,979	17,432,901
1988 Total	2,167,050	6,286,029	101,372	509,058	803,573	17,918,465
1989 Total	2,237,037	6,241,425	120,089	665,699	826,576	18,095,147
1990 Total	2,258,471	6,343,146	145,875	735,728	810,100	18,593,792
1991						
January	194,179	R 567,569	13,995	68,011	R 74,819	R 1,685,877
February	176,577	R 496,899	11,573	60,587	R 65,447	R 1,483,427
March	189,362	R 533,539	12,789	70,023	R 69,790	R 1,806,874
April	182,592	R 506,976	11,468	66,126	R 64,125	R 1,531,264
May	181,866	R 512,679	11,206	62,086	R 63,317	R 1,521,809
June	168,292	R 500,166	10,567	61,837	R 60,626	R 1,450,544
July	176,757	R 505,136	11,021	62,410	R 62,280	R 1,464,959
August	171,545	R 503,988	12,009	65,429	R 61,788	R 1,470,857
September	R 167,685	R 500,654	11,131	62,169	R 60,181	R 1,463,974
October	180,504	R 539,982	13,869	63,623	R 66,247	R 1,580,397
November	179,976	R 544,444	14,091	68,055	R 68,370	R 1,599,756
December	R 184,516	R 568,621	11,098	66,172	R 71,338	R 1,672,701
Total	R 2,153,852	R 6,280,654	144,817	776,528	788,328	R 18,532,439
1992						
January	R 184,091	R 551,786	11,797	R 74,325	R 69,450	R 1,663,111
February	R 166,004	R 483,162	11,312	R 50,091	R 64,761	R 1,466,733
March	R 165,802	R 506,941	12,727	R 71,930	R 68,252	R 1,547,288
April	R 168,030	R 493,746	11,852	R 67,036	R 66,346	R 1,518,106
May	R 165,080	R 510,273	13,378	R 62,977	R 66,344	R 1,557,151
June	R 166,336	R 495,691	13,310	R 58,427	R 63,463	R 1,514,984
July	R 160,800	R 508,414	13,930	R 77,202	R 65,761	R 1,563,702
August	R 159,160	R 515,119	14,425	R 74,171	R 65,848	R 1,522,282
September	R 160,231	R 509,836	15,250	R 73,315	R 64,218	R 1,507,660
October	R 170,825	R 531,794	17,177	R 77,161	R 69,246	R 1,607,569
November	R 172,795	R 513,103	16,718	R 78,509	R 68,952	R 1,587,552
December	R 178,201	R 525,996	19,417	R 77,434	R 71,622	R 1,655,671
Total	R 2,017,356	R 6,145,862	171,293	R 842,576	R 804,264	R 18,711,808
1993						
January	E 181,647	553,029	19,774	R 69,028	RE 72,658	R 1,686,621
February	E 162,327	490,478	19,304	R 52,424	RE 65,382	R 1,493,945
March	E 167,673	554,949	22,763	R 57,523	RE 68,714	R 1,639,591
April	E 165,335	538,617	18,986	R 67,436	RE 65,504	R 1,592,160
May	E 165,190	546,915	17,584	R 55,759	RE 64,466	R 1,604,852
June	E 165,784	521,387	18,487	E 54,683	E 63,598	1,551,048
1993 YTD	1,007,956	3,205,375	116,898	356,853	400,322	9,568,217
1992 YTD	1,015,343	3,041,600	74,376	384,785	398,616	9,267,374
1991 YTD	1,092,868	3,117,829	71,598	388,670	398,124	9,279,796

^a Includes Arizona, Arkansas, Illinois, Indiana, Kentucky, Maryland, Missouri, Nebraska, New York, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Virginia and West Virginia. The 1992 and 1993 monthly values for these States are estimated.

^b The 1992 monthly and annual values for Alabama include Federal Offshore production.

E = Estimated Data.

R = Revised Data.

RE = Revised Estimated Data.

Notes: Data for 1987 through 1991 are final. All other data are preliminary unless otherwise indicated. Totals may not equal sum of components because of independent rounding. See Appendix A, Explanatory Notes 1 and 3 for discussion of computation procedures and revision policy.

Sources: •EIA *Natural Gas Annual 1991*, 1987 through 1991. •IOGCC, MMS reports, and EIA computations, January 1992 through current month.

Table 8. Revenues, Expenses, and Income of Major Interstate Natural Gas Pipeline Companies, 1987-1993
(Million Dollars)

Year and Month	Total Sales Volume ^a (Bcf)	Gas Operating Revenues	Gas Operating Expenses				Total Operating Income	Total Income Before Interest Charges and Extraordinary Expenses	Net Income ^a
			Operation and Maintenance	Depreciation, Depletion, and Amortization	Taxes ^b	Total Gas Operating Expenses			
1987 Total	6,758	27,469	21,871	1,520	552	25,151	2,333	3,493	1,414
1988 Total	6,414	26,837	22,640	1,579	582	24,940	1,803	3,350	1,368
1989 Total	5,652	26,703	21,522	1,451	596	24,168	2,575	4,595	2,311
1990 Total	4,877	24,275	18,980	1,483	648	21,686	2,590	4,227	2,319
1991									
January	686	3,126	2,395	116	61	2,729	397	448	303
February	415	2,095	1,541	116	58	1,809	286	355	222
March	384	1,960	1,445	117	53	1,699	261	273	151
April	289	1,548	1,224	118	53	1,412	137	200	68
May	227	1,386	1,045	118	56	1,229	157	215	74
June	184	1,263	1,870	118	52	1,759	-496	-422	-540
July	212	1,295	989	117	53	1,133	162	194	41
August	251	1,396	1,068	117	55	1,235	162	128	-11
September	229	1,387	1,268	118	46	1,364	23	-398	-545
October	304	1,613	1,232	37	49	1,361	252	276	120
November	439	2,127	1,615	116	50	1,863	264	312	166
December	433	2,452	2,304	101	42	2,565	-113	277	130
Total	4,052	21,649	17,996	1,311	627	20,158	1,492	1,857	179
1992									
January	413	2,240	1,647	117	64	1,954	286	382	241
February	347	1,800	1,281	42	59	1,514	285	378	253
March	348	1,832	1,314	118	56	1,586	246	380	246
April	276	1,526	1,112	119	56	1,339	187	279	135
May	269	1,476	1,084	123	58	1,311	165	368	232
June	224	1,438	1,056	113	52	1,252	187	311	171
July	R 239	R 1,442	R 1,040	R 125	R 56	R 1,259	R 183	R 301	147
August	264	1,564	1,157	131	54	1,412	152	268	124
September	254	1,957	1,552	-24	49	1,628	329	378	252
October	268	1,739	1,363	68	55	1,533	206	314	168
November	364	2,139	1,584	126	54	1,895	244	359	220
December	435	2,430	1,892	76	51	2,252	178	341	206
Total	R 3,700	R 21,583	R 16,083	R 1,133	R 665	R 18,935	R 2,648	R 4,058	R 2,395
1993									
January	366	2,070	1,434	121	57	1,703	367	398	267
February	395	2,001	1,395	120	59	1,696	305	393	272
March	401	2,013	1,396	118	55	1,705	308	404	268
April	278	1,617	1,161	216	55	1,516	101	295	168
May	185	1,420	1,062	105	54	1,251	168	108	-39
June	219	1,487	1,062	123	52	1,310	177	275	144
July	225	1,451	980	116	51	1,212	239	319	196

^a Includes sales for resale and sales to ultimate consumers.

^b Excludes income taxes.

^c Total Income before Interest Charges and Extraordinary Expenses and Investment Tax Credits minus Income Taxes, Interest Charges, and Extraordinary Items.

R = Revised Data.

Notes: (1) Data up to the current month of the prior year are final. All other data are preliminary unless otherwise indicated. See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding. This table shows selected items only and therefore does not balance mathematically.

(2) As of January 1993, Arkla, Inc. does not meet the filing requirements for the FERC-11. Arkla Energy Resources Company (A.E.R. Co.) is a subsidiary of Arkla, Inc.. Data submitted on the FERC-11 for A.E.R. Co. will indicate less sales volumes and revenues than previous years reported by Arkla, Inc..

Source: Form FERC-11.

Table 9. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies, 1987-1993
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	To Industrial Users		To Other Ultimate Consumers		Total Sales to Ultimate Consumers		Sales For Resale		Total Sales of Natural Gas		Number of Companies
	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	
1987 Total	442,041	3 07	301,567	5 06	743,608	3 91	5,213,629	3 37	5,957,237	3 44	47
1988 Total	294,821	2 65	440,683	4 99	735,504	4 05	4,866,193	3 47	5,601,697	3 55	46
1989 Total	392,843	2 56	465,592	5 02	858,435	3 91	4,324,349	3 51	5,182,784	3 58	50
1990 Total	229,662	2 80	374,166	5 18	603,828	4 28	3,849,486	3 40	4,453,314	3 52	51
1991											
January	17,703	2 95	68,692	4 71	86,395	4 35	549,376	3 54	635,771	3 65	50
February	11,731	2 62	43,492	4 51	55,223	4 11	325,749	3 65	380,972	3 72	50
March	9,786	2 73	36,250	4 56	46,036	4 17	328,651	3 30	374,687	3 40	50
April	9,047	2 70	21,575	4 82	30,622	4 19	246,762	3 31	277,384	3 41	50
May	11,951	2 38	16,004	5 20	27,955	4 00	188,041	3 58	215,996	3 63	50
June	12,894	2 10	13,048	5 42	25,942	3 77	144,958	3 93	170,900	3 91	50
July	12,018	2 05	18,288	4 83	30,306	3 72	169,807	3 61	200,113	3 62	50
August	15,449	1 94	16,466	4 93	31,915	3 48	205,892	3 33	237,807	3 35	50
September	12,293	2 32	14,785	5 18	27,078	3 88	185,265	3 37	212,363	3 44	50
October	15,654	2 38	20,363	5 11	36,017	3 92	253,721	3 30	289,738	3 38	49
November	14,778	2 70	44,862	4 63	59,640	4 15	363,264	3 27	422,904	3 39	49
December	13,908	2 83	50,253	4 72	64,161	4 31	348,207	4 00	412,368	4 05	49
Total	157,212	2 48	364,078	4 77	521,290	4 08	3,309,713	3 51	3,831,003	3 59	50
1992											
January	12,270	2 58	59,297	4 53	71,567	4 19	333,807	3 58	405,374	3 68	48
February	10,489	2 09	42,699	4 42	53,188	3 97	287,148	3 32	340,336	3 42	49
March	11,460	2 14	35,898	4 42	47,358	3 87	290,133	3 14	337,491	3 24	49
April	14,176	2 15	26,940	4 79	41,116	3 88	221,838	3 32	262,954	3 40	50
May	14,610	1 82	16,500	5 12	31,110	3 57	224,480	3 27	255,590	3 31	50
June	9,991	2 79	13,422	5 45	23,413	4 31	179,954	3 58	203,367	3 66	50
July	14,592	2 04	14,071	5 25	28,663	3 62	188,636	3 45	217,299	3 47	50
August	16,163	2 29	13,924	5 28	30,087	3 67	213,459	3 12	243,546	3 19	50
September	12,827	2 56	13,914	5 36	26,741	4 01	207,782	3 30	234,523	3 38	50
October	12,632	2 88	20,116	5 53	32,748	4 50	222,764	3 46	255,532	3 59	50
November	13,234	2 99	40,209	4 91	53,443	4 43	294,374	3 32	347,817	3 49	50
December	12,300	2 89	55,691	5 00	67,991	4 62	353,866	3 35	421,857	3 56	50
Total	154,744	2 42	352,681	4 85	507,425	4 11	3,018,261	3 35	3,525,686	3 46	50
1993											
January	4,623	2 62	6,747	4 44	11,370	3 70	344,821	3 38	356,191	3 39	51
February	6,494	2 24	5,221	4 47	11,715	3 23	369,081	2 98	380,796	2 99	51
March	5,762	2 42	5,078	4 48	10,840	3 38	369,600	2 96	380,440	2 98	51
April	7,415	2 30	3,626	4 54	11,041	3 04	260,533	3 06	271,574	3 06	51
May	7,609	2 43	2,026	4 92	9,635	2 95	168,359	3 19	177,994	3 17	51
June	6,361	2 38	1,788	4 77	8,149	2 90	199,331	2 82	207,480	2 82	50
July	9,047	2 35	2,212	4 68	11,259	2 81	204,926	2 88	216,185	2 87	50

* All prices are weighted averages

^ Revised Data

Notes: (1) The summaries presented in this table are exclusive of transactions between major pipeline companies in the computation of total pipeline activities to eliminate double-counting. Data up to the current month of the prior year are final. All other data are preliminary unless otherwise indicated. See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

(2) As of January 1993, Arkla, Inc. does not meet the filing requirements for the FERC-11. Arkla Energy Resources Company (A.E.R. Co.) is a subsidiary of Arkla, Inc. Data submitted on the FERC-11 for A.E.R. Co. will indicate less sales volumes and revenues than previous years reported by Arkla, Inc.

Source: Form FERC-11.

Table 10. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies, by Company, July 1993
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Pipeline Company	To Industrial Users		To Other Ultimate Consumers		Total Sales To Ultimate Consumers		Sales For Resale		Total Sales Of Natural Gas	
	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*
Algonquin Gas	0	--	0	--	0	--	0	--	0	--
ANR	0	--	0	--	0	--	16,805	2 91	16,805	2 91
Arkla Energy Resources Co	2	3 00	0	--	2	3 00	466	6 10	470	6 09
Bear Creek Storage	0	--	0	--	0	--	0	--	0	--
Colorado Interstate	69	2 38	0	--	69	2 38	4,573	2 17	4,642	2 17
Columbia Gas Transm	0	--	0	--	0	--	24,356	4 37	24,356	4 37
Columbia Gulf	0	--	2	3 50	2	3 50	0	--	2	3 50
Consolidated Gas	0	--	0	--	0	--	3,211	5 46	3,211	5 46
East Tennessee	359	3 47	0	--	359	3 47	1,518	2 57	1,877	2 74
El Paso	1,839	1 88	0	--	1,839	1 88	8,659	1 78	10,498	1 80
Squitane	214	2 03	0	--	214	2 03	385	1 91	599	1 96
Florida Gas	547	4 18	0	--	547	4 18	702	4 91	1,249	4 59
Great Lakes Gas	0	--	0	--	0	--	0	--	0	--
High Island Offshore	0	--	0	--	0	--	0	--	0	--
Iroquois Gas Transm Sys	0	--	0	--	0	--	0	--	0	--
K N Energy Inc	42	2 79	2,184	4 67	2,226	4 64	492	3 60	2,718	4 49
Kern River Gas Trans	0	--	0	--	0	--	0	--	0	--
Michigan Gas Storage	0	--	0	--	0	--	83	2 53	83	2 53
Midwestern	0	--	0	--	0	--	5,525	2 32	5,525	2 32
Mississippi River	818	2 49	0	--	818	2 49	1,679	5 90	2,497	4 78
Mojave Pipeline Co	0	--	0	--	0	--	0	--	0	--
Mountain Fuel Res	0	--	0	--	0	--	0	--	0	--
National Fuel	0	--	0	--	0	--	1,300	4 31	1,300	4 31
Natural Gas Pipeline	2	1 00	0	--	2	1 00	27,369	3 11	27,371	3 11
Northern Border	0	--	0	--	0	--	0	--	0	--
Northern Natural	0	--	2	1 50	2	1 50	12,902	2 52	12,904	2 52
Northwest Alaskan	0	--	0	--	0	--	30,092	1 38	30,092	1 38
Northwest Pipeline	0	--	0	--	0	--	0	--	0	--
Overthrust Pipeline	0	--	0	--	0	--	0	--	0	--
Pacific Gas Transm	0	--	0	--	0	--	26,927	2 20	26,927	2 20
Pacific Interstate	0	--	0	--	0	--	6,446	2 71	6,446	2 71
Panhandle Eastern	0	--	0	--	0	--	0	--	0	--
Sabine Pipeline Co	0	--	0	--	0	--	0	--	0	--
Sea Robin Pipeline	0	--	0	--	0	--	0	--	0	--
Southern Natural	3	4 00	0	--	3	4 00	1,399	3 01	1,402	3 02
Stingray Pipeline	0	--	0	--	0	--	0	--	0	--
Tennessee, Inc	1,932	1 73	0	--	1,932	1 73	4,874	5 80	6,808	4 84
Texas Eastern	0	--	0	--	0	--	1,631	2 08	1,631	2 08
Texas Gas Transm	0	--	0	--	0	--	2,040	6 71	2,040	6 71
Trailblazer Pipeline	0	--	0	--	0	--	0	--	0	--
Transcontinental	0	--	0	--	0	--	19,696	3 01	19,696	3 01
Transwestern Pipeline	103	1 84	17	2 35	120	1 92	0	--	120	1 92
Trunkline Gas Co	2	2 50	7	2 57	9	2 56	7,068	3 04	7,077	3 04
U-T Offshore	0	--	0	--	0	--	0	--	0	--
United Gas Pipeline	3,071	2 48	0	--	3,071	2 51	1,805	4 24	4,876	3 16
Valero Interstate Transm	0	--	0	--	0	--	1,226	2 61	1,226	2 61
Viking Gas Company	0	--	0	--	0	--	0	--	0	--
Williams Natural	44	3 52	0	--	44	3 52	271	4 11	315	4 03
Wilmington Basin	0	--	0	--	0	--	274	3 47	274	3 47
Wyoming Interstate	0	--	0	--	0	--	0	--	0	--
Total/Average Price*	9,047	2 35	2,212	4 66	11,259	2 61	213,776	2 69	225,035	2 69
Sales to Other Major Companies	--	--	--	--	--	--	8,650	3 26	8,650	3 26
Sales Excluding Sales to Major Companies	--	--	--	--	--	--	204,926	2 88	216,185	2 87

* All prices are computed weighted averages based on dollar and volume amounts reported, which may include or reflect out-of-period dollar or volume adjustments, restatements or revisions, or account reclassifications or provisions for pending regulatory adjustments. See Appendix A, Explanatory Note 9 for discussion of apparent anomalies.

-- Not Applicable.

Notes: (1) Two lines have been added to this table to explicitly differentiate transactions between major and nonmajor pipeline companies. Totals may not equal sum of components due to independent rounding and provisions for pending regulatory adjustments.

(2) As of January 1993, Arkla, Inc. does not meet the filing requirements for the FERC-11. Arkla Energy Resources Company (A.E.R. Co.) is a subsidiary of Arkla, Inc. Data submitted on the FERC-11 for A.E.R. Co. will indicate less sales volumes and revenues than previous years reported by Arkla, Inc.

Source: Form FERC-11.

**Table 11. Natural and Other Gases Produced and Purchased by
Major Interstate Natural Gas Pipeline Companies, 1987-1993**
(Million Cubic Feet)

Year and Month	Transported Gas ^a	Natural Gas Production	Manufactured Gas, Liquefied Natural Gas, Gasified Coal, and Synthetic Gas Production	Purchased Natural Gas				
				From Producers	Intracompany Transfers	Imports	From Others	Total
1987 Total	13,479,989	152,039	22,805	4,848,577	124,572	759,345	400,134	6,132,628
1988 Total	15,950,507	139,521	23,950	4,518,120	65,879	952,353	374,953	5,920,355
1989 Total	15,595,395	105,035	24,509	3,532,555	74,055	903,455	411,997	4,922,131
1990 Total	21,551,372	93,355	24,153	3,501,590	72,955	955,555	355,273	4,995,505
1991								
January	2,095,555	5,055	1,555	372,555	7,194	79,075	40,955	500,112
February	1,539,500	5,242	2,157	252,740	5,559	55,257	21,915	355,554
March	1,555,052	5,537	2,120	222,054	5,355	75,343	19,250	325,075
April	1,752,255	5,503	1,114	193,504	4,453	54,319	19,503	252,379
May	1,723,555	5,534	2,202	174,735	4,505	51,255	14,557	255,501
June	1,579,145	5,553	2,121	150,553	4,294	52,525	22,143	239,515
July	1,510,413	5,571	2,255	155,125	5,155	49,545	15,059	224,955
August	1,735,157	5,213	2,030	149,415	5,253	73,437	22,459	250,574
September	1,551,505	5,555	1,550	155,500	5,555	50,109	14,205	245,703
October	1,555,527	5,473	2,152	210,115	5,329	71,559	15,975	305,119
November	2,103,022	5,375	1,705	251,011	11,225	73,042	33,149	375,425
December	2,135,449	5,755	1,559	255,519	7,732	74,545	31,455	412,554
Total	22,031,321	73,055	23,375	2,531,059	72,115	505,555	274,155	3,753,913
1992								
January	2,309,475	5,545	1,555	251,352	5,000	54,555	35,725	352,555
February	2,159,150	5,075	2,070	205,552	7,542	53,555	24,555	302,157
March	2,153,555	5,155	2,303	145,151	5,543	55,723	19,504	245,551
April	2,107,554	5,755	2,205	154,551	5,513	55,549	21,555	252,511
May	1,575,257	5,559	2,304	170,557	5,535	57,519	19,559	254,100
June	1,512,527	5,243	2,075	155,543	4,503	55,752	17,559	235,227
July	^a 1,525,300	5,575	1,559	155,145	5,105	55,557	23,342	250,150
August	1,555,725	5,145	2,045	155,755	5,429	54,529	15,715	275,739
September	1,507,555	5,249	2,005	175,557	5,255	74,559	^b 5,559	252,553
October	1,555,750	5,352	2,209	152,505	5,350	71,577	20,535	250,401
November	2,144,325	5,503	2,155	215,159	5,935	71,100	24,557	324,154
December	2,154,125	5,504	2,533	247,151	10,494	75,705	45,325	352,555
Total	^a 24,555,025	75,417	25,553	2,253,492	52,751	525,134	252,557	3,445,074
1993								
January	2,334,505	5,430	2,335	203,273	5,475	75,501	7,512	293,451
February	2,153,229	5,047	2,102	150,515	5,235	70,472	9,354	245,720
March	2,214,550	5,310	2,450	171,111	5,553	71,015	11,055	255,757
April	1,575,555	5,532	2,233	154,551	4,755	75,559	1,134	245,100
May	1,534,559	5,575	554	152,510	5,037	53,140	5,155	235,245
June	1,549,219	5,031	2,215	154,751	4,175	74,253	5,315	245,524
July	1,555,552	5,343	2,140	172,145	4,500	75,334	2,357	255,339

^a Gas transported for other companies through the production, transmission, or distribution lines or compressor stations of the reporting pipelines

^b Includes out-of-period adjustments to correct data in prior month

^a - Revised Data

^{NA} - Not Available

Notes: (1) Previously published manufactured gas is now summarized with liquefied natural gas, gasified coal, and synthetic gas production. Also, the summaries presented in this table are exclusive of transactions between major pipeline companies in the computation of total pipeline activities to eliminate double counting. See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

(2) As of January 1993, Arkla, Inc. does not meet the filing requirements for the FERC-11. Arkla Energy Resources Company (AER Co.) is a subsidiary of Arkla, Inc. Data submitted on the FERC-11 for AER Co. will indicate less sales volumes and revenues than previous years reported by Arkla, Inc.

Source: Form FERC-11

**Table 12. Natural and Other Gases Produced and Purchased
by Major Interstate Natural Gas Pipeline Companies, July 1993
(Million Cubic Feet)**

Pipeline Company	Transported Gas	Natural Gas Production	Manufactured Gas, Liquefied Natural Gas, Gasified Coal and Synthetic Gas Production	Purchased Natural Gas				
				From Producers	Intracompany Transfers	Imports	From Others	Total
Algonquin Gas	11,176	0	0	0	0	0	0	0
ANR	82,455	0	1,266	12,401	0	8,672	0	21,073
Arkla Energy Resources Co	47,782	0	0	1,580	0	0	928	2,508
Bear Creek Storage	0	0	0	0	0	0	0	0
Colorado Interstate	42,424	3,939	0	4,969	3,939	0	0	8,908
Columbia Gas Transm	62,171	0	0	17,775	0	0	* -226	17,549
Columbia Gulf	98,484	0	0	0	0	0	1,275	1,275
Consolidated Gas	34,187	1,092	0	4,566	1	0	7	4,594
East Tennessee	5,007	0	0	3,429	0	0	0	3,429
El Paso	108,523	0	0	6,662	0	0	772	7,434
Equitrans	4,178	0	0	2,084	0	0	0	2,084
Florida Gas	30,404	0	0	1,834	0	0	466	2,300
Great Lakes Gas	69,822	0	0	0	0	0	0	0
High Island Offshore	28,076	0	0	0	0	0	0	0
Iroquois Gas Transm Sys	20,755	0	0	0	0	0	0	0
K N Energy Inc	9,573	0	0	5,263	0	0	1,245	6,508
Kern River Gas Trans	22,322	0	0	0	0	0	0	0
Michigan Gas Storage	26,332	0	0	0	0	0	83	83
Midwestern	5,464	0	0	1,127	0	0	1,249	2,376
Mississippi River	17,483	0	0	7,676	0	0	0	7,676
Mojave Pipeline Co	8,968	0	0	0	0	0	0	0
Mountain Fuel Res	19,421	0	0	1,023	0	0	440	1,463
National Fuel	7,759	307	0	13,821	307	0	0	14,128
Natural Gas Pipeline	130,507	0	874	12,427	0	7,716	5	20,148
Northern Border	55,244	0	0	0	0	0	0	0
Northern Natural	140,526	0	0	4,364	0	0	12,660	17,024
Northwest Alaskan	0	0	0	0	0	30,092	0	30,092
Northwest Pipeline	43,783	0	0	17	0	533	0	550
Overthrust Pipeline	1,139	0	0	0	0	0	0	0
Pacific Gas Transm	11,192	0	0	0	0	26,713	0	26,713
Pacific Interstate	0	0	0	0	0	0	6,640	6,640
Panhandle Eastern	48,867	0	0	176	0	0	0	176
Sabine Pipeline Co	17,297	0	0	0	0	0	0	0
Sea Robin Pipeline	24,289	0	0	0	0	0	0	0
Southern Natural	34,406	0	0	8,750	0	0	1	8,751
Stingray Pipeline	19,012	0	0	0	0	0	0	0
Tenneco, Inc	123,551	0	0	1,572	0	2,600	* -2,041	2,131
Texas Eastern	82,246	5	0	3,413	0	8	0	3,421
Texas Gas Transm	54,772	0	0	6,873	0	0	0	6,873
Trailblazer Pipeline	12,597	0	0	0	0	0	0	0
Transcontinental	175,853	0	0	28,862	0	0	886	29,748
Transwestern Pipeline	60,752	0	0	163	0	0	0	163
Trunkline Gas Co	39,978	0	0	7,785	0	0	0	7,785
U-T Offshore	12,483	0	0	0	0	0	0	0
United Gas Pipeline	51,904	0	0	11,965	0	0	0	11,965
Valero Interstate Transm	4,996	0	0	0	0	0	1,226	1,226
Viking Gas Company	10,919	0	0	0	0	0	0	0
Williams Natural	24,429	0	0	952	0	0	95	1,047
Williston Basin	3,025	0	0	599	253	0	0	852
Wyoming Interstate	12,100	0	0	0	0	0	0	0
Total	1,958,562	5,343	2,140	172,148	4,500	76,334	25,711	278,693
Purchases from Other Major Companies	--	--	--	0	0	0	23,354	23,354
Purchases Excluding Purchases from Other Major Companies	--	--	--	172,148	4,500	76,334	2,357	255,339

* Includes out-of-period adjustments to correct data in prior month.

-- Not Applicable

Notes: (1) Previously published manufactured gas is now summarized with liquefied natural gas, gasified coal, and synthetic gas production. Two lines have been added to this table that explicitly differentiate transactions between major and nonmajor pipeline companies. See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

(2) As of January 1993, Arkla, Inc. does not meet the filing requirements for the FERC-11. Arkla Energy Resources Company (A.E.R. Co.) is a subsidiary of Arkla, Inc. Data submitted on the FERC-11 for A.E.R. Co. will indicate less sales volumes and revenues than previous years reported by Arkla, Inc.

Source: Form FERC-11.

**Table 13. Underground Natural Gas Storage - All Operators,
1987-1993**
(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	Withdrawals	Net ^c
1987 Total^a	3,792	2,756	6,548	7	0.3	1,887	1,881	6
1988 Total^a	3,800	2,850	6,650	94	3.4	2,174	2,244	-69
1989 Total^a	3,812	2,513	6,325	-337	-11.8	2,491	2,804	-313
1990 Total^a	3,868	3,068	6,936	555	22.1	2,433	1,934	499
1991								
January	3,811	2,362	6,273	92	4.1	115	659	-545
February	3,908	2,063	5,972	59	2.9	112	397	-285
March	3,895	1,912	5,806	37	2.0	129	291	-162
April	3,898	2,037	5,935	91	4.7	228	104	124
May	3,931	2,273	6,204	93	4.3	319	58	261
June	3,939	2,553	6,492	68	2.7	314	42	272
July	3,942	2,771	6,713	-20	-7	289	75	214
August	3,949	2,978	6,927	-93	-3.0	282	82	200
September	3,950	3,201	7,151	-120	-3.6	294	78	216
October	3,961	3,369	7,330	-98	-2.8	251	103	148
November	3,952	3,148	7,100	-324	-9.3	150	352	-202
December	3,954	2,824	6,778	-244	-8.0	125	448	-323
Total	--	--	--	--	--	2,608	2,689	-80
1992								
January	4,061	2,216	6,277	-146	-6.2	68	591	-524
February	4,057	1,837	5,894	-226	-10.9	52	441	-389
March	4,046	1,545	5,591	-367	-19.2	81	381	-301
April	4,038	1,573	5,611	-463	-22.8	167	150	18
May	4,044	1,848	5,892	-425	-18.7	330	53	277
June	4,050	2,153	6,203	-400	-15.7	366	43	323
July	4,064	2,460	6,524	-311	-11.2	357	50	307
August	4,062	2,761	6,823	-217	-7.3	364	54	309
September	4,061	3,044	7,105	-157	-4.9	346	48	298
October	4,065	3,223	7,288	-146	-4.3	264	78	186
November	4,061	3,054	7,115	-94	-3.0	95	276	-181
December	4,044	2,597	6,641	-227	-8.0	65	557	-491
Total	--	--	--	--	--	2,555	2,724	-168
1993								
January	4,040	2,045	6,086	-170	-7.7	50	605	-556
February	4,014	1,519	5,532	-319	-17.3	27	578	-552
March	3,993	1,237	5,230	-308	-19.9	78	381	-304
April	3,999	1,335	5,334	-238	-15.1	219	111	108
May	4,017	1,738	5,755	-111	-8.0	447	25	423
June	4,029	2,100	6,128	-53	-2.5	416	43	372
July	4,030	2,465	6,495	5	2	398	48	350
August	4,254	2,566	6,820	-195	-7.1	419	98	321

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1987, 1988, and 1989 - 8,124; 1990 - 8,125; 1991 - 7,993; and 1992 - 7,932.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

^R = Revised Data.

-- = Not Applicable.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise noted. See Appendix A, Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources: Form EIA-191, Form FERC-8, and Form EIA-176.

Figure 5. Underground Natural Gas Storage In the United States, 1989-1993

Source: Form EIA-191, Form FERC-8, and Form EIA-176.

Table 14. Underground Natural Gas Storage - Interstate Operators of Storage Fields, 1987-1993
(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	Withdrawals	Net ^c
1987 Total^a	2,461	2,024	4,485	14	0.7	1,365	1,348	17
1988 Total^a	2,469	2,092	4,561	68	3.3	1,587	1,532	55
1989 Total^a	2,478	1,764	4,242	-328	-15.7	1,788	2,072	-285
1990 Total^a	2,496	2,203	4,699	439	24.9	1,705	1,284	421
1991								
January	2,542	1,718	4,261	114	7.1	105	481	-376
February	2,546	1,502	4,048	40	2.7	93	292	-199
March	2,535	1,418	3,952	26	1.9	109	200	-91
April	2,537	1,500	4,037	78	5.3	165	82	83
May	2,569	1,647	4,216	78	5.0	218	47	171
June	2,575	1,834	4,409	51	2.9	213	35	178
July	2,576	1,970	4,546	-39	-1.9	192	62	130
August	2,577	2,105	4,682	-109	-4.9	186	85	121
September	2,571	2,265	4,836	-122	-5.1	211	84	147
October	2,571	2,382	4,953	-86	-3.5	181	83	98
November	2,572	2,210	4,782	-253	-10.3	117	274	-157
December	2,571	1,985	4,556	-218	-9.9	112	328	-216
Total	--	--	--	--	--	1,902	2,013	-111
1992								
January	2,675	1,554	4,230	-164	-9.5	R 80	R 410	R -350
February	2,671	1,289	3,960	-213	-14.2	R 37	R 317	R -280
March	2,661	1,080	3,741	-338	-23.8	R 65	R 284	R -219
April	2,653	1,104	3,757	-396	-26.4	R 121	R 108	R 12
May	2,659	1,285	3,945	-362	-22.0	R 237	R 42	R 195
June	2,665	1,486	4,151	-348	-19.0	R 253	R 32	R 221
July	2,679	1,695	4,375	R -274	-13.9	R 254	R 34	R 220
August	2,676	1,908	4,584	-197	R -9.4	R 260	R 36	R 224
September	2,675	2,111	4,785	R -155	-6.8	R 240	R 27	R 213
October	2,677	2,231	4,908	-151	-6.3	R 184	R 56	R 128
November	2,673	2,110	4,784	-100	-4.5	R 74	R 209	R -135
December	2,652	1,819	4,471	-166	-8.4	R 54	R 386	R -332
Total	--	--	--	--	--	R 1,838	R 1,940	R -102
1993								
January	2,649	1,443	4,091	-112	-7.2	42	421	-379
February	2,632	1,050	3,683	-239	-18.5	R 17	R 425	-409
March	2,615	829	3,444	-251	-23.3	R 46	R 282	-235
April	2,621	897	3,518	-207	-18.7	146	78	68
May	2,637	1,191	3,828	-94	-7.3	328	16	312
June	2,648	1,462	4,110	-24	-1.6	307	26	281
July	2,650	R 1,734	R 4,384	R 38	R 2.3	R 286	28	R 257
August	2,872	1,756	4,628	-152	-8.0	318	77	241

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1987, 1988, 1989, and 1990 - 5,622; 1991 - 5,512; and 1992 - 5,524.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

R = Revised Data.

-- = Not Applicable.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise noted. See Appendix A, Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources: Form EIA-191, Form FERC-8, and EIA-176.

Table 15. Underground Natural Gas Storage - Intrastate Operators and Independent Producers, 1987-1993
(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^a	Volume	Percent	Injections	Withdrawals	Net ^c
1987 Total^a	1,331	732	2,063	-7	0.1	522	533	-11
1988 Total^a	1,331	758	2,089	26	3.8	587	711	-124
1989 Total^a	1,335	749	2,083	-9	-1.2	705	732	-26
1990 Total^a	1,372	864	2,236	115	15.4	728	650	78
1991								
January	1,369	644	2,012	-21	-3.2	10	178	-168
February	1,362	562	1,924	21	3.9	19	105	-86
March	1,360	494	1,854	13	2.7	20	91	-71
April	1,361	537	1,898	16	3.1	63	22	41
May	1,362	626	1,988	16	2.6	101	11	90
June	1,364	719	2,083	18	2.6	101	7	94
July	1,366	802	2,168	21	2.7	97	13	84
August	1,372	873	2,245	17	2.0	96	17	79
September	1,379	936	2,315	3	.3	83	14	69
October	1,390	987	2,377	-11	-1.1	70	20	50
November	1,380	937	2,317	-70	-7.0	33	78	-45
December	1,383	839	2,221	-25	-2.9	13	120	-107
Total	--	--	--	--	--	706	675	30
1992								
January	R 1,386	661	R 2,047	R 18	2.7	8	R 182	R -174
February	R 1,386	548	R 1,934	R -13	-2.4	15	R 124	R -109
March	R 1,385	465	R 1,850	-29	-5.9	16	R 98	R -82
April	R 1,385	470	R 1,854	-67	R -12.5	47	R 42	R 5
May	R 1,385	563	R 1,948	-63	-10.1	R 93	11	R 82
June	R 1,385	666	R 2,051	R -52	-7.3	R 113	R 11	R 102
July	R 1,385	764	R 2,150	R -37	R -4.6	103	16	87
August	R 1,386	853	R 2,239	-20	-2.3	R 103	R 18	R 85
September	R 1,386	933	R 2,320	-3	-3	R 106	R 21	R 85
October	R 1,388	992	R 2,380	R 6	R 6	R 80	R 22	R 57
November	R 1,388	943	R 2,331	6	R 6	R 21	R 67	R -46
December	R 1,392	R 778	R 2,170	R -61	-7.3	11	R 171	R -160
Total	--	--	--	--	--	R 717	R 784	R -67
1993								
January	R 1,392	603	R 1,994	-59	-8.9	7	184	-177
February	R 1,381	468	R 1,850	-80	-14.6	10	153	-143
March	R 1,377	408	R 1,786	-57	-12.2	31	100	-69
April	R 1,378	R 439	R 1,816	-31	-6.6	72	33	39
May	R 1,381	547	R 1,927	-16	-2.9	120	9	110
June	R 1,381	R 638	R 2,018	-29	-4.3	108	17	91
July	R 1,380	731	R 2,111	R -33	R -4.3	112	19	93
August	1,382	810	2,192	-43	-5.0	101	21	81

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1987, 1988, and 1989 - 2,502; 1990 - 2,503; 1991 - 2,481; and 1992 - 2,407.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

R = Revised Data.

-- = Not Applicable.

Notes: Data for 1987 through 1992 are final. All other data are preliminary unless otherwise noted. See Appendix A, Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources: Form EIA-191, Form FERC-8, and EIA-176.

Table 16. Net Withdrawals from Underground Storage, by State, 1991-1993
(Volume in Million Cubic Feet)

States	August 1993	July 1993	June 1993	May 1993	April 1993	March 1993	February 1993
Arkansas	0	10	-14	824	121	478	872
California	-10,526	-23,040	-13,993	-28,521	-15,646	-6,478	17,346
Colorado	-4,540	R -3,880	-4,646	-2,713	3,405	2,509	5,116
Illinois	-33,793	-30,687	-32,862	-33,685	-2,881	25,052	49,451
Indiana	-4,509	-4,420	-2,089	-1,257	-400	2,558	5,026
Iowa	-10,344	-10,896	-8,100	-6,824	-5,491	2,650	10,799
Kansas	-8,785	R -5,456	-11,747	-24,818	-3,308	4,688	15,609
Kentucky	-4,815	-7,557	-7,759	-6,426	726	9,515	10,958
Louisiana	-27,651	R -27,479	-33,949	-28,839	592	23,512	43,797
Maryland	-1,718	-1,126	-1,175	-2,217	456	1,859	4,290
Michigan	-82,034	R -84,803	-85,218	-75,304	-20,444	65,891	103,072
Minnesota	-128	-409	-344	-318	49	418	418
Mississippi	-3,438	-5,007	-4,556	-7,012	-2,489	6,098	8,450
Missouri	-317	-102	-451	-1,049	-1,551	1,085	1,811
Montana	-302	-1,169	685	1,157	1,710	2,759	4,420
Nebraska	-1,857	-2,561	-4,278	-2,958	-975	1,010	2,009
New Mexico	2,318	R -269	-1,221	-2,705	2,927	792	4,164
New York	-8,269	-10,095	-10,768	-10,921	-3,964	10,303	16,122
Ohio	-26,949	R -29,068	R -31,671	R -29,544	R -3,384	R 38,459	R 45,111
Oklahoma	-13,432	-14,917	-17,825	-20,586	-12,860	8,856	21,531
Oregon	-1,042	-1,181	-1,298	-1,645	426	728	1,397
Pennsylvania	-40,777	-46,928	-53,535	-57,981	-18,784	56,156	100,956
Texas	-11,964	R -9,730	-8,376	-27,775	-19,952	12,328	24,856
Utah	-5,153	-5,170	-6,636	-6,685	1,016	3,663	5,057
Washington	-620	-2,148	-866	-4,528	-1,002	-1,231	3,347
West Virginia	-18,781	R -20,172	-27,572	-39,358	-5,496	29,813	43,205
Wyoming	-1,625	-2,051	-2,069	-983	-500	371	2,388
Total	-321,050	R -350,311	R -372,334	R -422,670	R -107,702	R 303,841	R 551,578

See footnotes at end of table.

Table 16. Net Withdrawals from Underground Storage, by State, 1991-1993
(Volume in Million Cubic Feet)—Continued

States	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992
Arkansas	633	514	624	366	196	-434	-664
California	37,972	R 28,120	R 54,629	R 9,135	R -8,186	R -17,264	R -10,887
Colorado	3,207	R 4,860	R 2,582	R 3,085	R -2,169	R -5,922	R -6,286
Illinois	59,730	R 8,608	R 42,048	R 14,263	R -26,155	R -32,462	R -35,313
Indiana	5,572	R 840	R 3,610	R 2,364	R -2,936	R -5,203	R -4,107
Iowa	18,971	R 4,259	R 18,942	R 7,997	R -8,683	R -10,088	R -10,162
Kansas	18,609	R 18,486	R 12,181	R 9,027	R -3,672	R -10,142	R -11,527
Kentucky	5,114	R -6,573	R 2,982	R 1,514	R -10,704	R -4,201	R -1,610
Louisiana	47,855	R 13,958	R 31,771	R 5,495	R -18,911	R -16,545	R -13,386
Maryland	3,272	R -333	R 2,249	R -544	R -1,333	R -2,204	R -2,546
Michigan	97,623	R 2,251	R 84,911	R 47,094	R -28,345	R -67,401	R -67,079
Minnesota	396	R -43	R 193	R 7	4	-126	R -184
Mississippi	5,963	R -1,732	R 6,940	R 998	R -267	R -6,250	R -297
Missouri	1,091	R 15	7	8	-191	-208	-218
Montana	5,100	12,602	5,601	3,347	1,357	280	-766
Nebraska	3,344	R -407	R 3,451	R 2,461	R 316	R -1,167	R -1,187
New Mexico	2,613	R 2,458	R -417	R 1,036	R -2,559	R -1,172	R -1,949
New York	13,106	R -1,572	R 10,534	R 3,023	R -3,455	R -6,488	R -9,745
Ohio	R 38,493	R 15,672	R 31,661	R 5,352	R -11,598	R -15,846	R -23,106
Oklahoma	23,966	R 10,058	R 31,363	R 16,578	R -7,728	R -12,709	R -5,444
Oregon	1,918	872	579	1,100	-173	-453	-1,010
Pennsylvania	71,301	R -5,873	R 57,665	R -2,844	R -28,736	R -47,631	R -48,824
Texas	45,359	R 43,441	R 55,358	R 35,326	R -9,677	R -15,735	R -28,309
Utah	5,873	R -4,482	R 6,756	R 5,453	R -1,284	R -3,128	R -4,680
Washington	3,439	5,667	3,797	947	760	-1,196	-1,458
West Virginia	31,863	R 8,180	R 17,912	R 6,875	R -12,723	R -13,281	R -18,576
Wyoming	3,361	R 8,536	R 3,440	R 1,735	R 1,034	R -814	R -101
Total	R 555,745	R 168,381	R 491,369	R 181,199	R -185,819	R -297,793	R -309,424

See footnotes at end of table.

Table 16. Net Withdrawals from Underground Storage, by State, 1991-1993
(Volume in Million Cubic Feet)—Continued

States	July 1992	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992
Arkansas	-852	-509	16	159	443	519	652
California	R -15,281	R -23,985	R -15,170	R -15,220	R 14,214	R 15,305	40,831
Colorado	R -4,177	R -2,019	R 368	R 4,146	R 6,690	R 2,758	5,804
Illinois	R -28,140	R -29,861	R -31,163	R 8,578	R 25,247	R 43,448	58,118
Indiana	R -5,123	R -2,563	R -1,206	R 500	R 4,104	R 4,606	6,794
Iowa	R -10,141	R -7,264	R -7,583	R -2,061	R 3,325	R 11,535	18,442
Kansas	R -4,255	R -2,319	R -2,161	R 4,821	R 9,031	R 13,082	4,420
Kentucky	R -3,544	R -1,546	R 1,236	R 1,675	R 4,848	R 1,211	1,568
Louisiana	R -13,811	R -18,063	R -19,021	R -719	R 10,774	R 24,031	42,343
Maryland	R -1,942	R -2,867	R -3,527	R 958	R 2,840	R 5,269	3,314
Michigan	R -73,161	R -66,808	R -43,850	R -507	R 62,627	R 72,236	82,535
Minnesota	R -299	R -307	R -391	R 198	R 311	R 123	426
Mississippi	R -4,165	R -7,931	R -3,896	R -106	R 2,086	R 1,362	9,794
Missouri	-266	-146	-427	-1,570	330	R 1,199	1,498
Montana	-1,026	-714	-1,517	-63	484	2,207	3,412
Nebraska	R -2,083	R -2,611	R -1,609	R -604	R 46	R 1,041	1,540
New Mexico	R 2,103	R -542	95	R 2,400	R 734	R 710	2,019
New York	R -10,849	R -9,127	R -9,430	R -2,328	R 11,629	R 13,614	11,051
Ohio	R -28,770	R -29,912	R -26,466	R -2,246	R 36,501	R 35,632	44,471
Oklahoma	R -16,356	R -11,329	R -8,448	R -5,813	R 3,738	R 8,339	17,866
Oregon	-1,194	-1,540	-1,572	443	1,586	1,540	1,568
Pennsylvania	R -41,339	R -58,946	R -45,507	R -6,017	R 61,022	R 73,709	81,577
Texas	R -17,447	R -16,212	R -26,278	R -2,096	R 4,693	R 20,462	43,357
Utah	R -3,526	R -2,776	R -3,514	R -1,845	R -252	R 415	3,899
Washington	-1,024	-1,175	-1,351	877	581	2,979	1,930
West Virginia	R -19,023	R -21,294	R -24,410	R -1,169	R 32,072	R 29,522	32,275
Wyoming	R -1,069	R -568	R -343	R 84	R 866	R 2,005	2,269
Total	R -306,761	R -322,935	R -277,127	R -17,528	R 300,570	R 388,858	523,770

See footnotes at end of table.

Table 16. Net Withdrawals from Underground Storage, by State, 1991-1993
(Volume in Million Cubic Feet)—Continued

States	Total 1991	December 1991	November 1991	October 1991	September 1991	August 1991
Arkansas	1,966	664	629	0	0	-14
California	-12,276	24,681	6,113	879	1,455	-3,416
Colorado	-7,370	598	-1,468	-1,759	-5,275	-4,430
Illinois	978	34,113	17,558	-26,390	-32,897	-34,057
Indiana	926	4,626	-802	-4,105	-4,467	-3,797
Iowa	5,207	13,739	4,997	-10,757	-10,675	-6,433
Kansas	-10,822	-2,317	8,913	-10,235	-10,203	-6,977
Kentucky	1,397	2,686	6,590	460	-3,437	-3,162
Louisiana	24,989	30,577	12,743	-23,315	-18,632	-6,029
Maryland	-1,852	1,070	-334	-800	-2,084	-2,061
Michigan	39,200	74,384	56,578	-32,872	-27,703	-46,233
Minnesota	-267	53	77	32	-93	4
Mississippi	5,884	6,130	7,864	-3,107	-5,101	-2,102
Missouri	-1,117	12	-199	-219	-212	-302
Montana	9,737	3,548	2,875	1,379	-120	-1,438
Nebraska	-229	2,362	402	154	-901	167
New Mexico	-3,694	-1,002	147	9	-2,642	1,960
New York	-11,619	7,125	3,662	-5,237	-8,681	-8,498
Ohio	-431	27,910	12,644	-9,113	-16,055	-17,817
Oklahoma	12,139	11,502	26,655	-4,702	-10,249	-4,757
Oregon	-566	487	-23	-339	-674	-1,092
Pennsylvania	11,335	37,591	10,030	-13,835	-34,526	-29,625
Texas	-6,398	9,801	8,300	-856	-10,004	-4,559
Utah	9,976	7,418	5,792	-560	-3,940	-3,813
Washington	-3,200	458	-1,040	1,040	5	60
West Virginia	16,888	22,834	11,077	-3,606	-8,516	-9,816
Wyoming	-426	1,941	1,809	-54	-761	-1,628
Total	80,355	322,991	201,590	-147,908	-216,387	-199,864

R = Revised Data.

Notes: This table contains total net withdrawals for each State with natural gas storage facilities. Positive numbers indicate the volume of withdrawals in excess of injections. Negative values indicate the volume of injections in excess of withdrawals. Data for "1991 and 1992" are final. All other data are preliminary at this time and are not considered final until publication of the *Natural Gas Annual* for that year.

Source: Form EIA-191.

**Table 17. Activities of Underground Natural Gas Storage Operators,
by State, August 1993**
(Volumes in Million Cubic Feet)

State	Total Storage Capacity	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity	
		Base Gas	Working Gas	Total	Volume	Percent	Injections	Withdrawals
Arkansas	31,278	17,888	4,969	22,856	-2,556	-34.0	0	0
California	472,109	248,215	185,337	433,552	2,657	1.5	17,334	6,808
Colorado	105,790	45,210	31,882	77,092	1,024	3.3	4,568	28
Illinois	950,732	621,543	223,898	845,442	-43,411	-16.2	55,199	21,406
Indiana	106,177	71,139	28,983	100,122	1,767	6.5	4,561	52
Iowa	279,700	200,700	46,332	247,032	-46,798	-50.3	19,862	9,518
Kansas	291,058	186,167	75,632	261,799	5,979	8.6	10,896	2,111
Kentucky	210,242	105,481	92,594	198,075	10,574	12.9	5,768	954
Louisiana	539,200	252,769	174,876	427,646	22,161	14.5	31,979	4,328
Maryland	62,400	46,677	9,247	55,924	-2,133	-18.7	1,718	0
Michigan	1,043,782	420,660	480,775	901,435	44,958	10.3	82,146	112
Minnesota	7,000	4,655	2,022	6,678	-170	-7.8	128	0
Mississippi	114,627	48,049	55,265	103,314	3,298	6.3	4,887	1,449
Missouri	30,564	21,600	8,420	30,020	-135	-1.6	323	6
Montana	375,010	169,892	87,558	257,450	-25,093	-22.3	1,580	1,278
Nebraska	93,312	27,312	59,772	87,084	116	2	1,969	112
New Mexico	94,600	30,426	7,367	37,793	-4,847	-39.7	698	3,016
New York	167,835	108,606	54,363	162,969	-12,631	-18.9	9,104	835
Ohio	594,644	358,926	131,327	490,253	-11,801	-8.2	27,309	360
Oklahoma	359,616	229,765	101,298	331,063	-52,650	-34.2	35,357	21,924
Oregon	11,445	3,291	7,172	10,463	-356	-4.7	1,042	0
Pennsylvania	664,694	359,510	272,685	632,195	8,174	3.1	44,841	4,063
Texas	598,783	239,070	214,326	453,396	-123,994	-36.6	30,447	18,483
Utah	114,980	53,704	21,416	75,121	742	3.6	5,159	6
Washington	34,100	18,800	13,125	31,925	-212	-1.6	1,351	731
West Virginia	519,286	304,701	150,309	455,010	34,772	30.1	18,879	98
Wyoming	105,669	59,451	24,921	84,372	-4,772	-16.1	1,633	8
Total	7,978,632	4,254,208	2,565,872	6,820,080	-195,339	-7.1	418,736	97,686

Notes: Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Source: Form EIA-191.

Table 18. Natural Gas Deliveries to Residential Consumers by State, 1991-1993

(Million Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993
Alabama	36,498	34,569	31,317	1,426	1,636	R 2,840
Alaska	8,867	8,935	8,552	423	577	891
Arizona	19,116	19,006	21,956	833	R 1,097	R 1,298
Arkansas	31,640	26,427	27,485	1,109	1,309	R 2,256
California	318,513	298,539	329,885	23,641	R 25,109	R 29,404
Colorado	72,607	62,663	67,165	2,843	R 3,985	R 6,487
Connecticut	28,301	28,241	24,572	1,026	1,257	1,921
Delaware	6,055	5,853	5,130	184	242	447
District of Columbia	11,786	11,551	10,582	432	540	817
Florida	9,252	9,710	8,185	671	R 764	R 952
Georgia	71,627	65,249	57,684	3,013	R 3,111	R 4,449
Hawaii	340	332	331	46	47	44
Idaho	8,269	5,804	6,866	301	333	689
Illinois	312,128	289,108	281,310	10,380	R 12,724	R 18,265
Indiana	105,757	96,846	92,478	3,140	R 4,346	R 6,398
Iowa	54,885	46,423	50,168	1,566	R 2,387	R 3,458
Kansas	60,496	46,728	50,711	1,874	R 2,459	R 4,727
Kentucky	41,677	38,094	36,333	1,299	R 1,722	R 1,921
Louisiana	37,788	36,429	35,685	2,112	R 2,217	R 2,946
Maine	574	612	483	22	30	38
Maryland	51,141	49,566	44,766	1,943	R 2,442	R 3,419
Massachusetts	84,656	83,512	71,781	3,505	R 4,472	R 7,277
Michigan	242,380	234,487	220,254	8,494	11,337	18,067
Minnesota	79,503	70,166	72,360	2,565	R 3,564	R 5,382
Mississippi	19,487	17,711	17,115	831	R 949	R 1,467
Missouri	96,130	76,628	81,284	2,870	R 3,675	R 7,478
Montana	12,626	9,563	11,651	604	839	997
Nebraska	36,088	25,658	28,803	1,068	1,427	2,252
Nevada	13,863	11,793	13,106	600	910	1,087
New Hampshire	4,569	4,595	3,935	149	211	349
New Jersey	136,643	132,332	117,188	5,104	5,972	8,744
New Mexico	21,490	21,474	20,801	856	R 1,062	R 1,699
New York	265,749	259,929	228,493	10,140	R 13,837	R 20,317
North Carolina	33,455	29,002	25,554	830	R 1,040	R 1,979
North Dakota	7,311	6,274	6,804	268	350	568
Ohio	231,030	220,619	206,597	7,220	R 11,797	R 13,734
Oklahoma	55,396	43,731	46,576	1,837	R 2,338	R 3,917
Oregon	20,220	14,588	18,776	768	945	1,769
Pennsylvania	178,879	176,408	159,358	NA	R 8,528	R 10,967
Rhode Island	14,254	14,017	11,858	558	671	1,117
South Carolina	17,085	15,272	13,115	402	R 495	R 947
South Dakota	8,163	6,556	7,079	281	370	606
Tennessee	39,447	34,586	32,728	1,102	R 1,353	R 2,288
Texas	147,024	136,157	140,151	7,750	R 8,441	R 10,676
Utah	34,360	28,523	34,020	1,533	1,845	3,055
Vermont	1,834	1,777	1,504	50	84	138
Virginia	43,699	41,300	35,645	1,420	R 1,608	R 2,402
Washington	36,285	26,379	31,711	1,455	2,676	3,191
West Virginia	23,436	24,646	21,530	529	R 955	R 1,596
Wisconsin	83,613	77,572	77,336	2,487	R 3,726	R 5,548
Wyoming	8,448	6,833	8,047	366	R 506	R 811
Total	3,284,438	3,032,775	2,956,802	129,524	R 164,118	R 234,089

See footnote at end of table.

Table 18. Natural Gas Deliveries to Residential Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	April 1993	March 1993	February 1993	January 1993	Total 1992	December 1992
Alabama	5,652	8,891	8,165	8,087	49,644	7,261
Alaska	1,288	1,471	2,138	2,079	14,350	1,682
Arizona	2,179	4,080	4,122	5,507	28,388	5,118
Arkansas	4,970	8,735	7,123	8,139	39,474	6,185
California	36,242	50,580	65,997	87,540	479,537	75,266
Colorado	9,870	14,984	15,937	18,500	94,614	15,715
Connecticut	3,989	6,171	7,302	6,635	42,394	5,855
Delaware	1,016	1,483	1,382	1,301	8,194	1,044
District of Columbia	1,624	2,838	2,795	2,740	16,587	2,213
Florida	1,463	1,903	1,849	1,650	14,380	1,766
Georgia	9,292	15,685	18,101	17,977	108,214	18,555
Hawaii	48	52	51	51	551	50
Idaho	1,040	1,699	1,951	2,256	9,659	1,946
Illinois	42,438	68,000	74,465	85,855	475,360	77,832
Indiana	14,327	23,924	25,852	27,770	152,692	24,261
Iowa	7,613	11,612	13,078	15,171	74,879	12,827
Kansas	9,162	13,049	13,450	15,775	71,522	12,732
Kentucky	5,024	9,264	11,225	11,222	61,911	10,617
Louisiana	5,580	7,940	8,409	8,584	55,221	8,411
Maine	71	115	153	144	872	111
Maryland	6,596	12,217	12,767	11,757	75,122	10,567
Massachusetts	13,203	18,308	18,634	18,257	119,670	14,189
Michigan	34,718	54,009	56,815	58,940	358,088	50,376
Minnesota	10,745	16,317	18,621	22,308	113,560	18,543
Mississippi	2,965	4,402	4,393	4,480	26,487	4,198
Missouri	13,434	21,556	21,884	25,234	116,655	19,801
Montana	1,674	2,591	2,490	3,631	16,673	3,065
Nebraska	4,864	7,316	7,759	11,404	41,414	7,085
Nevada	1,503	2,715	3,157	3,892	18,184	3,302
New Hampshire	721	1,009	1,081	1,048	6,449	750
New Jersey	19,991	31,606	34,599	30,626	198,462	27,553
New Mexico	2,798	4,026	4,736	6,313	31,433	5,194
New York	39,136	60,720	62,212	59,387	378,689	49,715
North Carolina	5,036	8,033	8,149	8,389	42,588	6,819
North Dakota	1,082	1,462	1,522	2,059	9,693	1,472
Ohio	32,024	52,333	58,337	55,585	340,628	49,551
Oklahoma	8,042	12,165	12,493	14,604	65,811	11,635
Oregon	2,533	3,844	4,570	5,790	23,109	4,337
Pennsylvania	24,899	42,203	44,864	41,824	266,528	36,609
Rhode Island	2,200	3,291	3,326	3,091	20,000	2,403
South Carolina	2,532	4,230	4,247	4,232	22,392	3,784
South Dakota	1,153	1,678	1,784	2,291	10,791	1,797
Tennessee	5,647	9,840	9,089	10,127	52,220	9,125
Texas	17,317	27,195	34,330	41,315	214,682	35,434
Utah	4,375	6,589	8,045	8,918	44,701	7,957
Vermont	271	433	446	412	2,520	308
Virginia	5,781	10,351	11,461	10,675	62,431	9,396
Washington	4,766	6,815	7,491	9,891	43,048	7,930
West Virginia	3,534	5,724	5,916	5,182	35,291	4,146
Wisconsin	12,504	18,048	18,316	22,983	123,405	19,080
Wyoming	1,166	1,655	1,799	2,145	10,895	1,803
Total	450,098	702,955	769,882	833,773	4,690,065	717,170

See footnote at end of table.

Table 18. Natural Gas Deliveries to Residential Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	November 1992	October 1992	September 1992	August 1992	July 1992	June 1992
Alabama	3,402	1,728	1,373	1,311	1,423	1,772
Alaska	1,442	1,209	643	438	474	626
Arizona	1,576	1,000	870	815	947	1,132
Arkansas	3,132	1,511	1,096	1,124	1,194	1,371
California	37,291	24,434	21,969	22,039	22,397	24,100
Colorado	7,807	3,547	2,844	2,438	2,809	3,963
Connecticut	3,876	2,271	1,155	996	1,125	1,394
Delaware	628	307	183	179	197	301
District of Columbia	1,314	642	446	420	469	630
Florida	956	685	636	627	674	733
Georgia	12,934	5,284	3,211	2,981	3,170	3,536
Hawaii	42	42	43	42	45	46
Idaho	1,024	428	274	183	233	247
Illinois	54,950	28,742	13,758	11,171	10,391	12,963
Indiana	15,953	8,361	3,960	3,312	3,484	4,627
Iowa	8,350	3,725	1,885	1,668	1,546	2,186
Kansas	6,102	2,421	1,798	1,740	1,932	2,609
Kentucky	6,997	3,376	1,413	1,416	1,326	1,835
Louisiana	4,185	2,222	2,014	1,980	2,067	2,268
Maine	70	41	17	22	24	37
Maryland	6,855	4,038	2,027	2,068	2,153	2,577
Massachusetts	10,056	5,342	3,369	3,203	3,453	4,822
Michigan	34,278	20,856	9,435	8,655	8,773	11,927
Minnesota	12,857	6,449	3,021	2,525	2,702	3,130
Mississippi	1,927	979	856	817	896	963
Missouri	10,344	4,259	2,942	2,681	2,931	3,838
Montana	1,792	1,106	727	421	485	541
Nebraska	4,561	2,030	1,096	983	1,047	1,311
Nevada	1,226	727	608	529	671	695
New Hampshire	526	288	151	139	159	219
New Jersey	17,953	10,368	5,338	4,918	5,239	6,166
New Mexico	1,992	1,033	889	651	929	1,122
New York	30,758	18,833	10,006	9,649	10,509	13,470
North Carolina	3,446	1,781	806	734	837	1,301
North Dakota	990	458	285	214	260	311
Ohio	34,181	20,929	8,111	7,238	8,098	10,336
Oklahoma	4,722	2,236	1,775	1,712	1,949	2,549
Oregon	1,993	1,017	648	626	610	772
Pennsylvania	24,806	15,853	8,950	5,902	6,134	8,047
Rhode Island	1,720	890	547	423	639	771
South Carolina	1,750	792	409	386	424	597
South Dakota	1,267	602	315	254	265	321
Tennessee	4,473	1,885	1,100	1,051	1,120	1,437
Texas	19,205	8,584	7,750	7,553	8,119	8,776
Utah	3,844	1,802	1,321	1,255	1,406	1,524
Vermont	205	129	53	49	53	72
Virginia	5,553	3,307	1,487	1,406	1,495	1,788
Washington	4,236	2,236	1,310	856	910	1,384
West Virginia	3,120	1,899	819	681	683	1,105
Wisconsin	13,233	7,630	3,229	2,662	2,604	3,681
Wyoming	1,071	551	360	278	323	431
Total	436,771	240,662	137,106	125,580	131,801	162,378

See footnote at end of table

Table 18. Natural Gas Deliveries to Residential Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	2,714	5,012	5,605	9,267	8,777	46,149
Alaska	1,012	1,346	1,764	1,933	1,777	13,562
Arizona	1,207	2,313	3,589	4,220	5,598	31,353
Arkansas	1,854	3,828	4,305	8,724	7,150	40,639
California	26,422	37,311	46,860	61,574	77,875	508,697
Colorado	5,005	8,789	11,499	14,400	16,198	97,440
Connecticut	2,417	4,284	5,777	6,571	6,675	37,181
Delaware	528	948	1,158	1,417	1,303	7,189
District of Columbia	948	1,820	2,172	2,829	2,683	15,266
Florida	936	1,340	1,478	2,345	2,206	12,908
Georgia	4,718	7,360	12,768	14,531	19,167	96,662
Hawaii	47	48	48	50	51	545
Idaho	445	730	944	1,361	1,843	10,223
Illinois	22,488	40,752	59,187	63,013	80,315	466,970
Indiana	7,584	14,093	18,963	22,018	26,077	146,446
Iowa	3,335	6,857	6,482	11,637	12,381	78,801
Kansas	3,788	6,917	7,890	10,939	12,653	74,825
Kentucky	2,626	4,179	7,813	8,511	11,805	59,465
Louisiana	2,799	4,544	6,650	9,220	9,661	54,593
Maine	66	96	122	139	126	722
Maryland	4,007	7,087	9,717	11,583	12,442	69,235
Massachusetts	8,475	13,384	16,712	19,067	19,599	102,955
Michigan	21,545	36,421	46,640	52,666	56,513	337,205
Minnesota	5,136	10,391	14,009	15,904	18,695	117,148
Mississippi	1,287	2,440	2,850	4,551	4,724	25,756
Missouri	5,858	11,044	13,546	18,433	20,977	120,680
Montana	837	1,371	1,620	2,180	2,529	18,413
Nebraska	2,020	3,760	4,706	5,956	6,858	44,671
Nevada	803	1,394	2,094	2,611	3,525	19,135
New Hampshire	461	766	869	1,089	1,032	5,609
New Jersey	11,680	20,212	26,880	31,006	31,150	176,640
New Mexico	1,514	2,723	3,842	5,376	5,988	29,707
New York	23,835	41,548	53,492	59,000	58,076	338,892
North Carolina	2,222	4,509	5,194	7,366	7,573	37,976
North Dakota	616	1,002	1,128	1,456	1,500	10,338
Ohio	17,276	31,344	45,783	50,254	57,528	321,724
Oklahoma	3,219	5,961	7,235	10,656	12,164	69,200
Oregon	1,248	1,891	2,477	3,223	4,367	26,324
Pennsylvania	13,989	26,243	36,068	41,812	44,113	242,728
Rhode Island	1,446	2,271	2,602	3,092	2,997	17,366
South Carolina	1,033	2,295	2,650	4,071	4,203	19,612
South Dakota	638	996	1,202	1,497	1,639	11,218
Tennessee	2,186	4,859	6,002	8,849	10,132	49,357
Texas	10,307	14,934	21,265	33,008	39,747	222,200
Utah	1,986	3,164	4,669	7,132	8,422	50,572
Vermont	145	284	367	426	431	2,203
Virginia	3,269	5,884	7,953	10,106	10,805	54,199
Washington	2,377	3,736	4,719	5,966	7,286	46,222
West Virginia	2,076	4,038	4,328	6,231	6,183	32,587
Wisconsin	6,373	11,914	15,740	17,320	19,941	124,081
Wyoming	613	951	1,146	1,492	1,876	11,992
Total	251,416	431,401	573,979	698,082	785,718	4,555,659

R Revised Data.

NA Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-857.

Table 19. Natural Gas Deliveries to Commercial Consumers by State, 1991-1993

(Million Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993
Alabama	17,174	16,377	15,166	1,105	1,199	1,564
Alaska	12,291	12,927	12,827	918	1,055	1,442
Arizona	17,466	16,972	17,873	1,665	2,046	1,861
Arkansas	19,425	16,370	16,940	1,010	1,075	1,536
California	162,610	175,279	173,757	19,856	16,987	19,515
Colorado	48,339	42,934	46,203	2,482	3,162	4,353
Connecticut	19,881	19,646	17,719	973	1,012	1,430
Delaware	3,544	3,394	2,868	163	139	281
District of Columbia	10,940	11,001	10,574	658	724	1,138
Florida	25,263	25,612	23,287	2,923	3,075	3,352
Georgia	36,317	33,412	31,303	2,600	2,559	3,077
Hawaii	1,257	1,263	1,259	174	183	168
Idaho	6,979	5,321	6,263	385	389	569
Illinois	126,899	117,594	116,938	5,877	5,099	7,745
Indiana	49,092	44,149	42,646	1,800	2,057	2,850
Iowa	32,206	27,090	29,173	1,215	1,481	2,030
Kansas	37,637	31,608	37,679	3,504	2,248	2,924
Kentucky	23,113	21,232	20,150	1,029	1,443	1,326
Louisiana	16,417	16,061	16,341	1,269	1,456	1,746
Maine	1,462	1,501	1,202	71	80	107
Maryland	28,095	27,312	24,183	1,496	1,846	2,094
Massachusetts	42,606	42,476	36,321	2,614	3,121	4,066
Michigan	118,069	113,137	109,993	5,039	5,968	8,940
Minnesota	54,171	50,040	52,270	2,176	2,533	3,561
Mississippi	13,162	11,411	11,125	970	958	1,100
Missouri	46,464	39,237	41,215	2,093	2,293	4,168
Montana	6,647	6,528	7,994	439	436	686
Nebraska	23,489	18,950	24,362	1,289	1,351	1,440
Nevada	11,054	10,232	11,019	921	1,054	1,344
New Hampshire	4,167	3,995	3,380	177	204	294
New Jersey	89,100	85,788	78,930	5,985	5,256	7,197
New Mexico	17,448	16,723	16,691	1,416	1,464	1,732
New York	140,441	142,705	126,913	10,369	11,087	11,562
North Carolina	23,466	23,041	21,431	1,314	1,421	1,793
North Dakota	6,795	5,994	6,662	317	347	477
Ohio	107,239	104,011	96,717	3,919	5,194	6,324
Oklahoma	27,904	22,830	25,794	1,343	1,458	2,075
Oregon	15,664	12,002	15,077	914	1,009	1,447
Pennsylvania	65,378	65,935	79,967	NA	4,462	5,749
Rhode Island	5,765	5,978	5,155	273	330	429
South Carolina	10,650	10,447	9,701	826	861	988
South Dakota	6,879	5,376	5,864	315	343	531
Tennessee	33,441	29,741	29,491	1,912	2,023	2,618
Texas	129,496	109,200	112,048	16,324	15,471	14,520
Utah	13,248	10,612	13,605	471	560	1,074
Vermont	1,530	1,544	1,313	62	80	124
Virginia	34,246	31,916	27,979	1,986	2,171	2,825
Washington	28,386	23,185	27,457	1,816	1,921	2,797
West Virginia	15,519	15,664	13,005	906	1,068	1,271
Wisconsin	50,151	44,632	44,035	2,016	2,594	3,413
Wyoming	6,157	4,982	6,028	336	369	598
Total	1,867,226	1,757,985	1,725,875	123,216	126,742	156,250

See footnote at end of table.

Table 19. Natural Gas Deliveries to Commercial Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	April 1993	March 1993	February 1993	January 1993	Total 1992	December 1992
Alabama	2,566	3,632	3,581	3,528	25,235	3,338
Alaska	1,664	2,052	2,472	2,488	21,299	2,390
Arizona	2,418	3,071	2,968	3,439	27,135	3,573
Arkansas	2,914	3,987	4,161	4,742	25,314	3,596
California	19,725	23,421	33,785	29,322	285,035	28,738
Colorado	6,587	9,580	10,266	11,929	66,443	10,319
Connecticut	2,874	4,286	4,816	4,490	29,838	3,871
Delaware	569	850	810	732	4,985	622
District of Columbia	1,534	2,144	2,414	2,328	16,103	1,921
Florida	3,864	4,065	4,055	3,929	41,736	3,914
Georgia	4,829	7,755	7,887	7,610	53,861	7,642
Hawaii	177	179	190	185	2,144	184
Idaho	833	1,302	1,684	1,817	8,932	1,557
Illinois	17,603	27,690	29,700	33,186	196,972	31,575
Indiana	6,549	10,675	11,930	12,932	72,779	12,097
Iowa	4,308	6,754	7,756	8,662	46,097	7,827
Kansas	5,087	7,223	7,616	9,034	53,973	7,543
Kentucky	2,923	5,179	5,592	5,622	35,419	5,519
Louisiana	2,381	3,082	3,214	3,269	28,454	3,574
Maine	192	291	364	356	2,209	285
Maryland	3,742	6,182	6,514	6,222	42,484	5,565
Massachusetts	6,366	8,919	9,032	8,492	64,355	6,933
Michigan	18,049	25,283	27,068	27,742	173,806	24,211
Minnesota	7,222	11,305	12,792	14,583	82,381	12,795
Mississippi	1,741	2,655	2,944	2,794	17,942	2,387
Missouri	6,389	9,885	10,245	11,412	60,963	9,646
Montana	1,143	1,750	1,714	2,479	11,560	2,095
Nebraska	3,027	4,472	4,725	7,184	34,491	4,941
Nevada	1,317	2,022	2,117	2,279	16,113	2,170
New Hampshire	612	912	974	994	5,862	715
New Jersey	13,341	19,219	20,061	18,042	130,891	16,470
New Mexico	2,334	2,819	3,440	4,243	27,891	4,165
New York	20,159	28,850	29,847	28,766	217,220	25,808
North Carolina	3,300	5,038	5,223	5,398	36,424	4,941
North Dakota	926	1,339	1,478	1,911	9,762	1,549
Ohio	14,913	25,344	26,510	25,034	160,704	23,770
Oklahoma	3,770	5,949	6,186	7,124	35,235	5,771
Oregon	1,926	2,877	3,367	4,144	19,576	3,166
Pennsylvania	11,795	19,664	21,017	19,186	134,257	18,385
Rhode Island	907	1,325	1,359	1,140	9,089	951
South Carolina	1,478	2,158	2,114	2,225	16,644	2,089
South Dakota	996	1,346	1,498	1,849	9,127	1,476
Tennessee	4,625	7,385	7,553	7,326	46,534	6,846
Texas	17,105	19,070	21,693	25,314	184,677	22,093
Utah	1,605	2,695	3,307	3,536	16,599	3,120
Vermont	199	350	368	347	2,319	269
Virginia	4,835	7,305	7,738	7,386	50,757	6,895
Washington	3,817	5,201	5,718	7,118	37,893	5,709
West Virginia	2,184	3,452	3,504	3,114	24,419	3,396
Wisconsin	7,006	10,572	11,753	12,798	71,343	11,087
Wyoming	828	1,192	1,295	1,539	8,019	1,271
Total	257,452	374,035	408,214	421,317	2,803,262	380,772

See footnote at end of table.

Table 19. Natural Gas Deliveries to Commercial Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	November 1992	October 1992	September 1992	August 1992	July 1992	June 1992
Alabama	R 1,983	R 1,320	R 1,136	R 1,078	R 1,108	R 1,225
Alaska	1,928	1,790	1,252	1,013	1,084	1,206
Arizona	R 1,858	R 1,580	1,601	R 1,505	R 1,890	1,754
Arkansas	R 2,078	R 1,219	R 1,029	R 1,022	R 1,062	R 1,108
California	R 20,999	R 19,112	R 19,247	R 21,633	R 21,150	R 22,150
Colorado	R 5,594	R 3,078	R 2,312	R 2,183	R 2,430	R 3,055
Connecticut	R 2,623	R 1,562	R 1,075	R 1,061	R 1,046	R 1,149
Delaware	R 395	R 240	R 182	R 152	R 186	R 198
District of Columbia	R 1,103	R 753	R 653	R 673	R 718	R 764
Florida	R 3,317	R 2,954	R 2,849	R 2,881	R 2,976	R 3,085
Georgia	R 4,640	R 3,201	R 2,482	R 2,503	R 2,536	R 2,596
Hawaii	178	168	178	173	174	184
Idaho	R 889	R 465	R 369	R 330	R 345	R 343
Illinois	R 22,757	R 12,394	R 6,618	R 6,025	R 5,811	R 4,907
Indiana	R 8,135	R 4,253	R 2,131	R 1,955	R 1,811	R 2,004
Iowa	R 5,843	2,645	R 1,433	R 1,257	1,100	R 1,427
Kansas	R 4,867	R 3,162	R 3,132	R 3,462	R 3,609	R 2,814
Kentucky	R 4,064	R 2,237	R 1,209	R 1,158	R 1,066	R 1,132
Louisiana	R 2,295	R 1,577	R 1,508	R 1,431	R 1,556	R 1,564
Maine	R 188	R 116	67	R 52	R 79	80
Maryland	R 3,895	R 2,491	1,615	1,586	1,553	1,784
Massachusetts	R 5,530	R 3,776	R 2,753	R 2,884	R 3,072	R 2,768
Michigan	R 16,298	R 9,760	R 5,431	R 4,964	R 4,981	R 5,883
Minnesota	R 9,526	R 5,092	R 2,631	R 2,296	R 2,244	R 2,467
Mississippi	R 1,489	R 942	R 847	R 867	R 885	R 888
Missouri	R 5,335	R 2,728	R 2,024	R 1,993	R 1,849	R 2,547
Montana	R 1,271	R 810	R 523	R 331	R 365	R 377
Nebraska	R 3,988	R 2,508	R 1,710	R 2,393	R 2,366	R 1,330
Nevada	R 1,022	R 982	R 872	R 824	R 1,015	R 945
New Hampshire	515	295	174	169	179	208
New Jersey	R 11,027	R 7,164	R 5,462	R 4,981	R 5,240	R 5,294
New Mexico	R 2,269	R 1,673	R 1,541	R 1,513	R 1,200	R 1,171
New York	R 16,804	R 12,860	R 9,582	R 9,456	R 9,327	R 9,915
North Carolina	R 3,010	R 2,138	R 1,679	R 1,607	R 1,591	R 1,733
North Dakota	1,015	576	363	262	279	298
Ohio	R 15,094	R 9,092	R 4,418	R 4,260	R 4,291	R 5,016
Oklahoma	R 2,608	R 1,449	R 1,240	R 1,292	R 1,407	R 1,540
Oregon	R 1,652	R 1,105	R 863	R 782	R 784	R 884
Pennsylvania	R 12,784	R 8,439	R 4,579	R 4,132	R 4,046	R 4,520
Rhode Island	R 654	R 609	R 411	R 479	R 448	R 498
South Carolina	R 1,345	R 1,006	R 875	R 882	R 820	R 944
South Dakota	1,104	558	R 324	284	291	303
Tennessee	R 3,963	R 2,368	R 1,933	R 1,681	R 1,838	R 2,016
Texas	R 17,386	R 11,672	R 11,356	R 12,966	R 13,768	R 10,879
Utah	1,329	545	405	372	410	457
Vermont	211	144	77	75	79	75
Virginia	R 4,714	R 3,275	R 1,903	R 2,055	R 2,085	R 2,271
Washington	R 3,418	R 2,240	R 1,734	R 1,514	R 1,575	1,830
West Virginia	R 2,092	R 1,482	R 910	R 855	R 812	R 999
Wisconsin	R 7,918	R 4,108	R 1,954	R 1,615	R 1,759	R 1,986
Wyoming	R 760	R 439	R 287	R 269	R 264	R 309
Total	R 255,758	R 166,151	R 120,899	R 121,186	R 122,339	R 124,881

See footnote at end of table.

Table 19. Natural Gas Deliveries to Commercial Consumers by State, 1991-1993
(Continued)
(Million Cubic Feet)

State	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 1,513	R 2,287	R 2,671	R 3,833	R 3,739	23,711
Alaska	1,597	1,935	2,319	2,372	2,414	20,897
Arizona	1,620	R 2,352	R 2,888	R 3,011	R 3,647	27,633
Arkansas	R 1,358	R 2,114	R 2,708	R 3,861	R 4,159	25,986
California	R 27,118	R 18,379	R 24,413	R 23,834	R 38,234	287,618
Colorado	R 3,631	R 5,965	R 7,609	R 9,450	R 10,794	68,953
Connecticut	R 1,779	R 2,941	R 3,940	R 4,374	R 4,417	26,838
Delaware	R 308	R 537	R 686	R 755	R 744	4,253
District of Columbia	R 1,056	R 1,774	R 2,132	R 2,256	R 2,300	15,550
Florida	R 3,382	R 3,741	R 3,856	R 4,364	R 4,408	39,271
Georgia	R 3,103	R 4,381	R 5,778	R 6,952	R 8,066	51,036
Hawaii	177	183	174	180	190	2,148
Idaho	R 447	R 643	R 834	R 1,167	R 1,543	9,582
Illinois	R 8,872	R 17,598	R 23,400	R 26,501	R 30,506	R 193,851
Indiana	R 3,400	R 6,172	R 8,437	R 10,265	R 12,060	68,431
Iowa	R 1,877	R 3,883	R 4,949	R 6,709	R 7,145	R 46,616
Kansas	R 3,736	R 4,571	R 4,372	R 5,862	R 6,844	58,571
Kentucky	R 1,600	R 2,612	R 3,874	R 4,758	R 6,191	33,700
Louisiana	R 1,769	R 2,367	R 2,743	R 4,003	R 4,060	25,461
Maine	R 157	R 229	R 315	R 318	R 322	1,860
Maryland	R 2,391	R 3,807	R 5,073	R 6,382	R 6,323	38,117
Massachusetts	R 4,450	R 7,049	R 8,217	R 8,736	R 8,184	53,189
Michigan	R 10,406	R 17,769	R 22,443	R 24,979	R 26,677	165,561
Minnesota	R 3,602	R 7,517	R 10,134	R 11,075	R 13,000	85,875
Mississippi	R 994	R 1,473	R 1,758	R 2,595	R 2,817	17,743
Missouri	R 3,144	R 5,601	R 6,835	R 9,060	R 10,201	63,191
Montana	R 568	R 930	R 1,099	R 1,464	R 1,726	12,848
Nebraska	R 1,781	R 2,411	R 2,970	R 3,760	R 4,332	40,291
Nevada	R 1,012	R 1,335	R 1,725	R 1,873	R 2,327	16,968
New Hampshire	376	629	R 762	931	911	5,028
New Jersey	R 8,392	R 14,066	R 16,759	R 18,398	R 17,638	121,240
New Mexico	R 1,687	R 2,372	R 2,730	R 3,445	R 4,118	24,993
New York	R 13,518	R 23,039	R 27,748	R 29,912	R 29,246	199,623
North Carolina	R 2,205	R 3,296	R 3,983	R 5,066	R 5,189	34,314
North Dakota	R 529	937	1,082	1,380	R 1,489	10,734
Ohio	R 7,455	R 15,893	R 20,215	R 24,820	R 26,321	150,407
Oklahoma	R 1,785	R 2,956	R 3,653	R 5,310	R 6,180	39,596
Oregon	R 1,171	R 1,542	R 1,925	R 2,465	R 3,231	22,328
Pennsylvania	R 6,793	R 12,210	R 17,679	R 19,482	R 21,204	125,549
Rhode Island	R 676	R 1,047	1,103	R 1,128	R 1,076	8,277
South Carolina	R 1,068	R 1,436	R 1,745	R 2,158	R 2,276	15,796
South Dakota	460	828	R 1,007	1,174	R 1,314	9,476
Tennessee	R 2,436	R 4,205	R 5,069	R 6,834	R 7,343	45,955
Texas	R 12,557	R 14,174	R 15,866	R 19,049	R 22,907	R 180,974
Utah	642	1,155	1,866	R 2,952	3,330	19,282
Vermont	118	231	320	354	366	2,058
Virginia	R 3,289	R 4,523	R 5,985	R 6,690	R 7,072	44,077
Washington	R 2,343	R 3,179	R 3,855	R 4,840	R 5,564	41,805
West Virginia	R 1,341	R 2,322	R 2,986	R 3,565	R 3,659	R 21,043
Wisconsin	R 3,632	R 6,870	R 9,113	R 10,037	R 11,235	71,539
Wyoming	R 438	R 668	R 821	R 1,078	R 1,404	9,105
Total	R 169,759	R 250,136	R 314,629	R 365,815	R 410,424	R 2,728,947

R = Revised Data.

NA = Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. Deliveries for total year 1991 and 1992 may not equal the sum of the twelve months. Gas volumes delivered for use as vehicle fuel are included in the annual total but not in the monthly components. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-857.

**Table 20. Natural Gas Deliveries to Industrial Consumers by State,
1991-1993
(Million Cubic Feet)**

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993
Alabama	103,565	98,517	88,640	14,029	R 13,539	R 13,800
Alaska	44,891	47,707	44,577	6,934	R 5,517	R 5,906
Arizona	11,713	11,467	11,367	1,598	1,316	1,679
Arkansas	66,246	69,381	70,349	8,207	R 8,515	R 8,939
California	324,579	352,998	347,250	52,134	R 44,010	R 46,173
Colorado	51,695	31,760	33,658	6,778	R 7,245	R 7,322
Connecticut	22,573	21,551	18,484	2,504	2,619	2,737
Delaware	11,538	9,831	9,779	1,604	1,516	1,632
District of Columbia	0	0	0	0	0	0
Florida	56,701	50,401	49,955	8,164	R 8,044	R 8,210
Georgia	97,041	102,143	96,151	14,267	R 13,515	R 13,488
Hawaii	0	0	0	0	0	0
Idaho	17,320	15,943	15,799	2,154	2,307	2,272
Illinois	182,283	178,334	176,013	19,314	R 19,630	R 21,681
Indiana	156,122	142,368	132,592	18,558	R 19,517	R 19,866
Iowa	58,050	57,737	55,020	7,164	R 7,690	R 7,765
Kansas	80,363	72,651	72,901	12,117	R 10,374	R 10,749
Kentucky	44,121	42,526	40,460	4,909	R 5,146	R 5,351
Louisiana	454,678	577,290	539,458	70,055	R 63,367	R 60,391
Maine	817	1,198	1,255	112	69	80
Maryland	27,753	29,651	28,044	3,374	R 3,742	R 3,868
Massachusetts	40,435	40,059	33,989	5,428	R 6,288	R 5,846
Michigan	191,238	183,039	161,992	22,728	R 24,666	R 24,531
Minnesota	53,635	55,561	53,971	6,189	R 7,192	R 6,251
Mississippi	66,601	60,834	59,506	9,573	R 9,031	R 9,194
Missouri	35,332	34,636	33,519	3,727	R 4,098	R 4,188
Montana	6,885	6,480	5,361	954	R 780	R 755
Nebraska	19,993	14,603	14,789	2,624	R 2,276	R 2,294
Nevada	20,139	5,435	3,897	3,322	R 3,240	R 2,995
New Hampshire	2,297	2,291	2,008	311	297	375
New Jersey	109,977	96,751	57,581	14,046	14,198	14,283
New Mexico	9,950	10,157	11,087	1,414	R 1,335	R 1,315
New York	91,798	86,728	69,150	9,984	R 10,889	R 11,505
North Carolina	54,715	53,029	48,405	6,829	R 7,828	R 7,584
North Dakota	3,677	3,562	2,714	421	482	467
Ohio	174,873	173,888	161,517	14,929	R 22,180	R 22,139
Oklahoma	102,421	104,019	104,861	13,959	R 13,198	R 14,390
Oregon	35,851	32,298	31,667	4,889	4,725	5,009
Pennsylvania	149,006	140,797	136,601	NA	R 19,245	R 18,966
Rhode Island	26,521	28,824	12,983	3,803	R 3,799	R 3,941
South Carolina	54,642	55,902	48,831	7,449	R 7,884	R 7,301
South Dakota	2,820	2,696	2,814	334	340	346
Tennessee	69,086	73,973	68,154	8,927	R 7,665	R 10,212
Texas	1,105,649	1,008,335	975,076	167,329	R 154,284	R 143,652
Utah	27,156	23,312	23,378	2,826	3,254	3,164
Vermont	1,198	1,151	971	137	136	159
Virginia	55,899	40,869	35,545	10,951	R 7,470	R 4,907
Washington	53,989	46,703	45,292	7,134	6,335	7,582
West Virginia	28,611	24,963	23,413	3,815	R 3,777	R 3,924
Wisconsin	80,170	76,617	75,715	7,378	R 8,031	R 8,792
Wyoming	30,358	32,641	18,460	4,475	R 4,123	R 4,737
Total	4,516,971	4,433,609	4,144,998	617,831	R 596,727	R 592,712

See footnotes at end of table.

**Table 20. Natural Gas Deliveries to Industrial Consumers by State,
1991-1993 (Continued)**
(Million Cubic Feet)

State	April 1993	March 1993	February 1993	January 1993	Total 1992	December 1992
Alabama	R 14,999	R 15,943	R 15,268	R 15,987	R 169,049	R 14,906
Alaska	R 6,220	R 6,258	R 6,298	R 7,757	R 80,938	R 7,887
Arizona	1,867	1,979	1,561	1,713	R 19,774	R 1,974
Arkansas	R 9,393	R 10,786	R 9,765	R 10,639	R 118,850	R 10,701
California	R 43,228	R 48,371	R 49,424	R 41,239	R 594,569	R 48,770
Colorado	R 7,372	R 7,220	R 7,683	R 8,075	R 57,579	R 6,583
Connecticut	3,176	3,903	4,043	3,590	R 36,383	3,490
Delaware	1,726	1,776	1,571	1,713	R 18,060	R 1,760
District of Columbia	0	0	0	0	0	0
Florida	R 7,917	R 8,362	R 7,983	R 8,022	R 84,829	R 7,792
Georgia	R 13,685	R 14,155	R 13,736	R 14,196	R 172,227	R 14,203
Hawaii	0	0	0	0	0	0
Idaho	2,383	2,759	2,718	2,726	R 27,044	R 2,615
Illinois	R 24,113	R 31,811	R 33,445	R 32,289	R 300,366	R 31,294
Indiana	R 21,485	R 25,813	R 25,146	R 25,736	R 245,523	R 24,807
Iowa	R 7,847	R 9,406	R 9,036	R 9,143	R 100,752	R 9,493
Kansas	R 10,619	R 11,489	R 12,998	R 12,017	R 130,807	R 12,952
Kentucky	R 6,128	R 7,429	R 7,801	R 7,356	R 73,619	R 7,162
Louisiana	R 64,569	R 65,052	R 63,341	R 67,902	R 932,467	R 72,036
Maine	142	136	126	152	2,048	165
Maryland	R 3,635	R 4,634	R 4,283	R 4,217	R 49,720	R 4,346
Massachusetts	R 5,305	R 5,911	R 5,694	R 5,963	R 70,872	R 6,530
Michigan	R 27,239	R 31,681	R 30,798	R 29,595	R 305,416	R 27,672
Minnesota	R 7,093	R 8,841	R 8,690	R 9,380	R 93,025	R 8,994
Mississippi	R 9,837	R 9,854	R 8,840	R 10,271	R 102,612	R 8,476
Missouri	R 4,947	R 6,015	R 5,789	R 6,568	R 58,466	R 5,823
Montana	R 931	R 1,192	R 1,067	R 1,206	R 12,218	R 1,280
Nebraska	R 3,653	R 2,747	R 2,663	R 3,737	R 26,451	R 3,015
Nevada	R 4,051	R 2,181	R 1,679	R 2,672	R 9,259	R 754
New Hampshire	366	325	304	318	R 3,828	R 292
New Jersey	16,500	16,846	16,874	17,230	R 174,569	R 16,237
New Mexico	R 1,533	1,416	R 1,458	1,480	R 17,070	R 1,533
New York	R 13,610	R 15,669	R 14,948	R 15,192	R 147,520	R 14,944
North Carolina	R 8,054	R 8,604	R 7,620	R 8,195	R 90,984	R 7,854
North Dakota	504	582	586	635	R 5,940	570
Ohio	R 26,126	R 30,726	R 29,475	R 29,299	R 294,805	R 29,294
Oklahoma	R 14,510	R 15,270	R 14,773	R 16,320	R 175,168	R 15,365
Oregon	5,329	5,457	4,878	5,565	R 58,519	R 4,908
Pennsylvania	R 20,885	R 24,765	R 23,606	R 23,571	R 236,708	R 21,697
Rhode Island	R 3,726	R 3,771	R 3,695	R 3,786	R 47,917	R 3,803
South Carolina	R 7,967	R 8,723	R 7,408	R 7,909	R 94,327	R 7,032
South Dakota	364	459	462	515	R 4,488	526
Tennessee	R 9,456	R 10,368	R 10,444	R 12,014	R 126,230	R 11,079
Texas	R 157,790	R 166,799	R 149,368	R 166,428	R 1,734,001	R 155,355
Utah	3,527	4,062	R 4,733	R 5,590	R 40,878	R 4,741
Vermont	173	191	187	215	1,958	196
Virginia	R 7,099	R 7,839	R 9,108	R 8,523	R 68,808	R 5,590
Washington	7,503	8,979	8,143	8,313	R 79,766	R 7,179
West Virginia	R 4,116	R 4,588	R 4,083	R 4,310	R 44,178	R 4,630
Wisconsin	R 12,166	R 14,082	R 14,459	R 15,263	R 130,267	R 14,008
Wyoming	R 4,461	R 3,404	R 4,306	R 4,852	R 56,046	R 4,677
Total	R 639,321	R 698,833	R 672,366	R 699,383	R 7,526,898	R 676,992

See footnotes at end of table.

**Table 20. Natural Gas Deliveries to Industrial Consumers by State,
1991-1993 (Continued)**
(Million Cubic Feet)

State	November 1992	October 1992	September 1992	August 1992	July 1992	June 1992
Alabama	R 14,853	R 13,968	R 13,496	R 13,309	R 13,659	R 13,739
Alaska	R 7,337	R 7,810	R 4,841	R 5,355	R 6,968	R 6,317
Arizona	R 1,533	R 1,657	R 1,562	R 1,581	R 1,627	R 1,613
Arkansas	R 9,916	R 9,760	R 9,778	R 9,314	R 9,129	R 9,098
California	R 50,165	R 40,509	R 52,231	R 49,895	R 43,635	R 47,916
Colorado	R 5,439	R 5,093	R 4,660	R 4,044	R 4,197	R 4,173
Connecticut	3,102	2,867	2,732	2,643	2,522	2,621
Delaware	R 1,892	R 1,790	R 1,433	R 1,354	R 1,238	R 1,343
District of Columbia	0	0	0	0	0	0
Florida	R 7,151	R 6,330	R 6,536	R 6,619	R 6,806	R 6,991
Georgia	R 13,951	R 14,085	R 13,982	R 13,862	R 14,270	R 13,854
Hawaii	0	0	0	0	0	0
Idaho	R 2,502	R 2,351	R 1,895	R 1,657	R 1,975	R 2,241
Illinois	R 26,739	R 24,506	R 20,992	R 18,500	R 19,944	R 18,988
Indiana	R 22,453	R 20,770	R 18,229	R 16,896	R 17,145	R 17,745
Iowa	R 9,725	R 8,384	R 7,775	R 7,636	R 8,064	R 7,792
Kansas	R 12,023	R 13,293	R 9,933	R 9,956	R 10,029	R 9,699
Kentucky	R 6,649	R 6,574	R 5,308	R 5,401	R 4,797	R 5,273
Louisiana	R 71,738	R 72,644	R 64,894	R 73,865	R 80,422	R 74,285
Maine	207	152	164	162	161	157
Maryland	R 4,674	R 3,916	R 3,517	R 3,615	R 3,825	R 3,603
Massachusetts	R 6,385	R 5,899	R 6,004	R 5,995	R 4,698	R 6,041
Michigan	R 28,339	R 23,810	R 20,895	R 21,660	R 20,153	R 22,387
Minnesota	R 8,883	R 6,997	R 6,241	R 6,348	R 6,436	R 6,144
Mississippi	R 8,480	R 8,514	R 8,372	R 7,936	R 8,302	R 8,251
Missouri	R 5,291	R 4,626	R 3,958	R 4,132	R 3,908	R 4,084
Montana	R 1,345	R 1,138	R 1,071	R 904	R 883	R 782
Nebraska	R 2,529	R 2,226	R 2,111	R 1,966	R 1,917	R 2,197
Nevada	R 777	R 903	R 658	R 732	R 718	R 783
New Hampshire	R 305	R 270	R 336	R 333	R 302	R 300
New Jersey	R 17,046	R 15,572	R 14,276	R 14,687	R 14,037	R 14,027
New Mexico	R 1,389	R 1,493	R 1,238	R 1,260	R 1,038	R 1,004
New York	R 12,875	R 11,595	R 11,241	R 10,137	R 10,465	R 10,805
North Carolina	R 7,862	R 7,852	R 7,226	R 7,160	R 6,663	R 7,088
North Dakota	525	484	408	390	438	420
Ohio	R 26,573	R 23,979	R 21,158	R 19,914	R 19,985	R 21,123
Oklahoma	R 14,394	R 13,263	R 13,890	R 14,236	R 14,509	R 13,932
Oregon	R 5,103	R 5,544	R 5,437	R 5,229	R 4,923	R 4,296
Pennsylvania	R 21,164	R 18,784	R 17,389	R 16,876	R 17,173	R 16,470
Rhode Island	R 3,734	R 4,140	R 3,730	R 3,688	R 4,209	R 4,241
South Carolina	R 8,337	R 7,589	R 7,766	R 7,702	R 7,890	R 8,110
South Dakota	R 412	330	278	246	356	323
Tennessee	R 10,956	R 10,577	R 9,712	R 9,933	R 10,197	R 9,366
Texas	R 137,499	R 142,094	R 147,054	R 143,664	R 146,392	R 138,927
Utah	R 4,615	R 3,175	R 2,522	R 2,512	R 2,538	R 2,771
Vermont	169	167	145	130	119	128
Virginia	R 5,951	R 4,648	R 5,732	R 6,018	R 7,366	R 4,886
Washington	R 6,962	R 6,744	R 5,964	R 6,214	R 5,717	R 5,900
West Virginia	R 3,973	R 3,751	R 3,435	R 3,426	R 3,209	R 3,403
Wisconsin	R 12,610	R 10,269	R 8,636	R 8,127	R 7,610	R 7,867
Wyoming	R 4,419	R 4,894	R 4,864	R 4,551	R 4,841	R 4,976
Total	R 640,954	R 607,784	R 585,706	R 581,772	R 587,203	R 578,480

See footnotes at end of table.

**Table 20. Natural Gas Deliveries to Industrial Consumers by State,
1991-1993 (Continued)**
(Million Cubic Feet)

State	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 13,894	R 13,624	R 15,147	R 13,986	R 14,469	154,825
Alaska	R 6,902	R 6,696	R 6,561	R 6,910	R 7,354	75,637
Arizona	R 1,543	R 1,642	R 1,723	R 1,588	R 1,731	19,204
Arkansas	R 9,868	R 9,864	R 10,513	R 9,941	R 10,967	104,850
California	R 60,503	R 32,593	R 49,236	R 55,101	R 64,014	602,619
Colorado	R 3,949	R 4,555	R 4,597	R 5,035	R 5,254	56,176
Connecticut	2,775	3,241	3,672	3,376	3,343	32,660
Delaware	R 1,501	R 1,548	R 1,430	R 1,409	R 1,362	16,147
District of Columbia	0	0	0	0	0	0
Florida	R 7,389	R 7,303	R 7,293	R 6,908	R 7,911	83,398
Georgia	R 14,505	R 14,863	R 15,505	R 14,390	R 14,755	167,098
Hawaii	0	0	0	0	0	0
Idaho *	R 2,286	R 2,243	R 2,464	R 2,244	R 2,490	26,662
Illinois	R 22,957	R 25,873	R 29,274	R 29,992	R 31,306	302,691
Indiana	R 18,817	R 19,954	R 22,941	R 22,081	R 23,685	227,769
Iowa	R 7,771	R 8,161	R 8,801	R 8,350	R 8,798	97,446
Kansas	R 9,303	R 10,097	R 11,009	R 10,345	R 12,169	123,517
Kentucky	R 5,449	R 6,023	R 6,715	R 6,823	R 7,446	71,637
Louisiana	R 78,686	R 87,445	R 87,311	R 81,119	R 88,023	R 924,661
Maine	172	219	203	159	127	2,207
Maryland	R 3,785	R 4,419	R 5,128	R 4,435	R 4,457	47,150
Massachusetts	R 6,524	R 7,528	R 4,978	R 5,545	R 4,746	54,750
Michigan	R 24,900	R 28,501	R 30,508	R 29,056	R 27,534	271,987
Minnesota	R 6,951	R 7,863	R 8,665	R 9,635	R 9,868	92,251
Mississippi	R 8,453	R 8,936	R 8,453	R 7,916	R 9,524	104,622
Missouri	R 4,268	5,027	R 5,533	R 5,483	6,332	57,186
Montana	R 841	R 870	R 861	R 1,096	R 1,147	9,873
Nebraska	R 1,710	R 2,172	R 2,015	R 2,350	R 2,243	24,758
Nevada	R 821	R 814	R 821	R 704	R 775	6,624
New Hampshire	R 312	R 422	R 315	R 331	R 308	3,457
New Jersey	R 13,014	R 14,133	R 13,905	R 13,898	R 13,736	100,768
New Mexico	R 1,323	R 1,563	R 1,468	R 1,819	R 1,942	19,346
New York	R 11,273	R 12,441	R 14,028	R 13,968	R 13,748	118,944
North Carolina	R 7,410	R 7,565	R 8,652	R 7,935	R 7,716	84,863
North Dakota	R 469	472	608	528	627	5,123
Ohio	R 22,201	R 26,498	R 26,339	R 28,592	R 29,149	279,750
Oklahoma	R 14,326	R 14,259	R 15,620	R 15,250	R 16,123	180,695
Oregon	R 3,796	R 3,926	R 4,352	R 5,507	R 5,497	55,049
Pennsylvania	R 18,523	R 20,700	R 22,389	R 22,868	R 22,674	231,375
Rhode Island	R 4,017	R 4,321	R 3,999	R 4,323	R 3,713	26,867
South Carolina	R 8,183	R 8,128	R 8,921	R 7,635	R 7,035	85,790
South Dakota	346	418	R 435	439	380	4,658
Tennessee	R 9,693	R 11,278	R 10,643	R 11,027	R 11,769	115,786
Texas	R 147,828	R 145,134	R 150,805	R 125,335	R 153,914	1,772,691
Utah	R 2,632	R 2,997	R 3,701	R 3,867	R 4,808	43,120
Vermont	149	141	223	200	190	1,717
Virginia	R 5,300	R 5,618	R 6,205	R 5,916	R 5,578	59,962
Washington	R 6,222	R 6,616	R 7,073	R 7,401	R 7,774	79,735
West Virginia	R 3,431	R 3,697	R 3,943	R 3,574	R 3,705	40,889
Wisconsin	R 8,838	R 11,327	R 13,296	R 13,093	R 14,585	128,798
Wyoming	R 4,667	R 4,366	R 4,605	R 4,618	R 4,569	33,174
Total	R 620,479	R 628,092	R 673,883	R 644,100	R 701,371	R 7,230,962

* Small volumes of natural gas representing onsystem sales to industrial consumers in Idaho are included in the annual total but not in monthly components. Deliveries for total year 1992 do not equal the sum of the twelve months.

R = Revised Data.

NA = Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-857.

Table 21. Natural Gas Deliveries to Electric Utility^a Consumers by State, 1991-1993
(Million Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993
Alabama	3,042	1,982	2,309	1,444	418	266
Alaska	15,876	16,276	19,465	1,790	2,027	2,105
Arizona	10,194	17,498	10,664	2,590	1,397	1,765
Arkansas	6,935	20,675	19,226	3,846	1,646	267
California	233,575	293,771	219,259	31,247	31,453	17,816
Colorado	2,940	2,656	2,765	470	398	278
Connecticut	331	1,730	1,816	194	13	8
Delaware	3,251	4,646	8,591	1,231	953	272
District of Columbia	0	0	0	0	0	0
Florida	101,880	125,405	116,998	19,776	18,980	16,262
Georgia	2,141	886	194	1,554	398	74
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	5,249	7,200	7,813	1,951	1,089	377
Indiana	3,131	5,593	4,505	611	245	273
Iowa	1,993	1,255	2,044	835	176	233
Kansas	11,035	8,662	21,377	5,219	2,037	846
Kentucky	127	155	137	24	22	19
Louisiana	121,800	160,737	146,185	36,385	26,473	13,920
Maine	0	0	0	0	0	0
Maryland	4,454	7,325	8,766	2,097	647	385
Massachusetts	16,556	21,061	22,191	4,400	2,606	2,513
Michigan	11,173	15,354	12,025	2,153	1,685	1,345
Minnesota	1,535	3,217	3,667	287	282	297
Mississippi	20,577	38,318	39,364	7,334	3,987	2,968
Missouri	1,894	1,847	8,072	1,305	224	54
Montana	99	104	149	34	13	13
Nebraska	1,117	1,001	1,856	454	114	137
Nevada	12,095	14,752	11,561	2,613	1,852	2,157
New Hampshire	136	0	0	3	36	91
New Jersey	20,662	25,109	41,176	11,574	4,252	1,278
New Mexico	16,692	13,059	16,649	3,149	2,710	2,067
New York	104,806	129,449	119,147	25,652	19,450	12,276
North Carolina	1,757	2,001	1,717	720	323	100
North Dakota	1	1	0	0	0	0
Ohio	1,987	2,065	1,718	399	149	135
Oklahoma	84,607	89,526	96,986	20,634	13,982	10,542
Oregon	5,193	6,227	1,770	0	15	0
Pennsylvania	5,613	1,834	1,335	NA	814	211
Rhode Island	134	380	910	52	82	0
South Carolina	1,268	1,561	5,672	806	311	24
South Dakota	17	5	128	1	1	2
Tennessee	1,122	215	75	904	132	15
Texas	590,664	551,576	578,785	135,348	111,153	74,821
Utah	3,844	4,140	2,536	368	422	507
Vermont	245	613	666	129	79	18
Virginia	10,687	8,402	5,336	2,350	1,229	174
Washington	4,566	1,724	52	4	0	0
West Virginia	70	135	72	7	13	4
Wisconsin	1,698	1,671	1,663	245	297	222
Wyoming	67	49	38	6	13	7
Total	1,448,833	1,611,850	1,567,430	333,405	254,601	167,146

See footnotes at end of table.

Table 21. Natural Gas Deliveries to Electric Utility^a Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	April 1993	March 1993	February 1993	January 1993	Total 1992	December 1992
Alabama	144	215	306	249	3,368	171
Alaska	2,155	2,482	2,535	2,781	28,953	2,721
Arizona	1,402	1,921	588	530	30,939	328
Arkansas	311	280	263	322	27,015	246
California	32,390	38,720	40,118	41,829	564,432	47,146
Colorado	354	514	394	531	5,019	526
Connecticut	10	20	62	25	2,100	28
Delaware	322	253	55	164	8,384	580
District of Columbia	0	0	0	0	0	0
Florida	12,549	12,232	11,459	10,621	202,576	10,390
Georgia	33	22	49	12	1,162	13
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	445	482	396	509	9,293	370
Indiana	437	457	450	658	7,772	824
Iowa	238	169	106	236	2,265	193
Kansas	649	920	670	694	13,981	809
Kentucky	27	11	12	12	269	20
Louisiana	10,869	14,087	9,246	10,820	254,922	11,705
Maine	0	0	0	0	0	0
Maryland	187	560	349	229	11,575	430
Massachusetts	3,815	2,955	128	138	38,341	227
Michigan	925	1,380	1,904	1,781	24,908	1,727
Minnesota	185	164	144	176	4,906	231
Mississippi	1,335	2,114	1,249	1,591	54,180	1,625
Missouri	63	113	75	59	2,351	67
Montana	4	15	16	4	220	8
Nebraska	148	111	48	104	1,903	136
Nevada	1,695	2,305	926	547	24,355	436
New Hampshire	6	0	0	0	633	0
New Jersey	329	1,508	1,383	338	38,772	681
New Mexico	2,811	2,793	1,699	1,463	22,486	1,408
New York	14,335	12,983	9,589	10,543	208,731	10,640
North Carolina	99	141	205	167	3,159	169
North Dakota	0	0	0	0	1	0
Ohio	102	417	432	352	2,956	53
Oklahoma	10,485	10,268	9,249	9,447	148,980	10,120
Oregon	0	1,990	2,074	1,113	14,264	977
Pennsylvania	337	1,133	1,156	757	3,100	262
Rhode Island	0	0	0	0	469	0
South Carolina	21	69	20	17	1,795	5
South Dakota	0	10	2	0	48	9
Tennessee	14	15	21	20	291	25
Texas	71,510	75,318	59,828	62,686	968,165	88,751
Utah	592	697	557	700	6,576	542
Vermont	15	1	1	1	801	1
Virginia	1,317	1,776	1,978	1,862	10,936	839
Washington	683	1,836	1,896	147	5,385	9
West Virginia	11	6	19	10	201	8
Wisconsin	343	318	130	143	2,584	146
Wyoming	7	15	8	10	83	7
Total	173,709	193,795	161,778	164,400	2,765,608	175,608

See footnotes at end of table.

Table 21. Natural Gas Deliveries to Electric Utility^a Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	November 1992	October 1992	September 1992	August 1992	July 1992	June 1992
Alabama	382	234	305	296	322	307
Alaska	2,756	2,514	2,311	2,374	2,342	2,204
Arizona	597	2,631	4,607	5,277	3,999	2,778
Arkansas	209	733	2,324	2,828	4,145	3,788
California	50,027	53,026	53,989	66,474	51,011	36,692
Colorado	396	493	469	479	570	355
Connecticut	18	19	14	291	407	316
Delaware	586	581	851	1,140	971	1,034
District of Columbia	0	0	0	0	0	0
Florida	12,389	12,525	21,038	20,829	21,946	21,623
Georgia	12	65	66	120	654	75
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	279	301	554	589	854	998
Indiana	525	158	301	370	488	760
Iowa	207	200	135	277	262	208
Kansas	534	546	1,395	2,036	2,833	1,388
Kentucky	23	19	23	28	23	28
Louisiana	13,510	18,382	23,855	26,733	33,952	30,520
Maine	0	0	0	0	0	0
Maryland	469	665	1,228	1,457	3,004	1,367
Massachusetts	3,903	3,683	4,664	4,803	7,643	5,418
Michigan	1,994	1,675	1,738	2,421	1,449	1,473
Minnesota	336	210	440	473	509	491
Mississippi	1,843	1,616	5,419	5,359	7,189	5,227
Missouri	85	67	86	200	1,025	131
Montana	47	32	10	20	29	20
Nebraska	191	210	280	85	153	139
Nevada	808	1,968	2,761	3,629	3,491	3,091
New Hampshire	0	16	499	118	0	0
New Jersey	1,209	1,562	3,860	6,351	12,179	3,330
New Mexico	1,440	1,803	2,183	2,594	2,532	1,911
New York	11,688	13,307	21,641	22,006	25,124	23,875
North Carolina	165	127	336	361	614	341
North Dakota	0	0	0	0	0	0
Ohio	90	217	243	288	264	173
Oklahoma	8,514	9,300	15,806	15,714	17,018	14,312
Oregon	1,373	1,789	2,045	1,854	1,437	661
Pennsylvania	148	262	274	320	824	345
Rhode Island	0	0	11	78	80	90
South Carolina	82	22	42	82	525	202
South Dakota	27	2	1	5	0	1
Tennessee	10	18	15	7	40	35
Texas	72,018	80,276	95,796	99,748	120,114	97,150
Utah	138	665	542	550	517	509
Vermont	28	122	2	34	186	160
Virginia	11	25	714	945	2,408	1,014
Washington	4	426	523	2,698	185	1,028
West Virginia	9	6	18	24	26	47
Wisconsin	207	134	249	178	219	259
Wyoming	8	8	6	5	5	8
Total	189,296	212,640	273,670	302,544	333,567	265,882

See footnotes at end of table.

Table 21. Natural Gas Deliveries to Electric Utility^a Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	350	216	315	204	267	4,081
Alaska	2,116	2,410	2,449	2,258	2,498	31,330
Arizona	3,300	2,300	1,953	1,719	1,451	23,282
Arkansas	3,881	4,068	2,403	2,080	311	27,903
California	41,687	43,478	42,382	39,134	39,387	449,014
Colorado	357	243	494	309	328	5,715
Connecticut	131	391	424	28	34	4,702
Delaware	598	593	526	467	456	14,354
District of Columbia	0	0	0	0	0	0
Florida	19,942	18,239	17,249	14,042	12,365	201,319
Georgia	24	106	14	10	3	838
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	955	943	1,720	860	869	12,865
Indiana	1,056	605	535	1,030	1,119	10,043
Iowa	155	195	157	182	96	3,671
Kansas	1,385	910	717	694	735	36,122
Kentucky	16	23	16	14	35	227
Louisiana	26,127	22,298	20,481	13,176	14,182	254,245
Maine	0	0	0	0	0	0
Maryland	974	772	694	244	270	16,059
Massachusetts	3,630	3,795	463	54	59	39,133
Michigan	2,126	2,516	3,171	2,574	2,045	23,736
Minnesota	352	316	508	703	337	5,870
Mississippi	6,629	5,878	5,152	5,439	2,804	62,409
Missouri	176	79	186	143	107	12,709
Montana	26	11	7	4	6	268
Nebraska	111	211	213	76	97	3,689
Nevada	2,681	2,152	1,499	1,093	744	21,738
New Hampshire	0	0	0	0	0	0
New Jersey	1,794	3,878	2,975	487	466	61,874
New Mexico	2,444	1,981	1,288	1,306	1,597	28,100
New York	20,936	18,809	17,363	13,500	9,843	211,640
North Carolina	180	159	206	233	269	3,020
North Dakota	0	0	0	1	0	1
Ohio	339	409	309	259	312	3,237
Oklahoma	13,004	13,652	12,412	9,258	9,870	167,214
Oregon	0	0	0	2,005	2,124	10,856
Pennsylvania	129	138	178	126	94	2,037
Rhode Island	78	90	43	0	0	1,638
South Carolina	10	13	793	3	15	9,823
South Dakota	1	0	1	0	2	177
Tennessee	33	37	48	5	17	211
Texas	76,427	74,644	66,472	54,754	62,015	1,005,051
Utah	627	642	647	573	626	5,190
Vermont	122	122	20	1	2	1,091
Virginia	909	1,036	805	1,111	1,118	9,471
Washington	195	293	6	7	11	139
West Virginia	28	7	5	5	16	140
Wisconsin	269	345	351	116	113	2,706
Wyoming	4	12	6	5	9	76
Total	236,316	229,012	207,656	170,293	169,125	2,789,014

^a Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

Notes: Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-759.

Table 22. Natural Gas Deliveries to All Consumers by State, 1991-1993
(Million Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993
Alabama	180,279	151,444	137,433	18,003	R 16,792	R 18,470
Alaska	81,925	85,845	85,421	10,065	R 9,176	R 10,344
Arizona	58,491	64,944	61,860	6,688	R 5,857	R 6,803
Arkansas	124,247	132,853	124,001	14,172	R 12,546	R 12,998
California	1,039,277	1,120,587	1,070,152	126,878	R 117,559	R 112,908
Colorado	175,581	140,012	149,791	12,575	R 14,790	R 18,440
Connecticut	71,085	71,169	62,591	4,698	4,901	6,095
Delaware	24,388	23,724	26,367	3,182	2,850	2,632
District of Columbia	22,726	22,551	21,156	1,090	1,265	1,955
Florida	193,097	211,327	198,425	31,533	R 30,864	R 28,777
Georgia	207,127	201,690	185,331	21,434	R 19,583	R 21,068
Hawaii	1,597	1,595	1,590	220	231	213
Idaho	32,568	27,067	28,927	2,840	3,029	3,530
Illinois	628,558	592,236	582,074	37,522	R 38,542	R 48,068
Indiana	314,103	288,956	272,222	24,110	R 26,165	R 29,387
Iowa	147,134	132,506	136,405	10,780	R 11,735	R 13,485
Kansas	189,530	159,849	182,668	22,714	R 17,117	R 19,246
Kentucky	109,038	102,007	97,081	7,260	R 8,333	R 8,617
Louisiana	630,662	792,517	737,670	109,821	R 93,514	R 79,003
Maine	2,852	3,311	2,940	205	179	226
Maryland	111,443	113,855	105,739	8,909	R 8,676	R 9,765
Massachusetts	184,255	187,108	164,282	15,948	R 16,486	R 19,701
Michigan	562,879	546,016	504,263	38,414	R 43,655	R 52,883
Minnesota	188,844	178,985	182,268	11,217	R 13,572	R 15,490
Mississippi	119,826	128,274	127,110	18,709	R 14,925	R 14,729
Missouri	179,840	152,348	164,090	9,995	R 10,290	R 15,888
Montana	28,257	22,675	25,154	2,030	R 1,869	R 2,451
Nebraska	80,686	60,212	69,810	5,435	R 5,167	R 6,122
Nevada	57,151	42,212	39,583	7,455	R 7,057	R 7,583
New Hampshire	11,168	10,881	9,324	639	749	1,111
New Jersey	356,382	339,980	294,876	36,709	29,678	31,501
New Mexico	65,581	61,413	65,228	6,836	R 6,571	R 6,812
New York	602,794	618,811	543,703	56,145	R 55,263	R 55,661
North Carolina	113,414	107,074	97,107	9,694	R 10,613	R 11,456
North Dakota	17,783	15,832	16,180	1,006	1,179	1,512
Ohio	515,130	500,583	466,549	26,466	R 39,320	R 42,332
Oklahoma	270,327	260,106	274,216	37,774	R 30,976	R 30,924
Oregon	76,949	65,116	67,290	6,571	6,694	8,225
Pennsylvania	418,876	404,974	377,261	NA	R 33,049	R 35,893
Rhode Island	46,674	49,197	30,905	4,685	R 4,882	R 5,487
South Carolina	83,646	83,182	77,319	9,483	R 9,552	R 9,259
South Dakota	17,878	14,634	15,884	933	1,054	R 1,485
Tennessee	143,096	138,514	130,448	12,845	R 11,173	R 15,132
Texas	1,972,833	1,805,268	1,806,060	326,750	R 289,348	R 243,669
Utah	78,607	66,787	73,538	5,199	R 6,081	7,800
Vermont	4,808	5,084	4,454	379	380	438
Virginia	144,530	122,487	104,506	16,708	R 12,478	R 10,309
Washington	123,226	97,991	104,511	10,410	R 10,932	R 13,570
West Virginia	67,636	65,428	58,020	5,257	R 5,833	R 6,795
Wisconsin	215,632	200,493	198,749	12,127	R 14,647	R 17,976
Wyoming	45,031	44,505	32,573	5,184	R 5,012	R 6,152
Total	11,117,468	10,836,218	10,395,104	1,203,976	R 1,142,188	R 1,150,197

See footnotes at end of tables.

Table 22. Natural Gas Deliveries to All Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	April 1993	March 1993	February 1993	January 1993	Total 1992	December 1992
Alabama	23,361	28,481	27,321	27,851	247,295	25,875
Alaska	11,527	12,283	13,443	15,108	145,541	14,680
Arizona	7,888	11,052	9,239	11,189	108,234	10,994
Arkansas	17,589	21,788	21,311	23,843	210,653	20,728
California	131,584	161,093	189,324	199,930	1,923,573	199,920
Colorado	24,183	32,278	34,279	39,036	223,656	33,143
Connecticut	10,048	14,381	18,223	14,740	110,715	13,243
Delaware	3,833	4,383	3,818	3,910	38,604	4,005
District of Columbia	3,158	4,982	5,209	5,088	32,890	4,135
Florida	25,794	26,562	25,346	24,221	343,521	23,862
Georgia	27,838	37,818	39,772	39,794	335,484	40,414
Hawaii	225	230	242	236	2,695	234
Idaho	4,256	5,780	6,353	6,789	45,835	6,119
Illinois	84,599	127,983	138,006	151,839	981,991	140,871
Indiana	42,797	61,168	63,379	67,096	478,765	61,989
Iowa	20,005	27,943	29,976	33,211	223,992	30,340
Kansas	25,517	32,681	34,734	37,520	270,284	34,037
Kentucky	14,102	21,883	24,630	24,212	171,218	23,317
Louisiana	83,399	90,180	84,210	90,574	1,271,064	95,726
Maine	405	542	643	652	5,129	561
Maryland	14,160	23,593	23,913	22,426	178,881	20,908
Massachusetts	28,688	36,093	34,489	32,850	293,238	27,879
Michigan	80,931	112,353	116,586	118,057	862,217	103,987
Minnesota	25,245	36,627	40,247	46,446	293,873	40,563
Mississippi	15,877	19,025	17,426	19,136	201,221	18,686
Missouri	24,833	37,569	37,994	43,272	238,435	35,337
Montana	3,752	5,549	5,287	7,319	40,671	8,448
Nebraska	11,692	14,646	15,195	22,429	104,258	15,177
Nevada	8,566	9,222	7,878	9,390	67,912	8,663
New Hampshire	1,705	2,245	2,359	2,361	16,771	1,756
New Jersey	50,161	69,180	72,918	86,236	542,695	80,941
New Mexico	9,476	11,053	11,333	13,499	98,881	12,300
New York	87,239	118,222	116,377	113,887	952,161	101,107
North Carolina	16,490	21,815	21,197	22,149	173,156	19,783
North Dakota	2,511	3,383	3,586	4,606	25,397	3,592
Ohio	73,165	108,821	114,755	110,270	799,093	102,668
Oklahoma	36,806	43,651	42,702	47,495	425,195	42,892
Oregon	9,787	14,168	14,890	16,613	115,469	13,388
Pennsylvania	57,915	87,765	90,643	85,337	640,593	76,952
Rhode Island	6,833	8,388	8,381	8,017	77,476	7,158
South Carolina	12,000	15,180	13,789	14,382	135,157	12,911
South Dakota	2,513	3,492	3,746	4,656	24,454	3,807
Tennessee	19,743	27,608	27,107	29,487	225,275	27,075
Texas	263,722	286,382	265,219	295,743	3,101,526	281,632
Utah	10,099	14,043	16,641	18,744	108,755	16,360
Vermont	658	976	1,003	975	7,598	775
Virginia	19,033	27,271	30,286	28,446	192,932	22,720
Washington	16,769	22,830	23,248	25,468	166,092	20,827
West Virginia	9,844	13,771	13,521	12,615	104,089	12,180
Wisconsin	32,018	43,020	44,657	51,188	327,599	44,320
Wyoming	6,462	6,266	7,409	8,547	75,044	7,758
Total	1,520,579	1,969,418	2,012,239	2,118,873	17,785,833	1,950,542

See footnotes at end of tables.

Table 22. Natural Gas Deliveries to All Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	November 1992	October 1992	September 1992	August 1992	July 1992	June 1992
Alabama	20,820	17,250	18,309	15,994	16,511	17,043
Alaska	13,463	13,323	9,049	9,181	10,889	10,355
Arizona	5,664	8,868	8,640	9,178	8,263	7,277
Arkansas	15,335	13,222	14,227	14,288	15,530	15,364
California	158,481	137,081	147,435	180,041	138,193	130,858
Colorado	19,036	12,212	10,084	9,145	10,006	11,545
Connecticut	9,619	6,718	4,975	4,991	5,100	5,480
Delaware	3,502	2,919	2,829	2,825	2,571	2,877
District of Columbia	2,416	1,395	1,100	1,093	1,187	1,394
Florida	23,814	22,494	31,059	30,958	32,201	32,431
Georgia	31,537	22,835	19,721	19,466	20,829	20,082
Hawaii	221	210	221	215	218	230
Idaho	4,415	3,244	2,538	2,171	2,553	2,830
Illinois	104,726	85,944	41,922	36,285	37,000	37,856
Indiana	47,066	33,542	24,822	22,532	22,927	25,135
Iowa	24,125	14,953	11,228	10,838	10,972	11,813
Kansas	23,528	19,422	16,258	17,192	18,403	16,510
Kentucky	17,733	12,206	7,952	8,003	7,213	8,268
Louisiana	91,729	94,825	92,270	103,989	117,997	108,857
Maine	484	309	249	236	264	274
Maryland	15,894	11,110	8,387	8,727	10,535	9,331
Massachusetts	25,875	18,700	16,790	16,884	18,866	19,048
Michigan	80,909	56,101	37,499	37,701	35,356	41,669
Minnesota	31,602	18,748	12,333	11,642	11,892	12,233
Mississippi	13,740	12,051	15,484	14,978	17,272	15,329
Missouri	21,055	11,679	9,009	9,007	9,713	10,600
Montana	4,455	3,085	2,330	1,875	1,761	1,720
Nebraska	11,289	6,974	5,197	5,428	5,483	4,977
Nevada	3,833	4,579	4,899	5,714	5,896	5,514
New Hampshire	1,346	868	1,161	759	640	727
New Jersey	47,235	34,665	28,937	30,937	36,895	28,817
New Mexico	7,091	6,002	5,851	6,218	5,700	5,208
New York	72,124	56,395	52,470	51,248	55,424	58,065
North Carolina	14,484	11,898	10,047	9,863	9,704	10,463
North Dakota	2,529	1,518	1,057	866	977	1,029
Ohio	75,938	54,217	33,930	31,899	32,638	36,649
Oklahoma	30,238	26,249	32,711	32,953	34,883	32,332
Oregon	10,121	9,455	8,993	8,391	7,755	6,614
Pennsylvania	58,902	43,339	29,191	27,230	28,178	29,383
Rhode Island	6,108	5,639	4,698	4,667	5,376	5,600
South Carolina	11,513	9,408	9,092	9,051	9,859	9,853
South Dakota	2,810	1,490	918	789	912	947
Tennessee	19,403	14,849	12,760	12,672	13,194	12,854
Texas	246,108	242,627	261,956	263,931	288,393	255,732
Utah	9,926	6,188	4,790	4,689	4,671	5,260
Vermont	613	561	277	288	436	435
Virginia	16,229	11,255	9,816	10,424	13,355	9,960
Washington	14,620	11,646	9,531	11,383	8,387	10,143
West Virginia	8,194	7,138	5,182	4,967	4,730	5,554
Wisconsin	33,967	22,141	14,068	12,581	12,191	13,793
Wyoming	6,257	5,892	5,517	5,103	5,432	5,723
Total	1,522,779	1,227,238	1,117,381	1,131,083	1,174,910	1,131,621

See footnotes at end of tables.

Table 22. Natural Gas Deliveries to All Consumers by State, 1991-1993 (Continued)
(Million Cubic Feet)

State	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	18,471	21,138	23,738	27,290	27,252	228,765
Alaska	11,827	12,386	13,093	13,473	14,042	141,426
Arizona	7,870	8,607	10,183	10,538	12,427	101,473
Arkansas	16,961	19,874	19,929	22,606	22,588	199,379
California	157,730	131,762	162,890	179,643	219,510	1,847,949
Colorado	12,943	19,552	24,198	29,194	32,574	228,283
Connecticut	7,102	10,857	13,813	14,349	14,468	101,380
Delaware	2,935	3,626	3,801	4,049	3,866	41,944
District of Columbia	2,005	3,594	4,304	5,085	4,984	30,836
Florida	31,649	30,022	29,876	27,859	26,889	336,895
Georgia	22,350	26,709	34,065	35,884	41,990	315,634
Hawaii	224	229	222	231	241	2,694
Idaho	3,178	3,616	4,242	4,772	5,877	46,467
Illinois	55,272	85,166	113,581	120,366	142,995	976,377
Indiana	30,857	40,824	50,877	55,395	62,941	452,690
Iowa	13,137	19,096	22,389	26,879	28,419	226,533
Kansas	18,212	22,495	23,989	27,840	32,400	293,035
Kentucky	9,891	12,836	18,418	20,106	25,476	165,028
Louisiana	109,381	116,654	116,184	107,518	116,126	1,258,960
Maine	395	545	640	617	577	4,789
Maryland	11,158	16,084	20,612	22,644	23,491	170,561
Massachusetts	23,079	31,756	30,370	33,402	30,588	250,028
Michigan	58,977	85,208	102,761	109,277	112,769	798,489
Minnesota	16,041	26,087	33,315	37,318	42,100	301,144
Mississippi	17,383	18,727	19,214	20,500	19,869	210,531
Missouri	13,446	21,751	26,101	33,119	37,617	253,765
Montana	2,273	3,182	3,587	4,745	5,408	41,401
Nebraska	5,622	8,555	9,903	12,142	13,529	113,409
Nevada	5,317	5,895	6,139	6,281	7,371	64,465
New Hampshire	1,149	1,817	1,946	2,350	2,251	14,094
New Jersey	34,881	52,289	60,519	63,790	62,991	460,521
New Mexico	6,969	8,839	9,327	11,946	13,625	102,206
New York	69,561	95,837	112,831	116,379	110,914	869,100
North Carolina	12,017	15,528	18,034	20,600	20,728	160,172
North Dakota	1,615	2,411	2,818	3,364	3,617	26,195
Ohio	47,271	74,144	92,646	103,925	113,310	755,118
Oklahoma	32,334	36,829	38,920	40,472	44,337	456,705
Oregon	6,215	7,359	8,754	13,200	15,220	114,557
Pennsylvania	39,434	59,291	76,315	84,289	88,085	601,688
Rhode Island	6,217	7,729	7,948	8,543	7,785	54,148
South Carolina	10,294	11,871	14,109	13,866	13,529	131,020
South Dakota	1,444	2,242	2,644	3,109	3,335	25,529
Tennessee	14,348	20,379	21,762	26,715	29,261	211,309
Texas	247,119	248,887	254,408	232,147	278,583	3,180,917
Utah	5,887	7,978	11,082	14,524	17,186	118,164
Vermont	534	778	930	981	989	7,069
Virginia	12,766	17,060	20,949	23,823	24,574	167,709
Washington	11,137	13,824	15,652	18,213	20,635	167,901
West Virginia	6,876	10,065	11,262	13,376	13,564	94,659
Wisconsin	19,112	30,455	38,500	40,566	45,875	327,124
Wyoming	5,723	5,997	6,579	7,194	7,858	54,348
Total	1,277,970	1,538,641	1,770,147	1,876,291	2,066,637	17,304,582

R = Revised Data.

NA = Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. Deliveries for total year 1991 and 1992 may not equal the sum of the twelve months. Gas volumes delivered for use as vehicle fuel are included in the annual total for commercial deliveries but not in the monthly components. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Sources: Form EIA-857 and Form EIA-759.

Table 23. Average City Gate Price by State, 1991-1993
(Dollars per Thousand Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993	April 1993	March 1993
Alabama	3.44	3.01	3.14	3.83	3.98	R 3.88	3.38	3.16
Alaska	.33	.34	.33	.33	.33	.33	.33	.33
Arizona	2.54	2.16	2.47	3.03	2.92	3.23	2.00	2.50
Arkansas	2.56	2.61	2.52	2.49	2.44	2.65	2.60	2.63
California	2.82	2.64	2.75	2.81	R 2.84	2.97	2.86	2.90
Colorado	2.81	2.79	2.84	3.35	3.59	3.02	2.78	2.57
Connecticut	3.95	3.65	3.49	5.37	4.61	5.51	4.32	3.31
Delaware	3.26	2.61	2.48	3.15	3.52	3.52	3.33	3.22
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.78	2.39	2.48	2.57	2.81	2.89	2.90	2.64
Georgia	3.67	3.10	3.52	4.06	4.25	4.62	3.44	R 3.25
Hawaii	5.94	7.57	8.64	5.46	5.62	5.72	5.69	5.46
Idaho	2.10	2.19	2.17	2.92	2.39	2.24	1.89	2.12
Illinois	3.40	2.97	2.92	3.28	3.18	3.40	3.43	R 3.26
Indiana	3.13	2.86	3.09	3.40	3.42	3.74	3.14	2.91
Iowa	3.20	2.90	2.64	3.52	R 3.60	4.28	3.55	2.94
Kansas	2.81	2.48	2.62	2.74	2.37	2.48	2.54	R 3.18
Kentucky	3.23	2.87	2.95	3.00	3.43	3.94	3.26	3.24
Louisiana	2.67	2.21	2.63	2.69	R 2.77	3.23	R 2.78	R 2.59
Maine	3.76	2.90	3.01	4.77	4.67	3.67	3.31	3.66
Maryland	3.44	2.88	2.89	5.41	5.85	4.98	3.80	2.90
Massachusetts	4.00	3.36	3.31	4.77	4.81	4.42	3.82	3.94
Michigan	2.92	2.97	3.06	2.60	2.77	3.17	2.82	2.84
Minnesota	3.06	2.59	2.53	3.48	3.46	3.82	2.98	2.94
Mississippi	2.75	2.32	2.57	2.89	3.00	3.41	2.89	2.61
Missouri	3.19	2.70	2.86	3.63	R 3.81	3.89	2.91	R 2.96
Montana	3.20	3.73	3.74	4.44	4.47	4.11	3.16	2.92
Nebraska	3.00	2.65	2.71	3.37	3.49	3.94	3.19	2.78
Nevada	2.88	2.29	2.37	3.74	3.55	3.73	3.29	2.66
New Hampshire	3.70	3.46	3.42	4.55	4.46	3.86	3.42	3.68
New Jersey	3.49	2.96	3.05	4.69	R 4.18	4.26	3.44	3.27
New Mexico	2.48	2.03	2.57	1.86	2.36	2.71	3.04	2.54
New York	3.29	2.74	2.89	3.49	R 3.73	R 4.08	3.64	R 3.11
North Carolina	3.18	2.60	2.68	3.74	3.57	3.65	3.24	3.01
North Dakota	3.27	3.38	3.48	4.67	4.21	4.05	3.24	3.01
Ohio	3.62	3.01	3.08	3.82	4.23	4.27	4.28	3.44
Oklahoma	2.39	2.13	1.97	1.80	2.10	2.54	2.26	2.44
Oregon	2.32	2.33	2.37	2.51	2.83	2.74	2.18	2.16
Pennsylvania	3.35	3.02	3.23	NA	R 4.70	4.19	3.57	3.15
Rhode Island	4.09	3.55	3.63	7.73	6.17	6.59	4.09	3.34
South Carolina	3.50	2.99	2.98	4.25	3.93	4.20	3.48	R 3.09
South Dakota	3.32	2.99	3.11	4.42	4.31	4.31	3.36	3.12
Tennessee	3.12	2.57	2.63	3.34	3.39	R 3.80	3.29	R 3.07
Texas	3.24	2.84	2.88	3.04	R 3.14	3.36	3.09	R 3.16
Utah	3.31	4.17	3.98	2.89	NA	5.61	3.74	3.49
Vermont	2.92	2.85	2.83	3.78	3.99	3.85	3.03	2.57
Virginia	3.27	2.54	2.73	3.29	3.43	3.73	3.36	R 3.14
Washington	2.18	1.78	1.86	2.37	2.56	R 2.52	1.85	2.06
West Virginia	3.03	2.80	3.53	5.73	R 4.77	1.94	R 3.32	R 2.94
Wisconsin	3.59	3.16	3.11	5.71	5.65	5.43	3.86	3.15
Wyoming	2.89	3.05	3.20	3.05	3.04	3.77	3.07	2.89
Total	3.18	2.81	2.88	3.34	R 3.45	R 3.58	3.24	3.06

See footnotes at end of table.

Table 23. Average City Gate Price by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	February 1993	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992
Alabama	R 3.37	R 3.33	3.21	3.43	3.44	3.91	3.67	3.65
Alaska	.33	.33	.34	.33	.33	.33	.33	.34
Arizona	2.28	2.63	2.33	2.55	2.69	2.64	R 2.45	2.43
Arkansas	2.45	2.62	R 2.60	R 2.64	2.71	2.49	2.41	2.38
California	2.69	2.74	2.72	2.75	2.91	2.92	2.80	2.82
Colorado	2.67	2.80	2.86	2.81	2.74	2.98	3.67	3.61
Connecticut	3.27	3.70	3.73	3.59	3.80	4.02	4.13	4.23
Delaware	3.03	3.13	2.83	3.53	3.93	3.74	2.74	1.78
District of Columbia	--	--	--	--	--	--	--	--
Florida	R 2.63	R 2.90	2.61	3.07	3.19	3.16	2.64	2.58
Georgia	3.48	3.79	3.28	3.51	3.27	3.93	3.70	3.55
Hawaii	7.01	6.49	7.72	7.59	7.81	8.17	7.87	8.27
Idaho	1.97	2.03	2.18	2.06	1.99	2.37	2.47	3.61
Illinois	3.48	3.75	R 3.20	3.53	3.47	3.60	3.36	3.19
Indiana	2.83	3.04	3.08	3.26	3.33	3.69	3.03	3.52
Iowa	2.81	3.02	3.20	3.21	3.44	3.97	3.89	3.86
Kansas	2.66	3.06	2.50	2.48	2.79	2.33	2.31	2.49
Kentucky	3.10	3.13	3.02	3.26	3.28	3.53	2.76	2.74
Louisiana	R 2.38	2.59	R 2.48	R 2.82	R 2.83	R 3.24	R 2.70	R 2.60
Maine	3.53	3.69	3.17	4.00	3.41	3.45	2.80	4.19
Maryland	2.89	3.02	3.20	3.17	3.66	3.91	4.58	4.83
Massachusetts	3.53	R 3.81	R 3.52	R 3.89	3.95	3.88	3.40	3.24
Michigan	2.90	3.43	3.04	3.16	3.33	3.31	3.02	2.95
Minnesota	2.78	2.97	2.92	3.32	3.31	3.57	3.28	3.34
Mississippi	2.44	2.62	R 2.62	R 2.97	R 3.07	R 3.59	R 2.99	R 2.81
Missouri	2.87	3.37	R 2.86	2.78	R 3.16	R 3.56	R 3.52	R 3.39
Montana	2.96	2.98	3.45	2.91	3.01	3.19	3.85	4.38
Nebraska	2.78	2.92	R 2.91	3.09	3.15	3.55	3.47	3.23
Nevada	2.36	2.57	2.37	2.40	2.43	2.45	2.67	2.92
New Hampshire	3.30	3.78	3.58	3.96	4.02	3.70	3.16	3.83
New Jersey	R 2.82	R 3.32	3.29	3.32	4.32	3.95	3.97	3.38
New Mexico	2.34	2.45	2.25	2.55	2.66	2.99	2.30	2.13
New York	R 2.91	R 3.10	3.01	3.34	3.47	3.75	3.37	3.15
North Carolina	2.83	3.09	2.88	3.22	3.32	3.38	3.26	3.04
North Dakota	2.97	3.11	3.28	3.06	3.09	3.16	3.38	3.79
Ohio	3.43	3.40	3.26	3.69	3.51	3.84	3.60	3.71
Oklahoma	R 2.40	2.50	2.22	2.38	2.52	2.44	1.84	1.79
Oregon	2.26	2.22	2.34	2.39	2.36	2.35	2.27	2.41
Pennsylvania	R 2.93	3.02	3.29	3.37	3.61	3.82	4.20	4.32
Rhode Island	3.12	3.57	3.82	3.67	4.49	4.45	4.58	4.87
South Carolina	3.27	3.39	3.23	3.56	3.56	3.74	3.48	3.38
South Dakota	2.98	3.07	3.10	3.29	3.18	2.83	3.25	4.09
Tennessee	2.81	2.95	2.89	3.20	R 3.40	3.66	3.41	3.41
Texas	R 3.21	R 3.44	R 3.06	R 3.47	R 3.47	R 3.61	3.01	R 2.94
Utah	2.89	2.94	4.09	3.00	3.95	4.71	9.36	7.45
Vermont	2.53	2.52	2.93	2.60	2.86	2.95	4.06	4.17
Virginia	3.18	3.24	2.91	3.32	3.83	3.70	3.26	3.63
Washington	2.11	2.18	1.90	2.16	1.98	2.00	1.99	1.93
West Virginia	R 2.94	R 2.96	3.24	3.36	R 3.99	4.59	6.20	5.74
Wisconsin	R 2.95	3.06	3.36	3.17	3.48	3.97	4.47	4.94
Wyoming	2.63	2.71	2.90	2.69	2.55	2.66	3.01	3.32
Total	2.94	R 3.11	3.01	3.17	3.33	R 3.50	R 3.23	3.18

See footnotes at end of table.

Table 23. Average City Gate Price by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	July 1992	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 3.25	3.28	3.01	2.80	2.68	3.06	3.16	3.11
Alaska	.33	.33	.33	.33	.34	.36	.36	.32
Arizona	2.70	2.31	1.57	1.98	2.12	2.08	2.34	2.45
Arkansas	2.41	2.53	2.43	2.38	2.62	2.61	2.87	2.45
California	2.73	2.59	2.47	2.88	2.37	2.56	2.87	2.80
Colorado	3.32	3.23	3.45	2.75	2.67	2.60	2.67	2.85
Connecticut	4.12	4.96	4.76	3.75	3.18	3.37	3.39	3.50
Delaware	2.72	2.90	2.59	2.55	2.62	1.81	3.01	2.54
District of Columbia	—	—	—	—	—	—	—	—
Florida	2.41	2.37	2.29	2.39	2.34	2.31	2.56	2.51
Georgia	3.10	3.21	2.90	2.57	2.61	3.79	3.27	3.38
Hawaii	8.08	7.55	7.60	7.64	7.40	7.22	7.53	8.74
Idaho	2.52	2.57	2.55	1.94	2.28	2.17	1.96	2.14
Illinois	R 3.08	2.89	2.72	2.97	2.71	2.99	3.52	2.91
Indiana	2.97	3.16	2.71	2.57	R 2.75	2.79	3.07	3.05
Iowa	4.16	4.12	3.77	2.48	2.72	2.58	2.64	2.73
Kansas	2.30	2.07	2.32	2.28	2.09	2.74	2.73	2.62
Kentucky	2.57	2.98	2.89	2.89	2.85	2.89	2.95	2.83
Louisiana	R 2.26	R 2.30	R 2.42	R 2.25	R 2.06	R 1.93	R 2.34	2.57
Maine	2.72	2.82	2.66	2.44	2.59	3.39	3.45	3.00
Maryland	5.04	4.46	3.71	2.88	2.45	2.41	2.74	3.05
Massachusetts	3.35	3.77	3.66	2.91	2.97	3.47	3.67	3.37
Michigan	2.78	2.82	2.89	2.93	3.19	3.11	3.21	3.08
Minnesota	3.12	3.25	3.02	2.26	2.47	2.30	2.68	2.63
Mississippi	R 2.39	R 2.59	R 2.50	R 2.32	R 2.14	R 2.06	R 2.41	2.55
Missouri	R 2.74	R 3.20	R 2.85	2.60	2.59	R 2.46	2.88	2.92
Montana	4.80	4.51	4.03	3.63	3.58	3.57	3.57	3.69
Nebraska	3.18	3.28	R 3.07	2.47	2.46	R 2.36	2.71	2.75
Nevada	2.72	2.68	2.65	2.09	2.20	2.13	2.20	2.33
New Hampshire	3.27	3.62	3.31	2.92	2.93	4.00	3.88	3.40
New Jersey	3.40	3.17	3.19	2.66	2.58	2.81	3.15	3.14
New Mexico	2.09	2.48	2.09	2.40	1.82	1.92	2.05	2.49
New York	2.92	3.11	2.91	2.67	2.57	2.49	2.88	2.92
North Carolina	3.13	3.13	2.85	2.56	2.18	2.37	2.77	2.69
North Dakota	4.16	3.55	3.36	3.21	3.20	3.34	3.44	3.49
Ohio	3.72	3.43	3.35	2.96	2.87	2.98	2.96	3.05
Oklahoma	1.82	1.88	2.97	2.11	2.06	2.07	2.17	2.04
Oregon	2.25	2.14	2.59	2.22	2.35	2.27	2.40	2.39
Pennsylvania	3.92	4.01	3.62	3.06	2.77	2.72	2.86	3.27
Rhode Island	4.26	4.21	3.99	3.38	3.06	3.40	3.52	3.68
South Carolina	3.22	3.10	2.93	2.75	2.70	2.99	3.24	2.95
South Dakota	3.91	3.68	3.42	2.42	2.98	2.86	2.95	3.11
Tennessee	2.94	3.09	3.01	2.68	2.36	2.26	2.47	2.73
Texas	R 2.71	R 2.78	R 2.85	R 2.83	R 2.77	R 2.78	2.98	2.88
Utah	7.72	7.48	8.05	5.26	4.17	3.54	3.26	3.89
Vermont	3.25	3.25	3.04	2.76	2.65	2.76	2.76	2.87
Virginia	2.87	2.69	2.80	2.33	2.14	2.34	2.93	2.76
Washington	1.96	1.87	1.84	1.63	1.80	1.77	1.78	1.91
West Virginia	7.91	4.36	4.05	2.29	1.93	2.80	3.14	3.58
Wisconsin	4.78	3.84	3.45	3.12	3.03	2.88	3.02	3.17
Wyoming	3.36	3.63	3.43	3.23	2.83	2.95	2.95	3.04
Total	3.01	R 3.00	2.90	R 2.74	R 2.61	R 2.70	2.90	2.90

NA = Not Available.

R = Revised Data.

— = Not Applicable.

Notes: Geographic coverage is the 50 States and the District of Columbia. Prices in this table represent the average price of natural gas by State at the point where the gas transferred from a pipeline to a local distribution company within the State. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-857.

Table 24. Average Price of Natural Gas Delivered to Residential Consumers by State, 1991-1993
(Dollars per Thousand Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993	April 1993	March 1993
Alabama	6.79	6.49	7.02	9.81	R 9.36	7.74	6.59	6.15
Alaska	3.93	3.76	4.27	4.47	4.25	4.05	3.93	3.90
Arizona	6.98	7.07	6.73	9.50	8.92	8.23	7.31	6.68
Arkansas	5.17	4.94	4.84	7.14	6.65	5.76	5.12	5.04
California	6.11	5.99	6.28	6.61	6.58	6.10	5.71	5.87
Colorado	4.33	4.51	4.48	5.62	5.06	4.56	4.36	4.21
Connecticut	9.29	9.27	8.63	11.37	10.89	10.35	9.59	9.03
Delaware	6.33	5.91	5.78	8.66	8.25	7.09	6.25	6.01
District of Columbia	8.34	7.22	7.02	8.17	8.28	8.70	8.27	8.22
Florida	10.04	8.59	8.77	12.62	12.39	11.42	9.83	9.27
Georgia	6.65	6.50	6.75	9.06	8.91	8.08	6.49	R 6.13
Hawaii	17.47	17.79	23.04	17.97	17.57	17.86	17.70	17.20
Idaho	5.15	5.24	5.14	6.30	5.99	5.49	5.30	5.02
Illinois	5.40	4.84	5.08	7.88	7.64	6.98	5.63	4.88
Indiana	5.79	5.33	5.65	8.49	7.81	6.81	5.94	5.36
Iowa	5.61	4.82	4.63	9.13	R 7.27	7.04	5.92	5.27
Kansas	4.62	4.65	4.29	6.12	6.28	5.26	4.58	R 4.43
Kentucky	5.17	4.73	4.88	7.44	6.78	6.72	5.28	4.83
Louisiana	5.61	5.12	5.53	7.26	R 7.29	6.98	5.67	5.30
Maine	7.21	6.90	6.76	8.88	8.29	8.11	7.51	7.11
Maryland	7.02	6.00	6.08	9.65	9.09	8.05	7.02	6.43
Massachusetts	8.15	7.83	8.04	8.01	R 7.52	6.85	8.54	8.33
Michigan	4.70	5.00	5.05	6.69	6.10	5.37	4.67	4.46
Minnesota	5.24	4.47	4.35	6.29	6.13	6.10	5.35	5.03
Mississippi	4.74	4.70	5.28	5.55	5.49	5.76	4.66	4.36
Missouri	5.00	4.85	5.06	7.96	7.42	5.82	4.91	4.62
Montana	4.81	4.73	4.43	5.64	5.65	5.16	4.85	4.68
Nebraska	4.80	4.55	4.51	6.45	5.99	5.51	4.77	4.51
Nevada	5.37	5.51	5.48	7.07	6.50	6.01	5.54	5.23
New Hampshire	7.33	7.16	7.05	8.60	7.53	6.59	5.91	7.66
New Jersey	6.71	6.81	6.71	8.64	8.23	7.67	6.93	6.33
New Mexico	5.23	4.50	5.33	7.99	7.71	R 6.40	5.59	4.90
New York	7.87	7.16	7.17	11.10	R 9.96	R 9.29	7.81	R 7.24
North Carolina	6.72	6.26	5.98	10.49	9.57	7.71	6.33	6.08
North Dakota	5.04	4.87	4.66	6.83	6.38	5.60	5.06	4.84
Ohio	5.54	4.96	5.29	7.39	6.50	5.97	5.49	5.31
Oklahoma	4.83	4.87	4.60	7.15	6.55	5.64	4.76	4.52
Oregon	6.16	6.11	6.05	7.78	7.44	6.55	6.14	5.99
Pennsylvania	6.62	6.55	6.71	NA	8.20	7.64	6.69	6.35
Rhode Island	7.92	7.52	7.47	9.72	9.47	8.49	7.85	7.67
South Carolina	7.24	6.95	6.96	8.93	8.47	7.34	6.56	R 6.78
South Dakota	5.32	4.86	4.80	6.65	6.13	5.89	5.38	5.15
Tennessee	5.63	5.34	5.09	7.38	7.01	6.23	5.47	R 5.20
Texas	5.73	5.61	5.63	7.54	7.20	R 6.76	R 5.78	5.32
Utah	5.10	5.50	5.50	5.60	5.40	4.82	4.89	5.15
Vermont	6.02	6.64	6.06	7.80	6.91	6.46	6.08	5.94
Virginia	7.49	6.25	6.71	11.17	10.71	9.30	7.49	R 6.79
Washington	4.82	4.94	4.55	6.76	3.75	5.37	5.03	4.80
West Virginia	6.20	6.00	6.49	9.35	7.63	6.88	6.18	5.97
Wisconsin	6.17	5.62	5.61	7.61	7.29	7.36	6.15	5.96
Wyoming	4.53	4.68	4.66	5.58	4.91	4.69	4.54	4.44
Total	5.97	5.74	5.80	7.83	R 7.32	R 6.72	5.99	R 5.66

See footnotes at end of table.

Table 24. Average Price of Natural Gas Delivered to Residential Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	February 1993	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992
Alabama	6.49	6.53	R 6.74	R 6.42	R 7.36	R 8.36	R 8.94	R 9.06
Alaska	3.82	3.83	3.79	3.70	3.74	3.79	4.02	4.54
Arizona	6.50	6.36	R 7.24	R 6.55	R 7.59	R 9.19	R 9.64	R 9.87
Arkansas	5.02	4.77	R 5.10	R 4.73	R 5.30	R 6.39	R 6.86	R 6.83
California	6.02	6.20	R 5.97	R 5.80	R 5.60	R 6.35	R 6.29	R 6.21
Colorado	4.17	4.13	R 4.56	R 4.17	R 4.50	R 5.37	R 5.89	R 6.06
Connecticut	8.79	8.99	R 8.96	R 7.68	R 7.84	R 8.41	R 10.66	R 11.20
Delaware	6.05	6.09	R 6.13	6.22	6.44	7.20	8.05	8.08
District of Columbia	8.33	8.45	R 7.61	R 8.30	R 8.58	R 9.13	R 9.18	R 7.36
Florida	R 9.23	9.07	R 9.08	R 8.63	R 10.20	R 11.36	R 11.48	R 11.26
Georgia	6.18	6.51	R 6.44	6.11	6.33	7.64	3.87	8.38
Hawaii	16.50	17.62	18.03	18.05	18.42	18.60	18.46	18.52
Idaho	4.98	4.93	R 5.23	R 4.89	R 5.24	R 5.62	R 6.00	R 6.61
Illinois	5.02	5.08	5.09	5.14	5.42	5.60	6.37	6.87
Indiana	5.43	5.58	R 5.43	R 5.54	R 5.17	R 5.44	R 6.85	R 6.97
Iowa	R 4.94	R 5.34	R 5.23	5.29	5.62	6.90	7.66	R 7.89
Kansas	R 4.41	4.37	4.70	4.45	R 4.71	R 5.32	R 5.81	R 5.92
Kentucky	4.72	R 5.08	R 5.01	5.04	R 5.14	6.34	6.96	6.42
Louisiana	4.71	5.44	R 5.60	R 5.73	R 6.61	R 7.87	R 7.34	R 7.41
Maine	6.89	6.75	6.95	R 7.12	R 6.89	R 6.77	R 7.12	R 7.65
Maryland	6.66	6.88	R 6.43	R 6.99	R 6.81	R 7.43	R 8.80	R 8.51
Massachusetts	R 8.28	8.27	R 7.92	R 8.55	R 8.61	R 6.74	R 7.70	R 7.79
Michigan	4.42	4.43	R 5.06	R 4.73	R 4.98	R 5.39	R 6.45	R 6.71
Minnesota	4.95	5.13	R 4.86	R 5.19	R 5.43	R 6.04	R 5.93	R 5.98
Mississippi	4.44	4.80	R 4.95	R 5.05	R 5.70	R 6.25	R 5.75	R 5.84
Missouri	4.67	R 4.72	R 5.11	R 4.93	R 5.57	R 6.59	R 7.23	R 7.40
Montana	4.73	4.55	R 4.80	R 4.61	R 4.77	R 5.14	R 5.45	R 6.02
Nebraska	4.55	4.72	R 4.82	R 4.90	R 5.15	R 5.78	R 6.16	R 6.24
Nevada	5.06	4.96	5.59	5.03	5.68	6.76	7.06	7.37
New Hampshire	7.48	7.86	R 7.55	R 8.00	R 9.10	R 8.09	R 8.97	R 9.16
New Jersey	6.34	6.49	R 6.94	R 6.80	R 6.99	R 7.23	R 8.50	R 8.77
New Mexico	4.80	4.50	R 4.75	R 4.58	R 5.17	R 6.44	R 6.81	R 6.88
New York	R 7.30	R 7.67	R 7.58	R 7.74	R 8.68	R 8.62	R 9.92	R 10.28
North Carolina	6.58	6.76	R 6.60	R 6.66	R 7.12	R 7.72	R 10.03	R 10.51
North Dakota	4.82	4.71	5.00	4.85	4.98	5.64	6.26	6.75
Ohio	5.43	5.33	R 5.20	R 5.38	R 5.52	R 5.76	R 6.51	R 6.98
Oklahoma	4.58	4.57	4.96	R 4.57	R 4.82	R 6.14	R 6.71	R 6.84
Oregon	5.95	5.90	R 6.17	R 5.92	R 6.16	R 6.66	R 7.27	R 7.64
Pennsylvania	R 6.34	6.18	R 6.60	R 6.18	R 6.36	R 6.87	R 8.34	R 8.98
Rhode Island	7.64	7.69	7.68	7.62	R 7.85	8.28	R 9.00	9.53
South Carolina	7.31	R 7.69	R 7.03	R 6.86	R 7.39	R 7.17	R 8.45	R 8.61
South Dakota	R 5.12	R 5.13	R 5.15	R 5.30	R 5.37	R 6.09	R 6.36	R 6.67
Tennessee	5.83	5.45	R 5.50	R 5.34	R 5.93	R 6.29	R 7.02	R 7.14
Texas	R 5.52	5.26	5.78	R 5.14	R 6.02	R 7.32	R 7.48	R 7.62
Utah	5.08	5.14	R 5.44	R 5.21	R 5.15	R 5.35	R 5.87	R 5.95
Vermont	5.96	5.59	6.70	6.36	6.73	7.14	8.02	8.42
Virginia	7.18	R 7.14	R 6.69	R 7.10	R 7.05	R 7.93	R 9.83	R 9.16
Washington	4.76	4.59	5.00	4.60	4.94	5.57	R 6.35	R 7.05
West Virginia	5.93	6.00	R 6.31	R 7.60	R 6.12	R 6.48	R 7.83	R 8.41
Wisconsin	R 5.94	5.91	R 5.87	R 5.98	R 6.27	R 6.68	R 6.89	R 6.90
Wyoming	4.43	4.36	R 4.72	R 4.41	R 4.64	R 5.09	R 5.57	R 5.96
Total	5.71	5.71	R 5.89	R 5.74	R 6.02	R 6.52	R 7.15	R 7.45

See footnotes at end of table.

Table 24. Average Price of Natural Gas Delivered to Residential Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	July 1992	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 8.93	R 8.00	R 6.98	R 6.24	R 6.67	R 6.01	R 6.19	7.05
Alaska	4.20	4.03	3.83	3.75	3.69	3.68	3.69	4.18
Arizona	R 9.54	R 9.02	R 8.53	R 7.43	R 6.84	R 6.48	R 6.40	6.99
Arkansas	R 6.46	R 6.16	R 5.53	R 4.97	R 4.87	R 4.60	R 4.64	4.98
California	R 6.27	R 6.28	R 5.99	R 5.52	R 5.76	R 6.03	R 6.15	6.27
Colorado	R 5.78	R 5.25	R 4.96	R 4.52	R 4.38	R 4.30	R 4.25	4.59
Connecticut	R 10.67	R 10.54	R 9.84	R 9.05	R 8.89	R 9.18	R 9.14	8.74
Delaware	7.94	7.39	6.51	5.98	5.80	5.52	5.50	5.86
District of Columbia	R 6.77	R 7.22	R 7.95	R 7.08	R 7.23	R 7.07	R 7.31	7.07
Florida	R 10.99	R 10.69	R 9.80	R 8.66	R 8.48	R 7.54	R 7.79	8.98
Georgia	8.30	7.88	6.96	6.29	6.25	6.51	6.08	6.70
Hawaii	18.19	17.71	18.04	17.07	17.48	17.92	18.12	22.93
Idaho	R 6.22	R 6.17	R 5.56	R 5.42	R 5.30	R 5.05	R 4.95	5.19
Illinois	6.91	6.45	5.52	4.68	4.33	4.76	4.66	4.95
Indiana	R 6.87	R 6.42	R 5.93	R 5.30	R 4.79	R 5.40	R 5.11	5.46
Iowa	7.56	6.71	5.67	4.68	4.44	4.31	4.73	4.81
Kansas	R 5.95	R 5.40	R 5.11	R 4.59	R 4.57	R 4.53	R 4.33	4.38
Kentucky	R 6.25	5.79	4.98	4.69	4.54	4.46	4.67	4.87
Louisiana	R 7.06	R 6.78	R 6.27	R 4.85	R 5.09	R 4.43	R 4.80	5.77
Maine	R 7.51	R 6.76	R 6.78	R 7.08	R 6.90	R 6.79	R 6.87	6.86
Maryland	R 8.17	R 7.58	R 6.26	R 5.40	R 5.66	R 5.89	R 5.91	6.16
Massachusetts	R 7.61	R 6.95	R 6.12	8.32	R 8.05	R 8.04	R 8.11	8.11
Michigan	R 6.58	R 6.02	R 5.28	R 4.89	R 4.83	R 4.82	R 4.80	5.07
Minnesota	R 5.56	R 5.51	R 4.85	R 4.34	R 4.17	R 4.15	R 4.58	4.52
Mississippi	R 5.64	R 5.51	R 5.45	R 4.62	R 4.52	R 4.46	R 4.54	5.21
Missouri	R 6.99	R 6.24	5.32	4.60	R 4.60	R 4.61	R 4.65	5.14
Montana	R 5.78	R 5.57	R 5.06	R 4.73	R 4.66	R 4.53	R 4.47	4.52
Nebraska	R 5.90	R 5.47	R 4.91	R 4.41	R 4.26	R 4.28	R 4.57	4.64
Nevada	6.89	6.81	6.41	5.68	5.29	5.18	5.10	5.61
New Hampshire	R 9.09	R 8.58	R 7.83	R 6.94	R 6.98	R 6.87	R 6.90	7.14
New Jersey	R 8.68	R 8.41	R 7.46	R 6.71	R 6.04	R 6.75	R 6.73	6.73
New Mexico	R 6.63	R 6.04	R 5.35	R 4.50	R 4.27	R 4.17	R 4.10	5.40
New York	R 9.70	R 8.70	R 7.40	R 6.79	R 6.89	R 6.83	R 7.10	7.35
North Carolina	R 9.89	R 8.24	R 6.74	R 5.54	R 6.03	R 5.91	R 6.30	6.24
North Dakota	6.33	6.04	5.21	4.78	4.69	4.62	4.67	4.82
Ohio	R 6.27	R 5.92	R 5.27	R 4.83	R 4.80	R 4.66	R 4.96	5.28
Oklahoma	R 6.59	R 6.29	R 5.87	R 4.96	R 4.79	R 4.43	R 4.42	4.72
Oregon	R 7.32	R 6.96	R 6.48	R 6.21	R 6.03	R 5.92	R 5.82	6.13
Pennsylvania	R 8.94	R 8.14	R 7.20	R 6.55	R 6.30	R 6.34	R 6.14	6.76
Rhode Island	R 8.71	8.45	R 7.77	R 7.45	7.36	7.33	R 7.32	7.63
South Carolina	R 8.37	R 7.67	R 6.68	R 6.27	R 7.44	R 6.88	R 6.88	6.98
South Dakota	R 6.31	R 6.04	R 4.64	R 4.78	R 4.60	R 4.59	R 4.94	4.94
Tennessee	R 6.81	R 6.38	R 5.72	R 5.19	R 5.47	R 5.22	R 5.06	5.19
Texas	R 7.42	R 7.16	R 6.92	R 6.06	R 5.52	R 4.97	R 4.97	5.71
Utah	R 5.86	R 5.80	R 5.48	R 5.50	R 5.64	R 5.43	R 5.38	5.44
Vermont	8.22	7.78	7.05	6.68	6.59	6.54	6.22	6.23
Virginia	R 8.97	R 7.84	R 6.61	R 5.62	R 5.68	R 6.25	R 6.28	6.80
Washington	7.17	6.24	5.46	5.00	4.81	4.67	4.52	4.68
West Virginia	R 8.32	R 7.23	R 6.39	R 5.93	R 5.87	R 5.75	R 5.76	6.50
Wisconsin	R 6.50	R 6.40	R 5.67	R 5.44	R 5.46	R 5.43	R 5.75	5.61
Wyoming	R 5.69	R 5.28	R 4.96	R 4.64	R 4.55	R 4.51	R 4.52	4.74
Total	R 7.27	R 6.84	R 6.15	R 5.62	R 5.50	R 5.54	5.53	5.82

R = Revised Data.

NA = Not Available.

Notes: Data for 1991 and 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-857.

Table 25. Average Price of Natural Gas Sold to Commercial Consumers by State, 1991-1993
(Dollars per Thousand Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993	April 1993	March 1993
Alabama	5.99	5.55	5.83	6.86	R 6.74	6.33	5.83	5.69
Alaska	2.81	2.64	3.01	2.61	2.67	2.73	2.83	2.79
Arizona	4.99	5.23	5.03	4.86	4.82	5.03	5.03	R 5.06
Arkansas	4.36	4.34	4.30	4.77	4.96	4.41	4.35	4.32
California	5.74	5.27	5.69	4.63	5.83	5.24	5.50	6.19
Colorado	3.83	4.01	4.01	4.08	3.95	3.87	3.82	3.82
Connecticut	7.28	7.44	6.84	7.31	6.97	7.19	7.36	7.35
Delaware	5.29	4.85	4.85	5.64	7.75	5.46	5.19	5.11
District of Columbia	5.86	5.27	5.23	5.47	R 5.59	5.60	5.72	6.08
Florida	5.81	4.82	4.91	5.82	5.98	6.01	5.87	5.94
Georgia	5.71	5.63	5.78	5.78	6.13	6.14	5.60	R 5.21
Hawaii	12.99	13.14	13.61	13.23	12.92	13.27	13.18	12.79
Idaho	4.42	4.41	4.38	4.93	4.65	4.65	4.60	4.36
Illinois	5.04	4.44	4.71	6.01	6.80	6.01	5.26	4.65
Indiana	4.96	4.54	4.80	6.33	5.99	5.29	4.99	4.62
Iowa	4.72	3.96	3.88	5.66	R 5.07	5.48	5.03	4.64
Kansas	4.05	3.62	3.32	3.41	4.14	4.24	4.12	R 4.11
Kentucky	4.69	4.31	4.49	5.27	3.98	5.00	4.62	4.60
Louisiana	5.04	4.48	4.81	5.39	R 5.46	5.43	5.05	R 4.91
Maine	6.59	6.24	6.00	6.96	6.84	6.81	6.77	6.77
Maryland	5.78	4.97	5.11	6.13	5.99	5.91	5.68	5.57
Massachusetts	6.61	5.99	6.22	4.36	4.58	R 4.72	R 7.02	R 7.20
Michigan	4.41	4.62	4.70	5.57	5.29	4.77	4.35	4.27
Minnesota	4.55	3.77	3.72	4.56	4.71	5.11	4.70	4.43
Mississippi	4.08	3.98	4.42	3.94	4.00	4.54	R 4.06	R 3.93
Missouri	4.60	4.35	4.52	5.18	5.30	4.73	4.48	R 4.47
Montana	4.67	4.43	4.31	5.07	5.12	4.79	4.65	4.61
Nebraska	4.28	3.86	3.88	4.55	4.13	4.58	4.24	4.16
Nevada	4.30	4.32	4.33	4.42	4.41	4.15	4.30	4.30
New Hampshire	6.64	6.55	6.37	6.21	6.04	5.78	5.61	7.14
New Jersey	5.38	5.47	5.32	4.95	5.16	5.29	5.25	5.41
New Mexico	4.17	3.37	4.21	4.42	4.79	R 4.52	4.38	4.07
New York	6.10	5.58	5.52	6.11	R 6.63	R 7.12	6.27	R 5.73
North Carolina	5.47	4.58	4.49	5.79	5.77	5.44	5.15	5.31
North Dakota	4.69	4.40	4.22	5.45	5.37	5.04	4.75	4.61
Ohio	5.12	4.51	4.83	5.65	5.89	5.10	5.13	4.97
Oklahoma	4.53	4.20	3.92	4.76	4.66	4.44	4.51	4.48
Oregon	4.86	4.71	4.75	5.43	5.29	4.97	4.77	4.75
Pennsylvania	5.91	5.93	6.06	NA	6.52	6.43	6.07	5.81
Rhode Island	7.10	6.41	6.24	7.26	7.55	7.48	7.01	6.94
South Carolina	5.86	5.59	5.69	5.41	5.46	5.49	5.67	5.85
South Dakota	4.47	3.97	3.98	4.72	4.61	5.21	4.52	4.34
Tennessee	5.14	4.95	4.75	5.30	5.50	5.12	4.95	R 4.96
Texas	4.31	4.00	3.96	3.79	3.85	R 4.07	R 4.12	4.34
Utah	4.16	4.48	4.48	4.19	4.18	3.82	3.96	4.23
Vermont	5.33	5.70	5.26	5.75	5.73	5.54	5.32	5.36
Virginia	5.59	4.73	4.96	5.95	6.01	5.61	5.62	R 5.26
Washington	4.39	4.35	4.02	4.80	4.66	4.52	R 4.34	4.33
West Virginia	5.86	5.41	6.12	7.52	7.01	6.41	5.84	R 5.67
Wisconsin	4.86	4.59	4.66	5.20	5.20	5.53	4.93	4.74
Wyoming	4.18	4.25	4.28	4.33	4.51	4.18	4.15	4.15
Total	5.13	4.82	4.86	5.03	R 5.31	R 5.21	R 5.13	5.06

See footnotes at end of table

Table 25. Average Price of Natural Gas Sold to Commercial Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	February 1993	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992
Alabama	5.89	5.92	R 5.71	R 5.90	R 6.10	R 6.19	R 6.12	R 6.14
Alaska	2.92	2.89	2.64	2.68	2.67	2.59	2.50	2.63
Arizona	R 5.00	R 5.02	R 5.20	R 5.09	R 5.22	R 5.28	R 4.87	R 5.28
Arkansas	4.33	4.20	R 4.38	R 4.35	4.47	R 4.72	4.55	4.62
California	5.43	6.93	R 5.15	R 5.73	R 5.45	4.53	4.20	4.40
Colorado	3.81	3.75	R 4.00	R 3.84	R 3.91	R 4.19	R 4.32	R 4.38
Connecticut	7.22	R 7.33	R 7.20	R 6.88	R 6.80	R 6.90	R 6.45	R 6.30
Delaware	5.12	5.17	R 4.94	R 5.18	R 5.07	R 5.07	R 5.16	R 5.14
District of Columbia	5.99	5.95	R 5.36	R 5.95	R 5.90	R 5.26	R 4.99	R 4.76
Florida	5.90	5.20	R 4.98	R 5.36	R 5.35	R 5.30	R 5.13	R 4.95
Georgia	5.79	5.92	R 5.55	R 5.62	R 6.03	R 5.98	R 2.76	R 5.53
Hawaii	12.40	13.17	13.34	13.57	13.71	13.83	13.67	13.44
Idaho	4.26	4.33	R 4.40	R 4.22	R 4.50	R 4.53	R 4.56	R 4.60
Illinois	4.83	4.91	R 4.65	R 4.88	R 4.93	R 4.89	R 5.28	R 5.31
Indiana	4.81	4.95	R 4.57	R 4.85	R 4.34	R 4.21	R 4.95	R 4.64
Iowa	R 4.23	R 4.73	R 4.27	R 4.58	R 4.54	R 5.31	R 5.02	R 4.99
Kansas	R 4.09	4.09	3.53	3.98	R 3.88	R 3.08	R 2.69	R 2.77
Kentucky	4.59	R 4.91	R 4.47	R 4.78	R 4.77	R 4.52	R 4.61	R 4.75
Louisiana	4.55	5.11	R 4.79	R 5.39	R 5.54	R 5.60	R 4.91	R 5.06
Maine	6.45	6.30	6.19	R 6.46	R 6.14	R 5.38	R 5.56	R 5.95
Maryland	5.77	5.85	R 5.24	R 5.89	R 5.73	R 5.57	R 5.54	R 5.37
Massachusetts	R 7.38	R 7.21	R 5.86	R 7.00	R 6.40	R 4.29	R 4.15	R 3.85
Michigan	4.27	4.32	R 4.65	R 4.49	R 4.63	R 4.89	R 5.40	R 5.47
Minnesota	4.32	4.60	R 4.10	R 4.59	R 4.61	R 4.88	R 4.39	R 4.32
Mississippi	3.93	4.25	R 4.13	R 4.53	R 4.51	R 4.62	R 4.02	R 3.90
Missouri	4.54	R 4.60	R 4.47	R 4.68	R 4.86	R 4.62	R 4.53	R 4.71
Montana	R 4.66	4.56	R 4.46	R 4.39	R 4.46	R 4.58	R 4.76	R 4.98
Nebraska	4.20	4.34	R 3.99	R 4.31	R 4.27	R 4.21	R 3.93	R 3.78
Nevada	4.31	4.28	R 4.33	4.26	4.31	4.37	4.42	4.45
New Hampshire	6.92	6.99	R 6.74	R 7.18	R 7.43	R 6.75	R 6.95	R 6.85
New Jersey	5.42	5.64	R 5.54	R 5.75	R 6.02	R 5.45	R 5.31	R 5.24
New Mexico	4.03	3.89	R 3.36	R 3.66	R 3.32	R 3.19	R 3.08	R 2.99
New York	R 5.85	R 6.10	R 5.75	R 6.26	R 6.44	R 5.66	R 5.57	R 5.84
North Carolina	5.51	5.66	R 4.79	R 5.38	R 5.31	R 4.73	R 4.93	R 4.82
North Dakota	4.54	4.55	4.52	4.59	4.68	4.89	4.96	5.15
Ohio	5.16	5.03	R 4.72	R 5.15	R 5.08	R 5.00	R 5.19	R 5.28
Oklahoma	R 4.52	4.55	R 4.23	R 4.45	R 4.22	R 4.10	R 4.11	R 4.05
Oregon	4.79	4.78	R 4.73	R 4.72	R 4.69	R 4.73	R 4.89	R 5.02
Pennsylvania	R 5.79	5.60	R 5.87	R 5.59	R 5.67	R 5.70	R 6.23	R 6.49
Rhode Island	R 6.95	7.21	R 6.31	R 6.95	R 6.99	R 5.49	R 5.15	R 5.07
South Carolina	6.12	R 6.22	R 5.65	R 6.02	R 6.08	R 5.31	R 5.36	R 5.32
South Dakota	R 4.31	R 4.43	R 4.19	R 4.44	R 4.45	R 4.84	R 4.62	R 4.62
Tennessee	5.13	R 5.31	R 5.06	R 5.25	R 5.35	R 5.25	R 5.17	R 5.25
Texas	R 4.74	4.73	R 4.09	R 4.54	R 4.45	R 4.12	R 4.00	R 3.63
Utah	4.19	4.26	R 4.40	R 4.27	R 4.20	R 4.04	R 4.23	R 4.33
Vermont	5.35	5.05	5.67	5.49	5.55	5.61	5.73	6.01
Virginia	5.61	R 5.66	R 4.97	R 5.66	R 5.27	R 5.42	R 5.06	R 5.08
Washington	4.36	4.28	R 4.32	R 3.85	R 4.44	R 4.56	R 4.63	R 4.69
West Virginia	R 5.67	R 5.69	R 5.48	R 5.30	R 5.45	R 5.75	R 6.83	R 6.93
Wisconsin	R 4.71	4.77	R 4.81	R 4.94	R 5.21	R 5.45	R 5.43	R 5.42
Wyoming	4.16	4.12	R 4.26	R 4.21	R 4.28	R 4.36	R 4.36	R 4.38
Total	5.08	R 5.18	R 4.88	5.11	R 5.12	R 4.90	4.69	R 4.73

See footnotes at end of table

Table 25. Average Price of Natural Gas Sold to Commercial Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	July 1992	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 5.98	R 5.70	R 5.60	R 5.38	R 5.56	R 5.37	R 5.65	5.74
Alaska	2.48	2.54	2.61	2.65	2.70	2.70	2.68	2.89
Arizona	5.08	R 5.37	R 5.74	R 5.29	R 5.22	R 5.10	R 5.09	5.07
Arkansas	4.36	4.29	4.25	4.43	R 4.33	4.28	R 4.38	4.35
California	4.39	3.91	3.77	R 5.93	R 5.94	R 8.65	4.80	5.50
Colorado	R 4.32	R 4.23	R 4.16	R 4.01	R 3.97	R 3.94	R 3.92	4.04
Connecticut	R 6.37	R 7.55	R 7.21	R 7.21	R 7.21	R 7.76	R 7.77	6.90
Delaware	R 5.16	R 5.14	R 5.01	R 4.89	R 4.57	R 4.99	R 4.72	4.81
District of Columbia	R 4.85	R 4.89	R 5.18	R 5.18	R 5.24	R 5.55	R 5.37	5.17
Florida	R 4.95	R 4.97	R 4.43	R 4.84	R 4.80	R 4.84	R 4.93	4.92
Georgia	R 5.51	R 5.53	R 5.34	R 5.28	R 5.70	R 5.93	R 5.67	5.67
Hawaii	13.24	12.95	13.34	12.57	12.87	13.51	13.46	13.36
Idaho	R 4.65	R 4.64	R 4.61	R 4.60	R 4.37	R 4.31	R 4.27	4.42
Illinois	R 5.48	R 5.94	R 4.80	R 4.02	R 4.11	R 4.52	R 4.44	4.56
Indiana	R 4.79	R 4.75	R 4.67	R 4.52	4.08	R 4.82	R 4.55	4.61
Iowa	R 4.57	R 4.58	R 4.23	R 3.85	R 3.73	R 3.71	R 4.12	3.99
Kansas	R 2.88	R 2.85	R 3.15	R 3.58	R 4.01	R 4.13	R 3.97	3.32
Kentucky	R 4.50	4.46	4.19	R 4.27	R 4.16	R 4.27	R 4.43	4.44
Louisiana	R 4.71	R 4.80	R 4.69	R 4.08	R 4.43	R 4.28	4.67	4.90
Maine	R 5.49	R 5.47	R 5.53	R 6.37	R 6.37	R 6.74	R 6.26	6.02
Maryland	R 5.31	R 5.01	R 4.79	R 4.63	R 4.88	R 5.06	R 5.14	5.04
Massachusetts	R 3.76	R 4.54	R 4.49	R 6.16	R 6.44	R 6.72	R 6.75	6.17
Michigan	R 5.41	R 5.11	R 4.70	R 4.52	R 4.55	R 4.58	R 4.56	4.70
Minnesota	R 3.96	R 4.20	R 3.99	3.70	3.51	3.59	R 4.00	3.81
Mississippi	R 3.80	R 3.89	R 4.04	R 3.90	R 3.90	R 4.00	R 4.12	4.28
Missouri	R 4.96	R 4.35	R 4.25	R 4.11	R 4.29	R 4.39	R 4.42	4.50
Montana	R 4.93	R 4.86	R 4.58	R 4.43	R 4.36	R 4.31	R 4.32	4.35
Nebraska	R 3.69	R 3.98	R 3.75	R 3.69	R 3.76	R 3.87	R 4.12	3.87
Nevada	4.37	4.41	4.40	4.33	4.26	4.29	4.30	4.34
New Hampshire	R 7.24	R 6.50	R 7.03	R 6.46	R 6.48	R 6.45	R 6.46	6.35
New Jersey	R 4.99	R 5.33	R 5.36	R 5.52	R 5.05	R 5.72	R 5.79	5.21
New Mexico	R 3.28	R 3.82	R 3.39	R 3.23	R 3.44	R 3.47	R 3.22	4.15
New York	R 5.76	R 6.08	R 5.77	R 5.31	R 5.25	R 5.63	R 5.76	5.47
North Carolina	R 4.84	R 4.78	R 4.49	R 4.16	R 4.33	R 4.55	R 4.95	4.53
North Dakota	5.00	4.92	R 4.55	4.32	4.26	4.30	4.40	4.34
Ohio	R 4.67	R 4.84	R 4.54	R 4.42	R 4.39	R 4.39	R 4.67	4.76
Oklahoma	R 4.06	R 4.31	R 4.28	R 4.33	R 4.34	R 4.13	R 4.09	3.91
Oregon	R 4.95	R 4.82	R 4.73	R 4.71	R 4.68	R 4.66	R 4.66	4.75
Pennsylvania	R 6.73	R 6.56	R 6.25	R 6.14	R 5.77	R 5.86	R 5.67	6.00
Rhode Island	R 5.31	R 5.67	R 5.73	R 6.01	6.74	7.05	7.01	6.02
South Carolina	R 5.34	R 5.32	R 5.07	R 5.36	R 5.86	R 5.82	R 5.77	5.56
South Dakota	R 4.40	R 4.40	R 4.19	R 3.82	R 3.70	R 3.85	R 4.15	4.04
Tennessee	R 4.86	R 4.91	R 4.77	R 4.77	R 4.92	R 4.98	R 5.13	4.76
Texas	R 3.53	R 3.93	R 3.81	R 3.89	R 4.06	R 4.15	R 4.30	4.01
Utah	R 4.36	R 4.38	R 4.23	R 4.40	R 4.68	R 4.50	R 4.47	4.50
Vermont	6.15	6.20	5.96	5.61	5.62	5.69	5.53	5.24
Virginia	R 5.05	R 4.51	R 4.20	R 4.26	R 4.45	R 5.11	R 5.13	4.85
Washington	R 4.64	R 4.63	R 4.49	R 4.39	R 4.29	R 4.28	R 4.24	4.06
West Virginia	R 6.90	R 6.42	R 5.76	R 5.36	R 5.29	R 5.22	R 5.25	6.11
Wisconsin	R 4.91	R 5.11	R 4.44	R 4.46	R 4.49	R 4.46	R 4.80	4.62
Wyoming	R 4.31	R 4.31	R 4.23	R 4.25	R 4.22	R 4.22	R 4.26	4.31
Total	R 4.64	4.72	4.59	R 4.77	4.77	R 5.03	4.85	4.81

R = Revised Data.

NA = Not Available.

Notes: Data for 1991 and 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Average prices for gas delivered to commercial consumers reflect onsystem sales prices only. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy. See Table 28 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries.

Source: Form EIA-857.

Table 26. Average Price of Natural Gas Sold to Industrial Consumers by State, 1991-1993
(Dollars per Thousand Cubic Feet)

State	YTD 1993	YTD 1992	YTD 1991	July 1993	June 1993	May 1993	April 1993	March 1993
Alabama	3.45	2.83	2.99	3.16	3.30	R 3.78	3.47	3.47
Alaska	1.33	1.18	1.18	1.24	1.35	1.35	1.35	1.35
Arizona	4.03	4.17	3.39	3.98	4.65	4.03	3.92	3.97
Arkansas	3.18	3.09	3.07	3.19	3.07	3.04	3.15	3.22
California	3.65	3.87	4.03	2.84	3.77	3.52	3.82	3.31
Colorado	2.29	2.23	2.30	2.10	2.14	2.48	2.26	2.27
Connecticut	4.71	5.13	4.84	3.93	3.90	4.42	4.77	4.96
Delaware	3.34	3.06	3.08	3.11	3.52	3.69	3.31	3.26
District of Columbia	--	--	--	--	--	--	--	--
Florida	3.82	3.05	3.05	4.00	4.01	4.03	3.86	3.82
Georgia	4.03	3.27	3.39	3.61	4.41	4.49	4.11	R 3.97
Hawaii	--	--	--	--	--	--	--	--
Idaho *	--	--	2.96	--	--	--	--	--
Illinois	4.34	3.80	4.07	4.62	4.62	4.64	4.81	4.23
Indiana	3.53	3.38	3.75	3.97	3.96	3.12	3.36	3.41
Iowa	3.98	3.24	2.49	4.04	R 4.78	3.75	4.44	3.85
Kansas	2.67	2.44	2.61	2.59	2.55	2.70	2.60	R 2.83
Kentucky	3.73	3.07	3.52	3.66	3.62	3.65	3.44	3.76
Louisiana	2.24	1.67	1.70	2.16	R 2.43	2.62	R 2.27	1.96
Maine	4.98	4.16	4.36	4.03	5.36	5.31	4.75	5.49
Maryland	3.70	3.33	3.56	3.67	3.41	4.33	4.67	3.96
Massachusetts	5.36	4.27	4.03	4.24	R 3.68	R 4.56	R 5.80	R 6.45
Michigan	4.07	3.91	4.02	4.37	4.24	4.16	4.06	4.02
Minnesota	3.19	2.81	2.74	3.21	2.70	3.40	3.34	3.03
Mississippi	2.85	2.27	2.33	2.62	2.80	3.34	2.94	2.76
Missouri	4.21	3.74	4.21	4.19	4.25	4.10	4.19	R 4.15
Montana	3.92	3.95	3.24	4.17	4.09	3.97	3.82	3.81
Nebraska	3.14	2.61	2.73	2.91	2.57	3.94	3.17	2.97
Nevada	4.02	4.20	4.19	4.03	4.36	4.26	4.12	3.80
New Hampshire	4.48	4.55	4.46	3.60	3.33	3.00	4.07	6.06
New Jersey	3.67	3.41	3.95	3.32	3.75	3.61	3.44	3.83
New Mexico	3.83	6.71	3.58	3.71	4.44	3.83	3.92	4.01
New York	5.72	4.80	4.83	5.44	R 5.25	R 6.28	5.73	R 5.57
North Carolina	3.86	3.03	3.32	3.47	3.55	3.80	3.62	3.87
North Dakota	3.36	3.05	3.15	3.43	3.53	3.49	3.44	3.28
Ohio	4.64	3.96	4.21	4.56	4.73	R 4.57	4.47	4.52
Oklahoma	2.14	1.91	1.69	1.92	2.51	2.12	2.07	2.12
Oregon	3.51	3.32	3.42	3.40	3.35	3.62	3.52	3.54
Pennsylvania	3.73	3.87	4.12	NA	3.58	3.72	3.66	3.78
Rhode Island	5.46	4.85	5.59	4.46	4.46	4.99	5.78	6.08
South Carolina	3.33	2.88	3.03	3.03	3.19	3.53	3.29	3.25
South Dakota	3.63	3.46	3.26	3.65	3.79	4.24	3.84	3.46
Tennessee	3.65	3.16	3.19	3.59	R 3.79	3.78	3.49	R 3.58
Texas	2.32	1.83	1.87	2.24	R 2.16	R 2.81	2.47	2.23
Utah	3.11	4.18	3.74	3.00	2.93	2.91	2.92	3.27
Vermont	3.66	3.01	3.10	3.56	3.74	3.65	3.59	3.54
Virginia	4.16	3.48	3.94	2.93	3.77	4.30	4.26	R 4.61
Washington	3.09	2.86	2.83	3.14	3.15	3.45	3.19	2.89
West Virginia	2.82	2.78	2.91	1.88	2.75	3.24	2.73	2.68
Wisconsin	3.93	3.14	3.15	3.77	3.87	4.33	3.99	3.85
Wyoming	2.87	2.87	3.02	3.07	3.00	2.87	2.80	2.81
Total	3.08	2.65	2.70	2.71	R 2.95	3.24	3.13	R 3.08

See footnotes at end of table.

Table 26. Average Price of Natural Gas Sold to Industrial Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	February 1993	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992
Alabama	3.38	3.58	R 3.07	R 3.59	R 3.54	R 3.61	R 3.18	R 3.13
Alaska	1.35	1.35	1.18	1.19	1.17	1.17	1.17	1.16
Arizona	3.98	3.97	R 4.16	R 4.09	4.21	4.11	4.21	4.14
Arkansas	3.31	3.24	R 3.13	R 3.28	R 3.28	R 3.20	R 3.03	R 3.00
California	3.77	4.85	R 3.67	R 3.82	R 3.10	R 3.44	R 3.46	3.29
Colorado	2.27	2.49	R 2.20	R 2.32	R 2.29	R 2.34	R 1.63	R 2.30
Connecticut	5.01	R 5.34	R 4.92	R 5.05	R 4.85	R 4.64	R 4.09	R 4.26
Delaware	3.22	3.32	R 3.25	R 3.59	R 3.47	R 3.69	R 3.22	R 3.17
District of Columbia	---	---	---	---	---	---	---	---
Florida	3.64	3.48	R 3.22	R 3.51	R 3.60	3.89	R 3.28	R 3.16
Georgia	R 3.81	R 4.10	R 3.50	R 4.43	R 4.28	R 4.38	R 2.91	R 3.35
Hawaii	---	---	---	---	---	---	---	---
Idaho	---	---	R 2.97	---	---	---	---	---
Illinois	4.15	4.12	R 3.75	4.14	3.79	3.21	3.17	3.84
Indiana	3.48	3.86	R 3.39	R 4.17	R 3.51	R 3.01	R 3.36	R 2.84
Iowa	R 3.50	R 4.11	R 3.55	R 3.86	R 3.85	R 4.29	R 3.76	R 3.50
Kansas	R 2.86	2.87	R 2.61	R 3.07	R 2.86	2.87	R 2.70	2.58
Kentucky	3.83	4.23	R 3.23	R 4.14	R 3.92	R 3.11	R 3.05	R 3.08
Louisiana	1.96	2.27	R 1.93	R 2.54	R 2.70	R 2.69	R 2.19	R 1.99
Maine	5.40	4.76	4.14	4.97	4.50	3.88	3.55	3.49
Maryland	3.88	3.25	R 3.56	4.13	3.75	3.65	3.37	3.80
Massachusetts	R 6.55	R 6.32	R 4.14	R 5.65	R 5.05	R 3.35	R 3.06	R 3.01
Michigan	4.02	4.04	R 3.92	R 3.86	R 3.90	R 3.97	R 4.14	R 3.99
Minnesota	3.33	3.33	R 3.05	R 3.32	R 3.51	R 3.57	R 3.21	R 3.02
Mississippi	2.71	2.80	2.53	R 3.02	R 3.05	R 3.34	R 2.64	R 2.56
Missouri	4.27	4.26	R 3.87	R 4.56	R 4.57	R 3.49	R 3.89	R 3.55
Montana	3.81	3.99	R 4.19	R 4.67	R 4.81	R 4.80	R 4.66	R 4.35
Nebraska	3.04	3.24	R 2.92	R 3.36	R 3.41	R 3.62	R 3.00	R 2.96
Nevada	4.09	3.69	R 4.07	R 3.84	R 4.11	R 3.99	R 4.25	R 3.40
New Hampshire	5.91	5.66	R 4.49	R 5.58	R 5.31	R 4.20	R 3.62	R 3.47
New Jersey	3.70	3.91	R 3.42	R 4.38	R 3.45	3.29	3.05	2.85
New Mexico	3.78	3.67	R 6.86	R 8.02	R 7.00	R 6.66	R 5.85	R 6.06
New York	R 5.73	R 5.94	R 4.93	R 5.51	R 5.41	R 4.75	R 4.54	R 5.04
North Carolina	4.14	4.22	R 3.34	R 4.11	R 4.02	R 3.55	R 3.38	R 3.16
North Dakota	3.23	3.37	R 3.25	3.47	3.74	3.71	3.43	3.27
Ohio	4.72	4.85	4.15	R 4.68	R 4.62	R 4.13	R 4.30	R 4.13
Oklahoma	R 2.10	2.19	R 2.02	R 2.10	R 2.17	R 2.29	R 2.03	R 1.96
Oregon	3.54	3.59	R 3.36	3.56	R 3.46	R 3.42	R 3.31	R 3.30
Pennsylvania	R 3.85	R 3.83	R 3.75	R 3.83	3.54	R 3.51	R 3.54	R 3.60
Rhode Island	R 6.08	R 6.27	R 4.66	R 5.85	R 5.48	R 3.91	R 3.73	R 2.75
South Carolina	3.46	R 3.52	R 3.13	R 3.88	R 3.62	R 3.60	R 3.18	R 3.06
South Dakota	R 3.57	R 3.33	R 3.63	R 3.41	R 3.62	R 4.59	R 4.03	R 4.09
Tennessee	3.54	R 3.84	R 3.44	R 4.18	R 4.05	R 3.92	R 3.74	R 3.37
Texas	2.06	2.31	R 2.12	R 2.59	R 2.56	R 2.92	R 2.28	R 2.23
Utah	3.24	3.31	R 3.91	R 3.60	R 3.66	R 3.37	R 3.55	R 3.58
Vermont	3.67	3.81	3.28	3.81	3.75	3.56	3.56	3.57
Virginia	4.57	R 4.61	R 3.72	R 4.60	R 3.60	R 4.58	R 3.57	R 3.88
Washington	2.92	2.99	R 2.91	R 2.69	R 3.13	R 3.37	R 2.96	R 2.71
West Virginia	3.90	3.04	R 2.89	R 3.12	R 2.87	R 2.98	R 2.96	R 3.18
Wisconsin	3.83	3.97	R 3.38	R 3.68	R 3.87	R 4.04	R 3.47	R 3.24
Wyoming	2.74	2.88	R 2.91	R 2.89	R 2.92	R 3.04	R 3.09	R 3.03
Total	3.12	R 3.26	R 2.84	R 3.38	R 3.26	R 3.21	R 2.82	R 2.71

See footnotes at end of table.

Table 26. Average Price of Natural Gas Sold to Industrial Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)

State	July 1992	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991
Alabama	R 2.77	R 2.76	R 2.81	R 2.81	R 2.86	R 2.83	R 3.25	3.00
Alaska	1.17	1.16	1.16	1.16	1.19	1.20	1.20	1.18
Arizona	R 4.19	4.23	4.16	4.11	4.24	4.09	4.14	3.51
Arkansas	R 2.97	R 2.84	R 2.90	R 3.05	R 3.22	R 3.21	R 3.39	3.06
California	3.49	R 3.42	3.04	R 3.98	R 4.26	R 4.43	R 4.58	3.96
Colorado	R 1.88	R 2.18	R 2.31	R 2.29	R 2.29	R 2.30	R 2.44	2.34
Connecticut	R 4.32	R 4.51	R 4.71	R 4.94	R 5.39	R 5.61	R 5.61	4.84
Delaware	R 2.97	R 3.15	R 2.94	R 3.03	R 3.02	R 3.09	R 3.25	3.09
District of Columbia	---	---	---	---	---	---	---	---
Florida	R 2.97	R 2.81	R 2.97	R 3.07	R 3.22	R 3.17	R 3.19	3.11
Georgia	R 3.20	R 3.19	R 3.01	R 2.85	R 3.27	R 3.72	R 3.88	3.34
Hawaii	---	---	---	---	---	---	---	---
Idaho *	---	---	---	---	---	---	---	2.94
Illinois	3.68	4.06	3.57	3.67	3.64	4.03	3.83	3.77
Indiana	R 3.05	R 3.00	R 2.96	R 3.33	R 3.39	R 3.85	R 3.86	3.53
Iowa	R 3.23	R 3.69	R 2.97	R 3.15	R 3.15	R 3.06	R 3.45	2.65
Kansas	R 2.40	R 2.39	R 2.31	R 2.32	R 2.39	R 2.60	R 2.72	2.67
Kentucky	R 2.75	R 2.76	R 2.79	R 3.11	R 3.22	R 3.52	R 3.53	3.23
Louisiana	R 1.85	R 1.84	R 1.73	R 1.54	R 1.37	R 1.49	R 2.02	1.74
Maine	3.36	3.65	3.43	3.93	3.88	5.92	5.41	4.69
Maryland	3.77	3.77	3.96	3.00	3.11	3.41	3.33	3.51
Massachusetts	R 3.38	R 2.81	R 3.40	R 3.71	R 5.16	R 5.99	R 5.83	3.99
Michigan	R 3.84	R 3.91	R 3.77	R 3.88	R 3.81	R 4.03	R 3.98	4.00
Minnesota	R 2.87	R 2.86	R 2.70	R 2.58	R 2.51	R 2.94	R 3.08	2.78
Mississippi	R 2.21	2.42	R 2.29	2.20	2.12	2.14	R 2.53	2.35
Missouri	R 3.63	3.57	3.61	3.38	R 3.61	3.89	R 4.13	4.08
Montana	R 4.21	R 4.11	R 4.00	R 3.86	R 3.87	R 3.77	R 4.05	3.22
Nebraska	R 2.65	R 2.60	R 2.45	R 2.39	R 2.42	R 2.61	R 3.03	2.76
Nevada	R 4.32	R 4.08	R 4.15	R 4.11	R 4.13	R 4.31	R 4.32	4.21
New Hampshire	R 3.65	R 3.67	R 4.69	R 4.08	R 4.94	R 5.43	R 5.42	4.31
New Jersey	2.97	2.96	2.98	R 3.42	R 3.43	R 4.04	R 3.99	3.65
New Mexico	R 6.71	R 6.33	R 5.83	R 6.62	R 7.14	R 7.43	R 7.61	3.53
New York	R 4.66	R 4.47	R 4.12	R 4.91	R 4.67	R 5.17	R 4.99	4.72
North Carolina	R 3.00	R 3.06	R 2.86	R 2.84	R 2.82	R 2.96	R 3.56	3.24
North Dakota	3.19	3.13	R 2.90	2.86	2.82	3.08	3.36	3.19
Ohio	R 4.44	R 3.82	R 3.86	R 3.80	R 3.77	R 3.87	R 4.26	4.09
Oklahoma	R 2.00	R 1.85	R 1.81	R 1.98	R 1.91	R 2.02	R 1.83	1.69
Oregon	R 3.30	R 3.32	R 3.29	R 3.28	R 3.33	R 3.31	R 3.40	3.41
Pennsylvania	R 3.80	R 4.16	R 4.01	R 3.81	R 3.83	R 3.94	R 3.78	4.02
Rhode Island	R 4.74	R 3.84	R 3.88	R 4.14	R 5.65	R 6.46	R 6.43	5.40
South Carolina	R 2.80	R 2.84	R 2.68	R 2.64	R 2.84	R 2.98	R 3.38	2.95
South Dakota	R 3.79	R 3.79	R 3.45	R 3.25	R 3.22	R 3.28	R 3.65	3.31
Tennessee	R 3.08	R 3.30	R 3.14	R 3.01	R 2.98	R 3.02	R 3.56	3.22
Texas	R 1.91	R 1.90	1.84	R 1.78	R 1.67	R 1.62	R 2.07	1.93
Utah	R 3.65	R 3.74	R 3.73	R 3.66	R 4.02	R 6.10	R 3.76	3.69
Vermont	3.32	3.22	3.09	2.97	2.76	2.88	3.09	2.99
Virginia	R 3.79	R 2.70	R 2.85	R 3.35	R 3.62	R 4.00	R 4.08	3.81
Washington	R 2.72	R 2.82	R 2.85	R 2.81	R 2.84	R 2.81	R 3.11	2.79
West Virginia	R 3.00	R 2.71	R 2.79	R 2.74	R 2.77	R 2.79	R 2.72	2.95
Wisconsin	R 3.10	R 3.07	R 2.99	R 2.97	R 3.09	R 3.10	R 3.46	3.16
Wyoming	R 3.04	R 2.90	R 2.80	R 2.81	R 2.86	R 2.85	R 2.89	3.03
Total	R 2.54	R 2.53	2.44	R 2.54	2.58	R 2.78	R 3.04	2.69

* The price for small volumes of natural gas representing onsystem sales to industrial consumers in Idaho is included as an annual figure but not distributed to monthly components.

R = Revised Data.

NA = Not Available.

--- = Not Applicable.

Notes: Data for 1991 and 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Average prices for gas delivered to industrial consumers reflect onsystem sales prices only. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy. See Table 28 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries.

Source: Form EIA-857.

**Table 27. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State, 1991-1993
(Dollars per Thousand Cubic Feet)**

State	YTD 1993	YTD 1992	YTD 1991	June 1993	May 1993	April 1993	March 1993	February 1993
Alabama	2.59	1.96	1.97	2.50	3.18	2.69	2.42	2.29
Alaska	.63	.58	.53	.61	.63	.63	.64	.64
Arizona	3.00	2.11	2.00	3.14	3.21	2.64	2.70	3.12
Arkansas	1.87	1.44	1.44	2.14	1.71	1.61	1.50	1.38
California	3.16	2.54	3.12	3.01	3.56	3.20	3.09	3.02
Colorado	2.35	2.00	2.26	2.14	2.46	2.22	2.39	2.33
Connecticut	5.47	2.55	2.26	6.19	9.99	8.63	6.07	3.50
Delaware	3.58	2.61	2.47	3.05	3.90	5.31	2.78	4.38
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.44	2.07	2.13	2.37	2.67	2.59	2.41	2.23
Georgia	3.51	2.80	3.06	3.32	4.25	3.82	3.90	3.51
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	2.72	2.08	2.55	2.42	2.57	2.62	3.00	3.08
Indiana	2.76	2.31	2.37	2.81	3.04	2.57	2.42	2.94
Iowa	3.39	2.78	2.56	3.30	3.65	3.33	3.30	3.34
Kansas	2.35	1.87	1.67	2.18	2.56	2.53	2.29	2.42
Kentucky	3.17	2.65	2.88	3.06	3.87	3.22	2.76	2.74
Louisiana	2.44	1.65	1.57	2.34	2.98	2.55	2.31	2.10
Maine	--	--	--	--	--	--	--	--
Maryland	3.02	2.47	2.45	2.96	3.43	3.10	2.82	2.86
Massachusetts	2.84	2.28	2.48	2.47	3.01	2.88	2.92	3.25
Michigan	.63	.89	.56	.87	.30	.38	.45	.85
Minnesota	2.58	1.69	1.66	2.26	2.82	2.68	2.38	2.52
Mississippi	2.40	1.69	1.65	2.44	2.85	2.30	2.23	1.98
Missouri	2.48	2.25	1.51	2.26	2.79	2.56	2.71	2.42
Montana	5.53	3.59	5.76	3.87	3.34	8.88	10.41	2.78
Nebraska	2.59	2.09	1.73	2.26	2.87	2.45	2.46	2.61
Nevada	2.45	1.66	1.77	2.17	2.45	2.22	2.42	3.11
New Hampshire	2.21	--	--	2.21	2.21	2.22	--	--
New Jersey	2.49	2.02	2.10	2.44	2.70	2.72	2.51	2.35
New Mexico	2.25	1.73	1.69	1.96	2.61	2.36	2.21	2.06
New York	2.85	2.33	2.32	2.64	3.24	2.87	2.76	2.66
North Carolina	3.78	2.72	2.92	3.50	3.90	3.38	3.71	4.11
North Dakota	4.25	--	2.07	--	--	4.27	--	--
Ohio	2.80	2.25	2.21	3.32	3.54	3.72	2.34	2.64
Oklahoma	3.41	3.06	3.04	3.18	3.68	3.39	3.57	3.37
Oregon	2.24	1.70	1.43	--	--	--	2.09	1.99
Pennsylvania	2.59	2.92	3.20	2.56	3.21	3.14	2.58	2.41
Rhode Island	2.66	2.11	2.01	2.66	--	--	--	--
South Carolina	3.17	1.57	1.76	3.08	3.37	3.18	3.20	3.61
South Dakota	2.62	1.02	1.36	--	--	--	2.62	--
Tennessee	--	.66	.95	--	--	--	--	--
Texas	2.46	2.03	1.98	2.31	2.72	2.58	2.40	2.32
Utah	2.06	1.79	1.73	2.17	2.73	1.87	1.86	1.87
Vermont	2.08	1.83	1.55	1.93	2.28	2.28	3.33	3.60
Virginia	2.97	2.47	1.91	3.02	5.31	2.90	3.01	3.10
Washington	4.28	4.18	4.02	5.90	7.68	6.52	4.05	3.73
West Virginia	4.38	2.62	3.74	5.40	3.86	3.80	4.18	--
Wisconsin	2.69	2.10	2.74	2.62	3.02	2.66	2.33	2.68
Wyoming	3.31	3.42	3.58	3.39	3.47	3.41	3.20	3.21
Total	2.65	2.14	2.18	2.47	2.90	2.75	2.61	2.55

See footnotes at end of table.

**Table 27. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)**

State	January 1993	Total 1992	December 1992	November 1992	October 1992	September 1992	August 1992	July 1992
Alabama	2.59	2.28	2.88	2.79	3.20	2.43	2.36	1.98
Alaska	.64	.57	.56	.56	.56	.57	.54	.55
Arizona	3.81	2.28	3.99	3.47	2.40	2.40	2.40	2.21
Arkansas	1.64	1.57	1.35	1.15	2.18	1.85	1.85	1.64
California	3.29	2.81	3.24	3.28	3.41	2.93	2.73	2.57
Colorado	2.51	2.14	2.49	2.45	2.50	1.94	1.80	1.98
Connecticut	6.86	2.74	6.11	7.15	6.29	6.31	2.82	2.58
Delaware	3.65	2.70	5.40	4.89	4.31	3.32	2.68	2.22
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.27	2.30	2.32	2.65	2.88	2.59	2.51	2.41
Georgia	3.90	R 2.89	4.38	4.05	4.32	2.30	2.75	2.83
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	2.99	2.24	3.11	3.05	2.93	2.39	2.43	2.37
Indiana	2.87	2.48	2.81	3.21	3.14	3.00	2.57	2.31
Iowa	3.37	3.08	3.42	3.37	3.77	3.51	3.32	2.80
Kansas	2.40	1.94	2.42	2.22	2.14	1.99	1.98	1.83
Kentucky	2.99	2.77	3.12	3.24	3.38	2.67	2.59	2.46
Louisiana	2.35	1.91	2.35	2.51	2.73	2.16	2.04	1.72
Maine	--	--	--	--	--	--	--	--
Maryland	3.14	2.66	4.07	3.79	3.78	2.82	2.73	2.33
Massachusetts	3.51	R 2.68	3.70	3.27	3.43	2.81	2.67	2.58
Michigan	.68	.81	.64	.67	.56	1.28	.51	.63
Minnesota	2.81	1.85	2.74	2.52	3.35	1.89	1.81	1.76
Mississippi	2.06	R 1.85	2.34	2.46	2.66	2.22	2.17	1.87
Missouri	2.62	R 1.89	2.75	2.61	2.13	2.31	2.14	1.49
Montana	7.62	3.30	2.44	2.38	9.41	3.76	2.93	2.19
Nebraska	2.88	2.28	2.84	2.32	2.46	2.27	2.50	2.12
Nevada	3.17	1.91	3.12	2.44	2.55	1.87	2.25	1.86
New Hampshire	--	R 2.20	--	--	--	2.20	2.20	--
New Jersey	2.66	2.18	3.09	2.98	2.92	2.42	2.35	2.02
New Mexico	2.35	1.99	2.40	2.45	2.67	2.30	2.11	1.72
New York	3.02	2.48	3.21	3.12	3.22	2.55	2.39	2.06
North Carolina	4.16	2.96	4.15	4.10	3.22	3.15	2.83	2.78
North Dakota	--	4.18	4.46	--	--	4.05	4.30	4.03
Ohio	2.79	R 2.31	2.59	4.17	2.66	1.97	2.01	2.11
Oklahoma	3.31	3.20	3.25	3.76	4.11	3.29	3.19	2.92
Oregon	2.96	1.97	2.44	2.15	2.40	2.05	1.99	1.72
Pennsylvania	2.47	R 3.06	3.51	5.19	4.07	3.49	3.20	2.34
Rhode Island	--	2.20	--	--	--	2.84	2.45	2.45
South Carolina	3.78	1.73	3.72	3.33	3.30	2.74	2.46	1.91
South Dakota	--	2.88	2.95	2.92	4.04	--	2.61	--
Tennessee	--	--	--	--	--	--	--	--
Texas	2.40	2.25	2.67	2.69	2.90	2.34	2.30	1.99
Utah	2.03	1.87	2.27	1.80	1.99	1.98	1.92	1.76
Vermont	3.30	2.00	3.14	3.02	2.18	2.24	2.16	2.09
Virginia	2.57	R 2.47	2.70	.48	5.05	2.20	3.10	2.18
Washington	3.70	3.31	4.54	4.57	5.97	3.32	2.94	2.85
West Virginia	4.04	3.53	3.51	3.27	3.34	4.27	3.40	5.36
Wisconsin	3.22	R 2.42	3.41	3.33	3.47	2.80	2.30	2.21
Wyoming	3.25	3.33	3.29	3.22	3.21	3.19	3.22	3.22
Total	2.70	R 2.36	2.81	2.87	3.04	2.51	2.42	R 2.13

See footnotes at end of table.

**Table 27. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State, 1991-1993 (Continued)
(Dollars per Thousand Cubic Feet)**

State	June 1992	May 1992	April 1992	March 1992	February 1992	January 1992	Total 1991	December 1991
Alabama	2.15	2.05	1.86	1.70	1.32	2.28	1.91	2.57
Alaska	.57	.55	.56	.59	.60	.62	.53	.54
Arizona	2.27	2.14	1.81	2.02	2.09	2.35	2.06	3.39
Arkansas	1.50	1.52	1.44	1.36	1.33	1.33	1.44	1.29
California	2.39	2.39	2.50	2.36	2.42	3.22	2.95	3.36
Colorado	1.84	1.98	2.02	1.81	2.26	2.20	2.14	2.34
Connecticut	2.62	2.57	2.25	2.23	6.29	6.30	2.16	5.45
Delaware	2.47	2.86	2.35	2.68	2.63	2.80	2.49	3.08
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.41	2.29	2.01	1.82	1.74	1.93	2.17	2.33
Georgia	2.61	2.99	2.78	3.18	3.19	3.64	2.83	3.08
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	2.29	2.07	2.03	1.69	2.10	2.64	2.14	2.59
Indiana	2.30	2.11	2.44	2.18	2.19	2.63	2.38	2.61
Iowa	3.01	2.93	2.76	2.56	2.35	3.23	2.70	3.31
Kansas	2.08	1.67	1.73	1.87	1.85	2.02	1.65	2.09
Kentucky	2.60	2.71	2.67	2.57	2.32	2.80	2.65	2.75
Louisiana	1.90	1.78	1.56	1.36	1.31	1.75	1.59	1.86
Maine	--	--	--	--	--	--	--	--
Maryland	2.45	2.15	2.38	2.57	2.75	3.44	2.36	3.49
Massachusetts	2.37	2.17	2.19	2.39	3.98	4.48	2.27	3.91
Michigan	.81	1.34	.93	.71	.94	.66	.76	.91
Minnesota	1.64	1.54	1.62	1.53	1.65	2.29	1.71	2.38
Mississippi	1.97	1.72	1.65	1.49	1.33	2.26	1.61	2.08
Missouri	1.94	2.12	1.60	2.89	1.72	2.89	1.51	2.66
Montana	2.48	3.04	1.40	6.28	8.22	7.35	4.33	4.58
Nebraska	2.10	2.31	1.54	2.02	2.58	2.80	1.85	2.21
Nevada	1.95	1.59	1.43	1.53	1.45	1.94	1.78	2.16
New Hampshire	--	--	--	--	--	--	--	--
New Jersey	2.23	2.26	1.84	1.73	2.22	2.83	2.02	2.80
New Mexico	1.77	1.72	1.61	1.64	1.54	2.09	1.73	2.29
New York	2.30	2.28	2.19	2.27	2.37	2.82	2.30	3.13
North Carolina	2.83	2.52	2.53	2.69	2.68	2.86	2.76	2.83
North Dakota	--	--	--	4.28	--	--	4.36	--
Ohio	2.14	2.06	2.08	2.49	2.31	2.46	2.19	2.54
Oklahoma	3.08	2.72	2.74	2.92	3.35	3.83	2.98	3.65
Oregon	1.88	--	--	--	1.53	1.81	1.59	1.94
Pennsylvania	2.73	3.16	2.90	2.91	3.07	3.09	3.05	3.23
Rhode Island	2.27	2.13	2.04	1.86	--	--	2.04	--
South Carolina	1.71	2.56	3.15	1.46	3.29	3.45	1.53	2.44
South Dakota	--	--	--	--	--	2.60	1.77	--
Tennessee	--	--	--	--	--	--	--	--
Texas	2.06	2.03	1.99	1.94	1.92	2.23	2.03	2.43
Utah	1.74	1.67	1.82	1.83	1.88	1.82	1.72	1.85
Vermont	1.94	1.77	1.74	1.63	2.57	2.85	1.72	2.38
Virginia	2.67	2.59	2.32	2.22	2.43	2.54	1.90	2.29
Washington	3.31	3.57	7.71	4.18	3.13	3.01	4.02	4.02
West Virginia	3.26	1.21	--	3.66	3.89	3.60	3.63	3.72
Wisconsin	2.06	2.01	1.94	1.88	2.72	2.89	2.72	3.21
Wyoming	3.31	3.37	3.36	3.48	3.49	3.51	3.51	3.54
Total	2.18	2.11	^R 2.06	1.99	2.03	2.49	2.18	2.64

^a Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

^b Average prices calculated from data reported on Form EIA-176.

^R = Revised Data.

-- = Not Applicable.

Notes: Data for 1992 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Sources: Form FERC-423 and Form EIA-176.

Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993

State	July 1993		June 1993		May 1993		April 1993	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	70.9	20.1	R 71.9	R 18.2	R 75.3	R 17.1	80.3	19.8
Alaska	100.0	73.3	100.0	79.7	100.0	R 70.9	100.0	73.4
Arizona	87.9	24.8	90.3	R 18.7	R 90.9	26.8	89.7	24.0
Arkansas	85.8	13.1	R 84.1	R 14.3	87.5	14.3	R 91.8	16.0
California	75.1	33.7	R 70.0	R 31.4	75.6	R 34.1	79.6	R 35.9
Colorado	92.6	32.4	R 95.2	30.1	R 94.9	30.1	95.5	R 34.2
Connecticut	86.5	68.1	99.2	71.9	R 99.3	69.5	98.0	R 70.0
Delaware	100.0	75.3	100.0	69.3	100.0	R 75.0	100.0	72.5
District of Columbia	96.8	--	99.8	--	100.0	--	100.0	--
Florida	97.0	17.5	R 97.6	R 35.4	97.5	R 30.6	97.3	R 28.6
Georgia	84.3	30.3	81.6	23.1	85.3	R 23.4	R 90.1	R 26.5
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	82.9	.0	R 82.5	.0	87.5	.0	88.0	.0
Illinois	43.0	5.6	43.5	7.2	51.6	R 8.5	R 56.5	R 16.1
Indiana	89.9	13.0	91.4	R 14.2	R 100.0	25.0	99.4	R 26.0
Iowa	89.7	10.1	R 90.3	R 8.0	92.3	12.9	R 96.0	R 12.0
Kansas	82.1	16.9	R 78.8	R 14.4	84.4	R 12.3	R 83.5	R 12.6
Kentucky	89.2	17.8	93.0	24.3	R 91.9	R 28.5	R 93.1	37.7
Louisiana	98.8	31.0	98.8	R 31.8	R 98.9	R 34.6	R 98.5	R 35.3
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	94.9	10.7	96.1	R 47.9	R 94.6	R 7.7	96.2	R 9.1
Massachusetts	99.7	52.3	R 99.8	53.0	R 99.7	R 58.6	99.7	R 52.5
Michigan	48.9	2.7	50.0	3.0	62.2	R 5.3	R 66.6	R 8.6
Minnesota	88.3	32.8	93.4	48.4	99.3	R 50.1	R 99.2	45.9
Mississippi	88.4	29.4	R 91.6	31.1	R 95.6	33.4	96.7	R 32.3
Missouri	71.2	18.5	73.8	17.6	R 80.2	22.4	86.8	R 24.3
Montana	91.3	7.7	R 91.2	9.9	R 95.0	13.8	R 94.0	14.1
Nebraska	87.5	23.3	87.7	23.1	97.8	R 29.5	R 93.0	24.2
Nevada	89.9	3.3	R 90.8	R 3.8	R 92.6	R 3.4	91.1	3.7
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	87.5	53.0	R 86.8	R 53.5	R 88.8	R 54.6	R 91.5	R 55.5
New Mexico	51.9	4.9	R 54.3	2.1	R 59.6	R 10.4	R 61.3	1.7
New York	70.3	13.5	R 67.5	R 16.0	R 72.5	R 14.8	R 78.8	R 22.0
North Carolina	90.0	53.0	R 90.1	R 54.8	100.0	94.3	100.0	R 95.7
North Dakota	58.1	16.6	62.6	R 15.7	73.3	R 19.0	R 76.9	26.2
Ohio	74.3	8.1	73.6	R 6.6	75.8	R 7.3	R 83.6	10.7
Oklahoma	79.2	31.1	82.0	R 28.3	R 88.3	R 27.3	90.2	R 31.1
Oregon	97.6	25.7	97.8	27.2	97.6	R 21.8	97.9	R 22.1
Pennsylvania	NA	NA	R 72.5	R 17.6	71.4	23.6	R 77.7	27.0
Rhode Island	100.0	9.6	100.0	12.1	100.0	10.4	100.0	10.7
South Carolina	94.0	60.4	100.0	R 61.4	100.0	R 55.9	100.0	R 56.3
South Dakota	75.0	55.2	73.3	R 38.4	76.4	R 43.7	81.2	55.1
Tennessee	89.9	32.0	89.6	39.3	R 97.3	R 38.8	95.8	R 45.9
Texas	80.9	29.7	R 78.3	R 27.5	R 77.6	R 29.9	R 83.2	28.0
Utah	100.0	12.3	100.0	12.3	100.0	R 12.2	100.0	R 12.5
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	83.9	10.8	R 86.3	R 14.3	R 89.1	21.7	86.3	R 16.2
Washington	90.6	34.6	89.8	R 38.8	R 90.9	42.1	R 93.7	R 45.2
West Virginia	25.7	11.5	28.4	8.3	R 40.6	8.4	R 53.3	7.7
Wisconsin	87.6	38.1	89.3	R 36.6	R 90.1	R 40.7	R 91.8	R 42.7
Wyoming	97.1	2.1	96.9	R 4.1	R 98.4	3.2	98.2	R 3.1
Total	78.3	26.7	R 78.0	R 26.3	R 81.6	R 28.4	R 84.3	R 29.3

See footnotes at end of table.

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Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993 (Continued)

State	March 1993		February 1993		January 1993		Total 1992	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	82.4	R 20.0	81.8	R 22.1	R 80.4	R 20.4	R 80.7	R 29.9
Alaska	100.0	70.1	100.0	R 73.4	100.0	76.0	100.0	R 69.8
Arizona	R 92.2	28.0	R 93.1	R 25.7	R 93.1	29.3	R 92.6	R 29.6
Arkansas	92.7	16.1	R 93.0	16.6	R 92.5	R 16.7	R 90.7	R 13.8
California	R 76.5	R 36.1	R 81.3	R 44.7	R 78.8	R 31.7	R 74.5	R 27.5
Colorado	R 96.3	32.7	96.2	34.9	96.3	R 35.4	R 95.5	R 32.2
Connecticut	R 97.1	73.5	R 97.6	R 73.5	R 97.1	R 71.6	R 96.5	65.6
Delaware	100.0	73.7	100.0	75.5	100.0	R 71.9	100.0	R 65.0
District of Columbia	100.0	--	100.0	--	R 100.0	--	99.0	--
Florida	R 96.6	R 28.7	96.6	31.0	R 96.5	R 32.6	R 97.7	R 32.9
Georgia	R 94.1	R 35.2	R 92.3	R 37.3	R 90.8	R 32.0	R 88.1	R 35.0
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	R 91.1	.0	R 90.0	.0	R 89.5	.0	85.7	R .3
Illinois	R 58.5	15.4	R 58.5	16.9	R 61.2	R 21.2	R 57.7	R 15.0
Indiana	R 99.6	27.4	93.7	R 26.9	R 94.3	23.9	R 96.8	R 23.2
Iowa	R 95.4	R 15.0	R 96.3	R 18.2	R 96.3	R 16.3	R 95.7	R 17.6
Kansas	R 85.2	R 10.6	82.1	R 8.8	R 83.4	R 10.2	R 84.4	R 10.2
Kentucky	R 95.0	29.0	95.1	21.4	R 94.9	R 20.0	R 93.1	R 35.1
Louisiana	97.9	R 31.8	97.8	R 34.7	R 97.3	R 34.7	R 87.5	R 37.6
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	R 96.5	R 22.1	R 97.4	R 15.0	R 97.3	R 18.6	R 96.0	R 20.1
Massachusetts	99.8	R 51.7	R 99.8	R 55.3	R 99.8	R 56.2	R 99.8	R 45.4
Michigan	71.3	R 10.3	R 71.1	R 10.9	R 73.2	R 11.6	R 68.8	R 9.1
Minnesota	R 96.5	R 48.5	R 96.9	R 48.8	R 98.8	R 50.5	R 96.2	R 42.3
Mississippi	92.7	R 35.9	R 84.5	R 34.6	R 91.7	R 34.9	R 96.4	R 45.5
Missouri	88.8	R 27.3	R 86.4	R 28.7	R 87.9	R 29.4	R 85.5	R 24.5
Montana	R 95.0	R 15.0	94.1	16.1	R 95.5	R 16.5	95.4	R 17.5
Nebraska	R 94.1	42.4	94.4	45.4	93.7	45.0	R 88.2	R 41.2
Nevada	94.3	R 7.6	96.0	6.9	R 97.1	6.1	R 88.3	R 7.5
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	93.9	R 58.6	94.2	60.5	R 93.8	63.4	R 92.4	R 55.7
New Mexico	R 66.2	1.6	R 62.6	R 2.9	67.8	4.8	R 70.0	R 4.3
New York	R 83.2	R 25.6	R 82.4	R 28.4	82.3	R 25.4	R 77.7	R 23.3
North Carolina	100.0	R 92.9	100.0	R 94.0	100.0	R 97.1	R 95.9	R 81.0
North Dakota	R 77.4	29.5	R 73.9	R 31.5	77.1	R 34.3	R 68.9	R 21.6
Ohio	86.7	R 13.6	86.8	12.6	R 89.3	11.2	R 85.6	R 11.6
Oklahoma	R 91.1	R 27.2	R 91.4	R 37.5	91.2	R 41.3	R 88.5	R 23.7
Oregon	98.5	R 23.9	R 99.0	26.0	R 98.6	25.4	97.8	R 20.7
Pennsylvania	79.0	R 25.3	R 79.2	26.7	80.0	R 29.3	R 75.8	R 22.9
Rhode Island	100.0	R 11.7	100.0	11.8	100.0	R 10.8	R 100.0	R 11.4
South Carolina	100.0	67.0	100.0	70.0	R 100.0	R 72.2	R 98.6	R 66.9
South Dakota	84.4	R 54.4	83.9	61.4	86.5	68.3	R 82.4	R 52.6
Tennessee	R 95.9	R 46.5	R 96.3	R 44.9	R 96.0	R 39.2	R 96.4	R 49.6
Texas	R 83.8	R 30.2	R 85.2	29.1	R 83.9	R 30.0	R 79.7	R 31.3
Utah	100.0	12.0	100.0	R 12.3	100.0	R 9.9	100.0	R 11.7
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	R 88.7	R 13.2	90.9	R 15.3	R 89.1	R 14.5	R 90.7	R 25.6
Washington	R 93.9	44.4	R 93.3	R 46.0	93.8	R 48.0	R 87.3	R 37.4
West Virginia	R 54.9	R 8.1	R 54.9	6.7	R 54.3	8.8	R 56.9	R 16.2
Wisconsin	R 94.2	R 49.0	R 95.1	R 48.6	R 94.1	R 46.6	R 91.3	R 41.5
Wyoming	R 98.5	5.0	98.3	R 4.3	R 98.6	R 4.8	R 98.0	R 3.6
Total	R 85.8	R 30.1	R 85.8	R 31.2	R 86.2	R 30.8	R 83.2	R 30.3

See footnotes at end of table.

Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993 (Continued)

State	December 1992		November 1992		October 1992		September 1992	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	R 80.6	R 31.1	R 74.2	R 30.4	R 73.2	R 28.7	R 74.4	R 26.5
Alaska	100.0	73.9	100.0	R 72.3	100.0	71.2	100.0	81.3
Arizona	R 92.9	R 31.6	R 89.1	28.8	R 91.2	R 30.1	90.5	R 27.2
Arkansas	R 90.8	R 20.1	R 88.7	R 15.3	R 87.6	R 14.4	R 86.4	R 12.2
California	R 81.4	R 30.0	R 76.7	R 27.7	R 79.0	R 31.6	R 79.7	R 33.3
Colorado	R 96.2	R 37.0	R 93.7	R 32.4	R 91.2	R 37.3	R 93.6	R 40.5
Connecticut	R 98.4	R 75.3	R 98.2	R 78.9	97.8	R 69.7	98.7	63.9
Delaware	100.0	74.0	100.0	72.3	100.0	R 68.8	100.0	61.9
District of Columbia	R 100.0	—	R 100.0	—	R 100.0	—	R 99.0	—
Florida	R 97.0	R 35.1	R 97.4	R 31.8	R 98.2	R 28.9	R 98.3	R 32.3
Georgia	R 92.9	R 40.3	R 87.9	R 29.4	R 84.6	R 30.0	R 83.4	R 40.6
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	88.3	.0	82.2	.0	77.9	.0	80.2	.0
Illinois	R 59.9	R 20.7	R 60.5	R 22.1	R 55.5	R 19.5	R 47.0	R 12.8
Indiana	R 98.0	R 22.3	R 99.9	R 29.8	99.8	R 28.3	R 91.9	R 20.9
Iowa	R 96.7	R 23.9	R 96.1	R 26.7	R 91.0	R 19.2	R 88.7	R 13.3
Kansas	R 82.7	R 8.6	R 78.0	R 10.4	R 81.1	R 9.8	R 86.9	R 10.7
Kentucky	R 94.9	R 27.0	R 94.6	R 35.4	R 93.0	R 57.3	R 87.9	R 51.3
Louisiana	R 86.4	R 34.0	R 81.4	R 32.8	R 90.6	R 33.5	R 91.1	R 36.4
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	R 97.4	R 30.5	R 97.0	R 41.0	R 95.0	R 18.6	R 94.1	R 8.4
Massachusetts	R 99.8	R 33.9	R 99.7	R 36.6	R 99.6	R 43.6	R 99.6	R 44.7
Michigan	R 73.1	R 12.8	R 68.6	R 8.6	R 61.1	R 5.7	R 49.9	R 4.2
Minnesota	R 97.6	R 54.4	R 96.5	R 48.9	R 99.4	R 45.0	R 93.0	R 39.9
Mississippi	R 97.4	R 44.8	R 95.9	R 45.4	R 95.6	R 43.3	R 95.6	R 43.1
Missouri	R 87.2	R 27.0	R 81.0	R 21.7	R 76.1	R 28.8	R 74.5	R 18.5
Montana	94.6	R 13.2	R 92.8	R 14.1	R 92.0	R 11.1	R 90.6	R 9.3
Nebraska	R 90.9	R 44.6	R 87.1	R 45.8	R 84.5	R 40.0	R 80.5	R 33.4
Nevada	R 95.4	R 14.1	88.5	R 6.4	88.9	R 6.5	82.7	R 6.3
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	96.9	R 59.5	R 94.8	R 63.9	R 86.4	R 57.9	R 80.7	R 55.9
New Mexico	R 61.1	R 9.8	R 57.0	R 8.2	R 57.9	R 3.2	R 60.8	R 9.1
New York	R 81.5	R 27.7	R 82.6	R 24.2	R 76.0	R 21.1	R 69.3	R 16.1
North Carolina	100.0	R 98.9	100.0	R 97.5	99.9	R 96.7	R 89.2	R 75.1
North Dakota	R 68.9	R 31.0	67.3	25.7	56.8	18.0	R 57.2	14.2
Ohio	R 88.5	R 14.5	R 85.7	R 12.8	R 84.2	R 12.2	R 73.1	R 7.4
Oklahoma	R 88.1	R 41.5	R 86.9	R 31.8	R 85.3	R 28.3	R 84.3	R 25.4
Oregon	R 98.4	R 24.4	R 97.4	R 22.7	R 94.6	R 18.7	R 97.8	R 17.8
Pennsylvania	R 79.4	R 34.3	R 74.1	R 30.4	R 74.0	R 29.4	R 69.4	R 20.5
Rhode Island	100.0	R 11.0	100.0	R 12.5	100.0	R 12.1	100.0	R 13.3
South Carolina	100.0	R 74.7	100.0	R 69.8	R 99.7	R 66.6	R 97.0	R 63.2
South Dakota	84.7	R 68.6	81.8	R 64.4	R 76.5	59.2	78.0	54.7
Tennessee	R 97.4	R 48.8	R 97.5	R 48.8	R 97.3	R 48.5	R 91.6	R 38.9
Texas	R 78.6	R 32.0	R 75.3	R 28.0	R 72.4	R 33.3	R 71.9	R 29.4
Utah	100.0	R 13.4	100.0	10.2	100.0	R 11.7	100.0	R 11.9
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	R 90.3	R 30.4	R 86.6	R 30.2	R 89.9	R 26.0	R 83.8	R 30.9
Washington	92.3	R 44.8	86.8	R 36.6	83.4	R 37.1	R 81.6	R 39.3
West Virginia	R 58.9	R 24.2	R 56.8	R 16.7	R 48.1	R 13.6	R 33.4	R 13.8
Wisconsin	R 95.1	R 49.0	R 93.4	R 46.2	R 90.7	R 38.4	R 85.2	R 34.8
Wyoming	R 98.3	R 4.5	R 98.2	R 4.0	R 97.2	R 2.7	R 97.4	R 2.3
Total	R 85.6	R 32.5	R 83.1	R 30.8	R 80.9	R 31.4	R 78.0	R 29.3

See footnotes at end of table.

Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993 (Continued)

State	August 1992		July 1992		June 1992		May 1992	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	74.7	28.9	75.3	29.9	77.6	28.3	79.0	28.4
Alaska	100.0	60.1	100.0	66.7	100.0	69.9	100.0	67.7
Arizona	86.0	26.0	86.3	26.8	88.9	26.3	89.9	26.3
Arkansas	85.4	12.2	85.9	12.4	87.0	13.1	88.4	12.6
California	64.6	29.8	60.9	31.1	74.5	26.2	63.5	24.3
Colorado	93.3	34.6	94.2	40.0	96.0	27.9	95.1	28.5
Connecticut	98.8	61.8	95.8	54.2	87.2	52.1	93.6	54.1
Delaware	100.0	62.3	100.0	59.0	100.0	59.9	100.0	63.4
District of Columbia	99.5	—	91.4	—	100.0	—	97.6	—
Florida	98.1	31.6	98.1	34.5	98.2	38.1	98.3	38.5
Georgia	83.3	35.6	79.7	31.4	82.7	30.1	85.0	40.2
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	82.4	.0	81.0	.0	80.2	.0	83.1	.0
Illinois	49.2	7.9	44.4	7.4	43.4	5.6	53.0	9.1
Indiana	99.6	25.6	92.8	17.8	99.9	22.8	99.7	24.7
Iowa	90.6	13.1	91.3	11.8	93.2	12.8	94.3	14.2
Kansas	88.9	13.6	88.4	12.2	86.8	9.8	88.8	13.5
Kentucky	87.4	42.9	86.7	45.2	86.9	47.3	87.9	39.7
Louisiana	90.2	30.2	90.6	30.6	90.1	28.7	90.5	46.3
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	92.7	9.1	93.1	7.4	92.8	7.0	94.1	5.8
Massachusetts	99.6	44.9	99.7	47.7	99.8	44.2	99.7	48.9
Michigan	51.6	4.0	48.5	4.6	55.5	4.7	66.6	7.2
Minnesota	89.8	36.3	93.1	32.7	88.3	37.1	92.2	35.6
Mississippi	94.8	45.6	95.5	45.1	95.4	43.4	95.2	44.6
Missouri	75.8	21.5	71.9	18.2	80.6	18.6	82.7	17.5
Montana	96.8	14.8	95.4	15.1	94.9	16.3	96.6	17.3
Nebraska	83.6	36.9	85.6	32.1	81.7	33.0	88.7	43.1
Nevada	81.4	6.7	84.8	4.7	84.0	7.5	83.7	6.2
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	80.7	55.7	88.6	52.8	91.3	53.6	94.1	51.8
New Mexico	64.4	2.1	62.4	1.9	66.5	2.4	64.0	7.6
New York	69.3	13.7	72.9	17.3	70.9	15.6	72.4	19.8
North Carolina	86.2	61.1	84.3	46.9	85.8	61.1	88.3	61.8
North Dakota	58.8	13.0	61.6	12.6	63.8	14.7	73.6	21.0
Ohio	73.5	9.2	72.0	7.3	73.9	8.4	78.9	8.4
Oklahoma	85.7	21.8	80.2	16.2	84.1	17.0	85.4	16.8
Oregon	96.7	17.6	97.9	17.5	97.8	20.4	97.7	24.4
Pennsylvania	67.2	17.9	68.1	14.1	73.1	12.3	71.8	14.7
Rhode Island	100.0	9.1	100.0	12.1	100.0	9.8	100.0	15.1
South Carolina	95.8	65.4	95.5	61.9	95.8	64.6	98.5	69.2
South Dakota	74.6	50.3	72.3	32.7	73.5	39.2	80.7	40.9
Tennessee	90.4	43.1	97.3	43.8	95.8	47.9	93.7	50.6
Texas	75.9	32.8	77.0	31.4	77.8	35.0	79.5	31.0
Utah	100.0	11.6	100.0	11.1	100.0	10.7	100.0	11.3
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	85.9	21.5	86.9	14.0	88.4	30.3	88.9	25.0
Washington	80.3	34.6	78.5	36.1	80.7	36.1	83.5	34.8
West Virginia	33.6	14.4	35.8	10.3	39.3	12.6	54.5	14.9
Wisconsin	84.1	33.2	83.3	32.0	82.3	31.9	85.8	36.9
Wyoming	97.1	2.4	96.5	2.3	97.2	2.5	97.9	3.2
Total	76.1	28.6	76.0	27.4	79.4	28.0	79.3	29.8

See footnotes at end of table.

Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993 (Continued)

State	April 1992		March 1992		February 1992		January 1992	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	83.2	29.4	84.0	35.6	86.8	32.2	83.7	29.1
Alaska	100.0	68.8	100.0	69.1	100.0	68.1	100.0	68.7
Arizona	92.7	31.4	96.3	33.0	97.0	32.9	97.2	33.1
Arkansas	92.7	14.4	91.3	10.3	94.7	16.4	93.0	11.5
California	79.0	36.1	75.7	24.0	65.6	22.9	86.6	20.6
Colorado	95.7	25.8	95.9	27.6	96.7	25.0	96.7	28.2
Connecticut	94.4	59.2	95.6	62.7	97.2	72.0	97.7	75.8
Delaware	100.0	61.0	100.0	62.1	100.0	63.7	100.0	65.9
District of Columbia	97.4	—	100.0	—	100.0	—	99.6	—
Florida	98.2	27.8	97.4	29.0	97.2	28.2	96.8	38.2
Georgia	88.2	46.0	89.3	32.6	90.6	28.8	90.8	34.4
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	85.2	.0	87.1	.0	89.0	.0	89.4	.0
Illinois	57.5	11.9	59.5	14.6	58.2	16.8	63.0	21.2
Indiana	99.1	22.4	98.6	20.2	92.4	19.8	93.6	23.2
Iowa	96.2	15.0	96.5	15.5	97.4	19.8	97.6	22.1
Kansas	86.8	10.5	83.9	7.4	83.8	9.4	82.9	8.5
Kentucky	91.9	22.2	93.6	17.6	94.2	20.2	95.4	31.8
Louisiana	90.6	42.4	88.7	43.1	87.7	44.8	82.3	43.6
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	95.6	15.1	96.3	23.5	97.2	29.7	97.2	32.2
Massachusetts	99.8	53.1	99.8	42.4	99.9	47.4	99.9	60.0
Michigan	70.5	10.6	71.4	12.0	74.5	14.0	73.7	15.5
Minnesota	95.5	39.8	96.0	42.4	95.3	40.9	99.6	46.4
Mississippi	96.6	45.5	96.4	47.2	97.3	51.5	96.9	46.2
Missouri	88.1	28.4	89.1	26.2	90.1	31.0	89.7	29.5
Montana	96.5	23.4	96.7	27.3	98.0	26.6	97.1	24.7
Nebraska	90.9	40.3	89.9	48.5	91.6	43.1	91.7	50.2
Nevada	87.2	6.9	88.3	6.6	89.5	9.1	90.6	8.6
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	87.7	48.4	92.1	53.9	95.7	56.6	96.9	55.9
New Mexico	73.0	.7	75.3	1.6	84.9	1.7	84.7	3.8
New York	77.3	24.6	79.5	27.4	78.9	31.0	81.0	33.5
North Carolina	93.1	73.3	99.2	95.1	99.2	93.8	99.3	98.4
North Dakota	71.6	24.9	72.0	21.3	73.7	28.9	71.7	25.7
Ohio	85.7	12.0	88.4	13.2	88.0	14.9	89.1	14.5
Oklahoma	90.9	16.4	87.7	18.6	92.3	19.3	91.6	30.2
Oregon	97.7	24.5	97.4	23.4	98.4	19.4	98.6	19.9
Pennsylvania	75.1	20.4	76.6	21.5	79.6	23.4	77.1	29.3
Rhode Island	100.0	13.3	100.0	11.1	100.0	8.2	100.0	9.2
South Carolina	98.6	61.6	98.9	62.0	99.1	69.0	99.1	77.9
South Dakota	83.1	44.4	85.6	46.5	83.3	53.4	87.0	67.2
Tennessee	97.2	50.7	96.8	56.0	97.1	57.4	96.6	57.3
Texas	83.6	32.4	83.4	28.3	85.6	32.5	86.9	30.1
Utah	100.0	11.8	100.0	10.8	100.0	12.4	100.0	12.8
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	91.7	26.4	93.7	23.5	93.3	27.5	94.6	25.4
Washington	85.5	35.0	88.7	37.5	89.0	38.1	92.1	38.0
West Virginia	63.0	17.4	59.9	18.1	65.9	18.3	65.0	16.4
Wisconsin	90.0	42.3	91.6	44.5	92.1	46.6	92.7	46.3
Wyoming	98.4	4.3	97.8	4.8	98.1	4.9	98.6	5.3
Total	84.0	31.3	84.7	29.9	85.2	31.4	87.1	31.8

See footnotes at end of table.

Table 28. Percentage of Total Deliveries Represented by Onsystem Sales by State, 1991-1993 (Continued)

State	Total 1991		December 1991		November 1991		October 1991	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	82.7	31.4	81.7	30.4	R 75.5	29.3	74.4	27.8
Alaska	100.0	69.1	100.0	70.8	100.0	68.4	100.0	64.7
Arizona	93.2	48.1	97.7	40.4	92.8	31.6	92.8	32.1
Arkansas	91.5	19.4	R 92.3	19.0	90.5	19.1	R 86.5	18.1
California	77.8	29.8	80.3	25.6	69.8	29.8	64.7	24.7
Colorado	96.0	34.7	R 96.3	29.9	R 94.7	31.6	92.3	33.6
Connecticut	93.0	68.2	R 96.6	73.5	93.0	67.2	R 85.9	57.0
Delaware	100.0	65.9	100.0	67.3	100.0	63.9	100.0	64.3
District of Columbia	97.3	—	R 99.5	—	R 95.7	—	R 91.1	—
Florida	97.4	40.7	96.8	40.1	R 96.8	37.4	R 97.8	33.6
Georgia	87.5	36.8	R 92.5	35.7	90.7	37.2	R 82.8	30.8
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	87.6	.4	87.5	.4	R 85.1	.5	R 73.6	.2
Illinois	58.0	15.4	R 60.3	21.1	60.4	21.1	R 54.8	12.8
Indiana	94.2	21.4	R 95.4	25.9	R 97.9	28.5	98.5	22.4
Iowa	R 97.7	28.1	R 98.0	26.1	R 98.5	26.0	R 96.3	19.2
Kansas	89.2	15.1	85.3	11.5	87.7	12.2	82.0	15.0
Kentucky	94.0	26.8	R 95.5	37.4	95.7	38.1	R 91.5	49.8
Louisiana	99.1	45.3	97.6	44.5	R 97.4	45.0	98.4	44.5
Maine	100.0	95.9	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	96.6	15.8	R 97.4	24.2	96.5	16.2	95.8	12.8
Massachusetts	99.8	71.0	R 99.9	68.7	R 99.9	64.6	99.8	67.9
Michigan	68.3	10.8	70.0	12.9	87.2	12.5	R 60.1	6.4
Minnesota	95.2	41.8	R 99.0	55.5	97.0	53.2	R 97.8	42.0
Mississippi	95.9	48.0	R 96.4	47.6	R 95.5	49.3	94.9	48.8
Missouri	85.9	25.3	R 88.5	30.4	85.9	28.2	R 75.6	19.8
Montana	97.5	54.5	97.2	24.4	96.5	22.6	96.3	57.2
Nebraska	91.8	46.4	91.4	60.6	R 90.5	64.3	R 86.1	46.0
Nevada	90.8	14.1	89.0	12.5	R 82.2	14.7	R 84.3	10.6
New Hampshire	100.0	94.1	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	93.9	55.9	97.0	67.3	93.2	60.5	R 90.0	53.4
New Mexico	77.7	10.5	R 72.9	6.3	75.5	8.3	71.7	7.6
New York	80.7	29.4	R 81.1	32.4	79.5	29.5	75.0	23.9
North Carolina	95.0	72.5	R 99.3	97.8	99.0	94.8	R 98.0	88.2
North Dakota	70.0	23.9	R 70.1	27.6	R 67.6	25.4	R 48.7	15.0
Ohio	86.7	12.0	89.8	15.0	R 87.8	13.2	82.6	10.4
Oklahoma	91.3	42.0	90.6	30.0	R 87.6	23.2	81.2	23.8
Oregon	97.9	19.1	98.0	21.6	R 97.6	18.7	95.9	18.7
Pennsylvania	77.3	20.9	76.7	27.4	R 76.4	23.6	72.9	15.9
Rhode Island	100.0	14.3	100.0	9.7	100.0	9.7	100.0	9.7
South Carolina	98.2	70.4	R 98.9	71.1	98.9	70.2	R 97.4	72.4
South Dakota	81.8	55.1	85.2	62.8	R 83.4	59.2	76.7	51.0
Tennessee	95.7	55.6	R 97.8	59.4	97.1	59.6	95.3	52.7
Texas	R 89.3	30.7	R 87.6	27.4	R 84.8	28.7	R 80.7	24.6
Utah	100.0	15.3	100.0	10.4	100.0	11.9	100.0	12.8
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	93.6	28.8	R 93.5	38.2	90.9	40.0	R 92.6	29.4
Washington	92.2	44.2	R 92.1	40.2	88.7	40.6	85.2	45.2
West Virginia	54.9	21.4	R 58.0	18.8	R 55.6	15.9	R 45.2	21.4
Wisconsin	91.0	42.7	92.1	48.7	91.5	47.3	86.7	40.1
Wyoming	99.0	6.3	98.5	6.3	98.6	5.6	R 98.4	4.7
Total	85.1	32.7	R 86.1	32.3	R 85.1	32.8	R 78.7	29.2

R = Revised Data

NA = Not Available.

— = Not Applicable

Notes: Volumes of natural gas reported for the commercial and industrial sectors in this publication include data for both sales and deliveries for the account of others. This table shows the percent of the total State volume that represents natural gas sales to the commercial and industrial sectors. This information may be helpful in evaluating commercial and industrial price data which are based on sales data only. See Appendix C, Statistical Considerations, for a discussion of the computation of natural gas prices.

Source: Form EIA-857.

Figure 6. Percentage of Total Deliveries Represented by Onsystem Sales, 1989-1993

Source: Form EIA-857.

Appendix A

Explanatory Notes

Appendix A

Explanatory Notes

The Energy Information Administration (EIA) publishes monthly data for the supply and disposition of natural gas in the United States in the *Natural Gas Monthly*. These data are preliminary when initially published. Some of these monthly data are estimates

developed by EIA staff. Others are taken or estimated from submitted reports. The table below lists the methodologies for deriving the monthly data to be published initially for the components of supply and disposition.

Table A1. Methodology for Reporting Initial Monthly Natural Gas Supply and Disposition Data

Components	Reporting Methodology
Supply and Disposition	
Marketed Production	Estimated from Historical Data
Extraction Loss	Derived from Marketed Production
Dry Production	Marketed Production minus Extraction Loss
Withdrawals from Storage	Reported on Form EIA-191
Supplemental Gaseous Fuels	Derived from Supply Estimates and Coal Gasification Information
Imports	Estimated from National Energy Board of Canada Information and Liquefied Natural Gas Information
Additions to Storage	Reported on Form EIA-191
Exports	Estimated from Industry Trends and Liquefied Natural Gas Information
Current-Month Consumption	Estimated from Historical Month-to-Month Percent Changes
Prior-Month Consumption	
Lease and Plant Fuel	Derived from Marketed Production
Pipeline Fuel	Derived from Estimates for Lease and Plant Fuel and Deliveries to Consumers
Deliveries to Consumers	
Residential	Estimated from Reports to the Sample Survey Form EIA-857
Commercial	Estimated from Reports to the Sample Survey Form EIA-857
Industrial	Estimated from Reports to the Sample Survey Form EIA-857
Electric Utilities	Reported on Form EIA-759

Note 1. Nonhydrocarbon Gases Removed

Annual Data

Data on nonhydrocarbon gases removed from marketed production--carbon dioxide, helium, hydrogen sulfide, and nitrogen--are reported by State agencies on the voluntary Form EIA-627. For 1991, of the 33 producing States, 23 reported data on nonhydrocarbon gases removed. The 23 States accounted for 59 percent of total 1991 gross withdrawals. Of the 23 States reporting nonhydrocarbon gases removed, 12 reported zero values: Alaska, Arizona, Arkansas, Illinois, Indiana, Maryland, Missouri, Nevada, New York, Oregon, South Dakota, and Virginia. The nine States reporting volumes greater than zero are Alabama, California, Colorado, Florida, Mississippi, New Mexico, North Dakota, Texas, and Wyoming. Two States (Kentucky and Nebraska) reported quantities unknown but considered insignificant. In addition, Kansas, Louisiana, Montana, and Oklahoma, which together accounted for 36 percent of gross withdrawals, did not report nonhydrocarbon gases removed separately. However, their gross withdrawal data excluded all or most of the nonhydrocarbon gases removed on leases. No estimates are made for States not reporting nonhydrocarbon gases removed.

Preliminary Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual* for the year in which the report month falls. Three States report monthly data on nonhydrocarbon gases removed: Alabama, Texas, and Mississippi. Monthly data for California, Colorado, Florida, New Mexico, North Dakota, and Wyoming are estimated based on annual data reported on Form EIA-627. Nonhydrocarbon gases as an annual percentage of gross withdrawals reported by each of the six States is applied to each State's monthly gross withdrawal data to produce an estimate of nonhydrocarbon gases removed.

Final Monthly Data

Beginning with report year 1990, States filing the Form EIA-627, "Annual Quantity and Value of Natural Gas Report," were asked to supply monthly breakdowns of all data previously reported on an annual basis. The sums of the reported figures were used to calculate monthly volumes.

For States not supplying monthly data on the EIA-627, final monthly data are calculated by proportionally allocating the differences between total annual data reported on the Form EIA-627 and the sum of monthly data (January-December).

Note 2. Supplemental Gaseous Fuels

Annual Data

Annual data are published from Form EIA-176.

Preliminary Monthly Data

All monthly data are considered preliminary until after the publication of the *Natural Gas Annual* for the year in which the report month falls. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. This ratio is applied to the monthly sum of these three elements to compute a monthly supplemental gaseous fuels figure.

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly data are estimated based on the revised annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. This ratio is applied to the revised monthly sum of these three elements to compute final monthly data.

Note 3. Production

Annual Data

Natural gas production data are collected from 33 gas-producing States on Form EIA-627 which includes gross withdrawals, vented and flared, repressuring, nonhydrocarbon gases removed, fuel used on leases, marketed production (wet), and extraction loss. The U.S. Minerals Management Service (MMS) also supplies data on the quantity and value of natural gas production on the Gulf of Mexico and Outer Continental Shelf. No adjustments are made to the data.

Estimated Monthly Data

State marketed production data for a particular month are estimated if data are unavailable at the time of publication. The data are estimated based on final monthly data reported on the Form EIA-627 for the previous year.

Estimates for total U.S. marketed production are based on final monthly data reported on the Form EIA-627

for the previous year. State estimates for nonhydrocarbon gas removed, gas used for repressuring, and gas vented and flared are based on the ratio of the that item to gross withdrawals as reported on the EIA-627. These ratios are applied to the month's estimates for gross withdrawals to calculate figures for nonhydrocarbon gases removed, gas used for repressuring, and gas vented and flared. Estimates for gross withdrawal data are calculated from final monthly data filed on Form EIA-627 for the previous year.

Preliminary Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual* for the year in which the report month falls. Preliminary monthly data are published from reports from the Interstate Oil and Gas Compact Commission (IOGCC) and the MMS. Volumetric data are converted, as necessary, to a standard 14.73 psia pressure base. Data are revised as Table 7 monthly data are updated.

Final Monthly Data

Final monthly data for 1991 are the sums of monthly data reported on the annual Form EIA-627, "Annual Quantity and Value of Natural Gas Report." For prior years, the differences between each State's annual production data reported on the EIA-627 and the sum of its monthly IOGCC reports for the year were allocated proportionally to the monthly IOGCC data.

Note 4. Imports and Exports

Annual Data and Final Monthly Data

Annual and final monthly data are published from the annual Form FPC-14, which requires data to be reported by month for the calendar year.

Preliminary Monthly Data - Imports

Preliminary monthly import data are based on data from the National Energy Board of Canada and responses to informal industry contacts and EIA estimates. Preliminary data are revised after the publication of the article "U.S. Imports and Exports of Natural Gas" for the calendar year.

Preliminary Monthly Data - Exports

Preliminary monthly export data are based on historical data from the Form FPC-14, informal industry contacts, and information gathered from natural gas industry trade publications. Preliminary monthly data are revised after publication of "U.S. Imports and Exports of Natural Gas" for the calendar year in which the report month falls.

Note 5. Consumption

All Annual Data

All consumption data except electric utility data are from the Form EIA-857 and Form EIA-176. No adjustments are made to the data. Electric utility data are reported on Form EIA-759.

Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual*.

Total Consumption

Preliminary Monthly Data

The most current month estimate is calculated based on the arithmetic average change from the previous month for the previous 3 years. The following month this estimate is revised by summing the components (pipeline fuel, lease and plant fuel, and deliveries to consumers).

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly total consumption is obtained by summing its components.

Residential, Commercial, and Industrial Sector Consumption

Preliminary Monthly Data

Preliminary monthly residential, commercial, and industrial data are from Form EIA-857. See Appendix C, "Statistical Considerations," for a detailed explanation of sample selection and estimation procedures.

Price data are representative of prices for gas sold and delivered to residential, commercial, and industrial consumers. These prices do not reflect average prices of natural gas transported to consumers for the account of third parties or "spot-market" prices.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are estimated by allocating annual consumption data from the Form EIA-176 to each month in proportion to monthly volumes reported in Form EIA-857.

Electric Utility Sector Consumption

All Monthly Data

Monthly data published are from Form EIA-759.

Pipeline Fuel Consumption

Preliminary Monthly Data

Preliminary data are estimated based on the pipeline fuel consumption as an annual percentage of total consumption from the previous year's Form EIA-176. This percentage is applied to each month's total consumption figure to compute the monthly estimate.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are based on the revised annual ratio of pipeline fuel consumption to total consumption from the Form EIA-176. This ratio is applied to each month's revised total consumption figure to compute final monthly pipeline fuel consumption estimates.

Lease and Plant Fuel Consumption

Preliminary Monthly Data

Preliminary monthly data are estimated based on lease and plant fuel consumption as an annual percentage of marketed production. This percentage is applied to each month's marketed production figure to compute estimated lease and plant fuel consumption.

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly data are based on a revised annual ratio of lease and plant fuel consumption to marketed production from Form EIA-176. This ratio is applied to each month's revised marketed production figure to compute final monthly lease and plant fuel consumption estimates.

Note 6. Extraction Loss

Annual Data

Extraction loss data are calculated from filings of Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." For a fuller discussion, see the *Natural Gas Annual*.

Preliminary Monthly Data

Preliminary data are estimated based on extraction loss as an annual percentage of marketed production. This percentage is applied to each month's marketed production to estimate monthly extraction loss.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are estimated by allocating annual extraction loss data to each month based on its total natural gas marketed production.

Note 7. Natural Gas Storage

Underground Natural Gas Storage

All monthly data concerning underground storage are published from the EIA-191. A new EIA-191 became effective in January 1991. Injection and withdrawal data from the EIA-191 survey are adjusted to correspond to data from Form EIA-176 following publication of the *Natural Gas Annual*.

Underground and Liquefied Natural Gas Storage

The final monthly and annual storage and withdrawal data for 1987 through 1991 shown in Table 2 include both underground and liquefied natural gas (LNG) storage. Underground storage data are obtained from

the EIA-191 and EIA-176 surveys in the manner described earlier. Annual data on LNG additions and withdrawals are taken from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying it to annual LNG data.

Note 8. Average Wellhead Value

Annual Data

Form EIA-627 requests State agencies to report the quantity and value of marketed production. When complete data are unavailable, the form instructs the State agency to report the available value and the quantity of marketed production associated with this value. A number of States reported volumes of production and associated values for other than marketed production. In addition, information for several States which were unable to provide data was obtained from Form EIA-176. It should be noted that Form EIA-176 reports a fraction of State production. The imputed value of marketed production in each State is calculated by dividing the State's reported value by its associated production. This unit price is then applied to the quantity of the State's marketed production to derive the imputed value of marketed production.

Initial Monthly Data

An initial estimate is calculated based on the statistical relationship between U.S. monthly wellhead gas prices and the monthly composite spot wellhead prices published in the *Natural Gas Week*. The estimate is prepared using the same methodology that generates monthly gas price estimates for EIA's *Short-Term Energy Outlook*. The initial estimate is the latest monthly estimate presented.

Preliminary Monthly Data

A preliminary estimate of the U.S. gas price is made each month based on the change in the production-weighted gas price from four States: Mississippi, New Mexico, Oklahoma, and Texas. Gas prices for these four States are used because both their gas production and value represent a substantial sample of the U.S. gas production and value (roughly 50 percent), and their prices are readily available and provide a consistent series. The latest preliminary U.S. gas price estimate is calculated by multiplying the preliminary U.S. gas price estimate for the prior month by the ratio of the four States' gas price for the latest month to that of the prior month. This estimate replaces the initial gas price estimate.

Final Monthly Data

Preliminary monthly gas price data for Mississippi, New Mexico, Oklahoma, and Texas are replaced by final monthly data that are adjusted to match the annual prices published in the *Natural Gas Annual* for each State. A revised set of the monthly U.S. gas price estimates are derived based on the monthly change in the production-weighted prices for these four States and adjusted to match the U.S. gas price published in the *Natural Gas Annual*.

Note 9. Financial Data of Major Interstate Pipeline Companies

The prices in Table 4 for imports and purchases from producers by major interstate pipeline companies, and all data in Tables 8 through 12 are derived from Form FERC-11. Form FERC-11 is filed monthly by the approximately 51 major interstate natural gas pipeline companies. A major pipeline company is defined as one "whose combined sales for resale, and gas transported interstate or stored for a fee exceeded 50 billion cubic feet in the previous calendar year."

Data reported by the major interstate pipeline companies on Form FERC-11 generally reflect the timing of data entry, revision, and/or reclassification of accounts in the companies' accounting records in accordance with the FERC regulations and regulatory filings. Certain data may also be estimated. Consequently, the data reported and shown in Tables 8 through 12 for any given month may include or reflect out-of-period dollar or volume adjustments, restatements or revisions, or account reclassifications. The dollar amounts reported as paid or received and volumes reported as delivered or received may also include amounts paid, delivered, or received under contractual provisions such as prepayment, take-or-pay, minimum take, or minimum bill provisions. Unless otherwise footnoted, the individual data items, computed averages, and aggregated totals shown include the effect of any and all such adjustments, revisions, estimates, reclassifications, and/or contractual provisions. Average prices are not reported on the FERC-11. The averages shown are computed by dividing the total dollars reported for the particular item by the total volume reported for the same item.

Final Monthly Data

Final revisions for the prior year's data are made upon receipt of the current data which will indicate any revisions. Revisions are made on a month by month basis.

Note 10. Balancing Item

The "balancing item" category represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperatures and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycles and calendar periods; and imbalances resulting from the merger of data reporting systems, which vary in scope, format, definitions, and type of respondents.

Annual Data

Annual data are from the *Natural Gas Annual*. For an explanation of the methodology involved in calculating annual "balancing item" data, see the *Natural Gas Annual*.

Preliminary Monthly Data

Preliminary monthly data in the "balancing item" category are calculated by subtracting dry gas production, withdrawals from storage, supplemental gaseous fuels, and imports from total supply/disposition.

Appendix B

Data Sources

Data Sources

The data in this publication are taken from survey reports authorized by the U.S. Department of Energy (DOE), Energy Information Administration (EIA) and by the Federal Energy Regulatory Commission (FERC). The EIA is the independent statistical and analytical agency within the DOE. The FERC is an independent regulatory commission within the DOE which has jurisdiction primarily in the regulation of electric utilities and the interstate natural gas industry. The EIA conducts and processes some of the surveys authorized by the FERC.

Data are collected from two annual surveys and five monthly surveys. Filings with the FERC also provide sources of data for this publication.

The annual reports are the Form EIA-176, a mandatory survey of all companies that deliver natural gas to consumers or that transport gas across State lines, and the Form EIA-627, a voluntary survey completed by energy or conservation agencies in the gas-producing States.

The monthly reports include three surveys of the natural gas industry and two surveys of the electric utility industry. The natural gas industry survey is the Form EIA-191 filed by companies that operate underground storage facilities, the Form FERC-11 filed by major interstate natural gas pipeline companies, and the Form EIA-857 filed by a sample of companies that deliver natural gas to consumers. The electric utility industry surveys are the Form EIA-759 filed by all generating electric utilities and the Form FERC-423 filed by fossil fueled plants. Responses to these five monthly surveys are mandatory.

A description of the survey respondents, reporting requirements, and processing and editing of the data is given on the following pages for each of the surveys. Also shown are copies of the EIA and FERC survey forms that are sources of data for this publication.

Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"

Survey Design

The original version of Form EIA-176 was approved in 1980 with a mandatory response requirement. Prior to 1980, published data were based on voluntary responses to Bureau of Mines, U.S. Department of the Interior predecessor Forms BOM-6-1340-A and BOM-6-1341-A of the same title. Beginning with 1990 data, the responses are not considered proprietary.

In 1982, the scope of the revised EIA-176 survey was expanded to collect the number of electric utility consumers in each State, volumes of gas transported to industrial and electric utility consumers, detailed information on volumes transported across State borders by the respondent for others and for the responding company, and detailed information on other disposition. These changes were incorporated to provide more complete survey information with a minimal change in respondent burden.

In 1988, the Form EIA-176 was revised to include data collection for deliveries of natural gas to commercial consumers for the account of others. The revised form was approved for use during report years 1987 through 1989. Response to the form was mandatory.

A short version of Form EIA-176 was also approved in 1988. Companies engaged in purchase and delivery activities, but not in transportation and storage activities, may file the short form. Usually, these companies are municipals handling small volumes of gas.

In 1990, revisions to the Form were approved that permitted collection of data on deliveries of natural gas for use as a vehicle fuel and detailed underground storage information. Data filed on the EIA-176 are no longer held confidential.

Survey Universe and Response Statistics

The Form EIA-176 is mailed to all identified interstate and intrastate natural gas pipeline companies, investor and municipally owned natural gas distributors, underground natural gas storage operators, synthetic natural gas plant operators, and field, well, or processing plant operators that deliver natural gas directly to consumers (including their own industrial facilities) and/or that transport gas to, across, or from a State border through field or gathering facilities.

Each company and its parent company or subsidiaries were required to file if they met the survey specifications. The original mailing in 1992 for report year 1991 totaled 2,116 questionnaire packages. To this original mailing, 14 names were added and 34 were deleted as a result of the survey processing. Additions were the result of comparisons of the mailing list to other survey mailing lists. Deletions resulted from post office returns and determinations that companies were out of business, sold, or not within the scope of the survey. After all updates, the survey universe was 2,096 responses from approximately 1,800 companies.

Following the original mailing, second request mailing, and nonrespondents followup, 2,092 responses were entered into the data base, and there were four nonrespondents.

Summary of Form EIA-176 Data Reporting Requirements

The EIA-176 is a multiline schedule for reporting all supplies of natural gas and supplemental gaseous fuels and their disposition within the State indicated. Respondents file completed forms with EIA in Washington, DC. Data for the report year are due by April 1 of the following year. Extensions of the filing deadline for up to 45 days are granted to any respondent on request.

All natural gas and supplemental gaseous fuels volumes are reported on a physical custody basis in thousand cubic feet (Mcf), and dollar values are reported to the nearest whole dollar. All volumes are reported at 14.73 pounds per square inch absolute pressure (psia) and 60 degrees Fahrenheit.

Routine Form EIA-176 Edit Checks

A series of manual and computerized edit checks are used to screen the Form EIA-176. The edits performed include validity, arithmetic, and analytical checks.

The incoming forms are reviewed prior to keying. This prescan determines if the respondent identification (ID) number and the company name and address are correct, if the data on the form appear complete and reasonable, and if the certifying information is complete.

Manual checks on the data are also made. Each form is prescanned to determine that data were reported on the correct lines. The flow of gas through interstate pipelines is checked at the company level to ensure that each delivery from a State is matched with a corresponding receipt in an adjoining State.

After the data are keyed, computer edit procedures are performed. Edit programs verify the report year, State code, and arithmetic totals. Further tests are made to ensure that all necessary data elements are present and that the data are reasonable and internally consistent. The computerized edit system produces error listings with messages for each failed edit test. When problems occur, respondents are contacted by telephone and required to file amended forms with corrected data.

Other EIA Publications Referencing Form EIA-176

Data from Form EIA-176 are also published in the *Natural Gas Annual*.

Figure B1. Form EIA-176

EIA-176 (Revised 1991)

**U.S. DEPARTMENT OF ENERGY
ENERGY INFORMATION ADMINISTRATION**

Form Approved
OMB No. 19050175
Expires: 12/31/93

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See Section VI of the Instructions for confidentiality statement. Public reporting burden for this collection of information is estimated to average 19.8 hours per response, including the time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards EI-73, Mail Station 2F-081 Forrestal, 1000 Independence Ave SW, Washington DC 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington DC 20503.

EIA USE

Affix mailing label or enter mail address

Control (ID) No. _____

Name: _____
Operations in (State): _____
Street or Post Office Box: _____
City, State, Zip Code: _____
Attention: _____

EIA COPY. Tear out, complete, and return to:

Energy Information Administration
Mail Station: BG-094 FORSTL
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-176

PART I: IDENTIFICATION

1.0 Control No.	2.0 Company Name:	3.0 Report State	EIA <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	4.0 Resubmittal <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	Date: _____
5.0 Company status, name, and/or address change or correction. (Check appropriate box)					
a. ☐ Name and address on mailing label are correct b. ☐ Change name, attention line, and/or mail address as indicated below c. ☐ Company was sold to, or merged with, company entered below d. ☐ Company went out of business. Customer accounts taken over by company entered below e. ☐ Other changes, corrections, or comments _____ _____					
5.1 Change mail address to:					
a. Company Name: _____ b. Operations in (State): _____ c. Street or Post Office Box: _____ d. City, State, Zip Code: _____ e. Attention: _____					
6.0 Contact person:					
Name: _____		Telephone Number: _____	Area Code: _____	No: _____	Ext: _____

PART II: CERTIFICATION AND DISCLOSURE STATEMENT

1.0 I certify that (Check appropriate box):	
a. ☐ The information provided herein and appended hereto is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge. b. ☐ My company does not meet any of the criteria set forth in Section II, "Who must submit," of the instructions and is therefore not required to complete and submit a Form EIA-176 for the report State.	
2.0 Name	3.0 Title
4.0 Signature	5.0 Date
Title 18, USC 1001, makes it a crime for any person knowingly and willingly to make to any agency or department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.	

Page 1

EIA-176, ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA 	4.0 Resubmittal Date:
-----------------	------------------	------------------	--	---

PART III: TYPE OF COMPANY AND GAS ACTIVITIES OPERATED IN THE REPORT STATE**1.0 Type of Company (check one)**

- a ☐ Investor owned distributor
b ☐ Municipally owned distributor
c ☐ Interstate pipeline
d ☐ Intrastate pipeline
e ☐ Storage operator
f ☐ SNG plant operator
g ☐ Integrated oil and gas
h ☐ Producer
i ☐ Gatherer
j ☐ Processor
k ☐ Other (specify) _____

2.0 Gas Activities Operated On-system Within the Report State (check all that apply)

a ☐ Produced Natural Gas	m ☐ Delivered for Resale
b ☐ Gathered	n ☐ Delivered directly to consumers
c ☐ Processed	o ☐ Other (specify) _____
d ☐ Purchased	
e ☐ Transported Interstate	
f ☐ Transported Intrastate	
g ☐ Stored Underground	
h ☐ Stored LNG	
i ☐ Injected Propane-air	
j ☐ Produced SNG	
k ☐ Imported	
l ☐ Exported	

PART IV: SUPPLY OF NATURAL AND SUPPLEMENTAL GAS RECEIVED WITHIN OR TRANSPORTED INTO REPORT STATE

	Volume (Mcf at 14.73 psia)	e or f	Cost (Dollars)	e or f
1.0 Company-owned natural gas produced on-system				
2.0 On-system purchases received:				
2.1 From producers, gatherers, and/or gas processors				
2.2 From pipelines and/or distribution companies				
2.3 From synthetic natural gas plants or SNG pipeline				
2.4 At State line or U.S. border from:				
Company _____				
State or Country _____				
(Continue on Part VI, if more space is needed)				
3.0 Transportation and/or exchange receipts:				
3.1 Received within the report State				
3.2 Received at the State line or U.S. border from:				
Company _____				
State or Country _____				
(Continue on Part VI, if more space is needed)				
4.0 Transported into the report State from:				
State or Country _____				
(Continue on Part VI, if more space is needed)				
5.0 Withdrawn from storage facilities:				
5.1 Withdrawn from company-operated underground storage:				
5.1.1 Company-owned natural gas				
5.1.2 Natural gas owned by others				
5.2 Company-owned natural gas received directly from underground storage operators				
5.3 Received from underground storage operators for the account of others				
5.4 From liquefied natural gas storage				
6.0 Synthetic natural gas produced				
7.0 Other sources of supply (specify source and/or kind of fuel): _____				
(Continue on Part VI, if more space is needed)				
8.0 Total supply within report state				

EIA COPY Page 2

EIA-176, ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA	4.0 Resubmittal Date: 	
PART V: DISPOSITION OF NATURAL AND SUPPLEMENTAL GAS WITHIN OR TRANSPORTED OUT OF REPORT STATE					
		Volume (Mcf at 14.73 psia)	e or f	Cost or Revenue (Dollars)	e or f
1.0 Used in well, lease, and field operations					
2.0 Returned to oil and/or gas reservoirs					
3.0 Used, removed, or lost in gas processing or treating plants					
3.1 Company-operated plants:					
3.1.1 Volume delivered to company-operated plants for redelivery		Mcf			
3.1.2 Volume used for plant fuel					
3.1.3 Extraction loss estimated gas phase volume of liquids extracted					
3.1.4 Volume of nonhydrocarbons removed (e.g., H ₂ S & CO ₂)					
3.1.5 Vented, flared, and/or lost					
3.2 Plants operated by others:					
3.2.1 Volume delivered to plants operated by others for redelivery		Mcf			
3.2.2 Total volume used, removed, vented, and/or flared					
4.0 Added to storage facilities:					
4.1 Injected into company-operated underground storage					
4.1.1 Company-owned natural gas					
4.1.2 Natural gas owned by others					
4.2 Company owned gas delivered directly to underground storage operators					
4.3 Delivered to underground storage operators for the account of others					
4.4 Added to liquefied natural gas storage					
5.0 Deliveries of company-owned natural gas					
5.1 Delivered to other pipelines within the report State					
5.2 Delivered to resellers (e.g. distribution companies)					
5.3 Delivered at the State line or U.S. border to:					
Company					
State or Country					
(Continue on Part VI if more space is needed)					
5.4 Delivered directly to consumers:		Number of consumers			
5.4.1 Residential sales					
5.4.2 Commercial sales					
5.4.3 Industrial sales					
5.4.4 Electric utility sales					
5.4.5 Natural gas used as vehicle fuel					
6.0 Average heat content of gas delivered directly to consumers		Btu			
7.0 Natural gas transported for the account of others					
7.1 Delivered to other pipelines within the report State					
7.2 Delivered to resellers for the account of others					
7.3 Delivered at the State line or U.S. border to:					
Company					
State or Country					
(Continue on Part VI if more space is needed)					
7.4 Transported and delivered to consumers for the account of others:		Number of consumers			
7.4.1 Residential consumers					
7.4.2 Commercial consumers					
7.4.3 Industrial consumers					
7.4.4 Electric utility consumers					
7.4.5 Natural gas used as vehicle fuel					
8.0 Deliveries or exchange gas					
8.1 Delivered at point(s) within the report State					
8.2 Delivered at the State line or U.S. Border to:					
Company					
State or Country					
(Continue on Part VI if more space is needed)					
9.0 Used in pipeline, storage, and/or distribution operations					
10.0 Other disposition (specify)					
(Continue on Part VI if more space is needed)					
11.0 Total disposition accounted for					
12.0 Unaccounted for gas supply (+) or disposition (-)					

EIA-176, ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA 	4.0 Resubmittal ☐	Date: _____
PART VI: CONTINUATION SHEET (To be used only if insufficient space was provided on Part IV and/or Part V)					Sheet _____ of _____
Supply (Continued)		Volume (Mcf at 14.73 psia)	e or f	Cost or Revenue (Dollars)	e or f
PART IV, 2.4 On-system purchases received at State line or U.S. border from: (Continued)					
Company _____					
State or Country _____					
Company _____					
State or Country _____					
PART IV, 3.2 Transportation and or exchange receipts at State line or U.S. border from: (Continued)					
Company _____					
State or Country _____					
Company _____					
State or Country _____					
PART IV, 4.0 Transported into report State from: (Cont'd)					
State or Country _____					
State or Country _____					
State or Country _____					
State or Country _____					
PART IV, 7.0 Other sources of supply (specify source and/or kind of fuel): (Continued)					

Disposition (Continued)					
PART V, 5.3 Company-owned natural gas deliveries at State line or U.S. border to: (Continued)					
Company _____					
State or Country _____					
Company _____					
State or Country _____					
PART V, 7.3 Transported for the account of others out of report State to: (Continued)					
State or Country _____					
State or Country _____					
State or Country _____					
State or Country _____					
PART V, 8.2 Deliveries of exchange gas at State line or U.S. border to: (Continued)					
Company _____					
State or Country _____					
Company _____					
State or Country _____					
PART V, 10.0 Other disposition (specify): (Continued)					

EIA COPY Page 4

[illegible]

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Date:

PART VII: FOOTNOTES

[illegible]

EIA COPY Page 5

Figure B2. Form EIA-176, Short Form

EIA-176 (Revised 1991)

U.S. DEPARTMENT OF ENERGY ENERGY INFORMATION ADMINISTRATION

Form Approved
OMB No. 19050175
Expires: 12/31/93

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19 ☐ SHORT FORM

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See Section VI of the instructions for confidentiality statement. Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards, E1-73, Mail Station 2F-081 Forrestal, 1000 Independence Ave SW, Washington DC 20585, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington DC 20503.

EIA USE

Affix mailing label or enter mail address

Control (ID) No. _____

Name: _____

Operations in (State): _____

Street or Post Office Box: _____

City, State, Zip Code: _____

Attention: _____

EIA COPY. Tear out, complete, and return to:

Energy Information Administration
Mail Station: BG-094 FORSTL
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-176

PART I: IDENTIFICATION

1.0 Control No.	2.0 Company Name:	3.0 Report State	EIA ☐	4.0 Resubmittal ☐ Date: _____
-----------------	-------------------	------------------	------------------------------	--

5.0 Company status, name, and/or address change or correction. (Check appropriate box.)

- a. ☐ Name and address on mailing label are correct.
- b. ☐ Change name, attention line, and/or mail address as indicated below.
- c. ☐ Company was sold to, or merged with, company entered below.
- d. ☐ Company went out of business. Customer accounts taken over by company entered below.
- e. ☐ Other changes, corrections, or comments: _____

5.1 Change mail address to:

- a. Company Name: _____
- b. Operations in (State): _____
- c. Street or Post Office Box: _____
- d. City, State, Zip Code: _____
- e. Attention: _____

6.0 Contact person:

Name: _____ Telephone Area Number: _____ Code _____ No. _____ Ext. _____

PART II: CERTIFICATION AND DISCLOSURE STATEMENT

1.0 I certify that (Check appropriate box):

- a. ☐ The information provided herein and appended hereto is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge.
- b. ☐ My company does not meet any of the criteria set forth in Section II, "Who must submit," of the instructions and is therefore not required to complete and submit a Form EIA-176 for the report State.

2.0 Name	3.0 Title
4.0 Signature	5.0 Date

Title 18, USC 1001, makes it a crime for any person knowingly and willingly to make to any agency or department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

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☐ **Date:**

1.0 Type of Company (check one)

a.	☐	Investor owned distributor
b.	☐	Municipally owned distributor
c.	☐	Interstate pipeline
d.	☐	Intrastate pipeline
e.	☐	Storage operator
f.	☐	SNG plant operator
g.	☐	Integrated oil and gas
h.	☐	Producer
i.	☐	Gatherer
j.	☐	Processor
k.	☐	Other (specify) _____

a.		Produced Natural Gas
b.		Gathered
c.		Processed
d.		Purchased
e.		Transported Interstate
f.		Transported Intrastate
g.		Stored Underground
h.		Stored LNG
i.		Injected Propane-air
j.		Produced SNG
k.		Imported
l.		Exported

- m. ☐ Delivered for Resale
n. ☐ Delivered directly to consumers
o. ☐ Other (specify)

2.0 On-system purchases received

- 2.1 From producers, gatherers, and/or gas processors
- 2.2 From pipeline, distribution, and/or storage operators
- 2.3 From synthetic natural gas plants or SNG pipeline

(Source and/or kind of fuel)

(Continue on Part VI, if more space is needed)

8.0 Total supply within report State

Volume
(Mcf at 14.73 psia)

8
of
f

Cost
(Dollars)

of

9.0 Used in pipeline, storage and/or distribution operations

5.4 Delivered directly to consumers

(Type of transaction
and consumer)

(Number of
consumers)

- 5.4.1 Residential sales
- 5.4.2 Commercial sales
- 5.4.3 Industrial sales
- 5.4.4 Electric utility sales

6.0 Average heat content of gas delivered
directly to consumers
(Btu per cubic foot)

Btu

10.0 Other disposition (specify)

(Continue on Part VI, if more space is needed)

11.0 Total disposition accounted for

12.0 Unaccounted for gas supply (+) or disposition (-)

Volume
(Mcf at 14.73 psia)

8
Or
4

Cost or Revenue
(Dollars)

8
of
4

--	--

EIA COPY **Page 3**

Form EIA-627, "Annual Quantity and Value of Natural Gas Report"

Survey Design

Beginning with 1980, natural gas production data previously obtained on an informal basis from State conservation agencies were collected on Form EIA-627. This form was designed by EIA to collect annual natural gas production data from the appropriate State agencies under a standard data reporting system within the limits imposed by the diversity of data collection systems of the various producing States. The form was redesigned in 1990 to collect monthly breakdowns of all annual data elements. Data are not considered proprietary. It was also designed to avoid duplication of effort in collecting production and value data by producing States and to avoid an unnecessary respondent burden on gas and oil well operators.

Survey Universe and Response Statistics

Form EIA-627 is mailed to energy or conservation agencies in all 33 natural gas producing States. All producing States participate voluntarily in the EIA-627 survey by filing the completed form or by responding to telephone contacts. For 1991, data on the quantities of nonhydrocarbon gases removed were reported by the appropriate agencies of 23 of the 33 States. These 23 States accounted for 59 percent of total 1991 gross withdrawals. In addition, gross withdrawal data from Kansas, Oklahoma, Louisiana, and Montana, which together accounted for 36 percent of total production, excluded all or most of the nonhydrocarbon gases removed on leases.

Summary of Form EIA-627 Data Reporting Requirements

Form EIA-627 is a multipart annual form that collects data on the monthly and annual production volume of natural gas (including gross withdrawals from both gas and oil wells); volumes returned to formation for repressuring, pressure maintenance, and cycling; quantities vented and flared; quantities of nonhydrocarbon gases removed; quantities of fuel used on leases; marketed production; the value of marketed production; and the number of producing gas wells.

Respondents are asked to report all volumes in million cubic feet at the State's standard pressure base and at 60 degrees Fahrenheit. All dollar values are reported in thousands.

Routine Form EIA-627 Edit Checks

Each filing of Form EIA-627 is manually checked for reasonableness and mathematical accuracy. Information on the forms is compared to totals of monthly data reported to the Interstate Oil and Gas Compact Commission (see Appendix B, "Data Sources"). Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Reasonableness of data is assessed by comparing reported data to the previous year's data. State agencies are contacted by telephone to correct errors. Amended filings or resubmissions are not a requirement, since participation in the survey is voluntary.

Other EIA Publications Referencing Form EIA-627

Data from Form EIA-627 are also published in the EIA publication, *Natural Gas Annual*.

Interstate Oil and Gas Compact Commission Form "Monthly Report of Natural Gas Production"

Survey Design

The Interstate Oil Gas Compact Commission (IOGCC) is an organization comprised of 32 gas and oil producing States; the Governor of each State sits on the board of the IOGCC. The IOGCC form, "Monthly Report of Natural Gas Production," (Figure B4) is a voluntary report filed to the IOGCC by most of the producing States. The IOGCC forwards copies of these forms to the EIA. The purpose of the form is to standardize, to the extent possible, the reporting of natural gas data by the States. Data are not considered proprietary.

Survey Universe and Response Statistics

Most of the 32 States report data to the IOGCC. Two exceptions are Florida, which submits its own form, and California, whose data are taken from the Conservation Committee of California Oil Producers publication. Reports on State production are forwarded to the EIA by the IOGCC approximately 80 days after the end of the report month.

Figure B3. Form EIA-627

EIA-627 (Revised 1992)

U.S. DEPARTMENT OF ENERGY
Energy Information AdministrationForm Approved
OMB No. 19050175
Expires: 12/31/93

ANNUAL QUANTITY AND VALUE OF NATURAL GAS REPORT

PART I: IDENTIFICATION DATA							
1. Name of State Reporting		2. Calendar Year Being Reported		19 <input type="text"/>			
3. Name of Office/Agency		4. Office Address (Street, City, State, Zip Code)					
5. Name of Contact Person		6. Phone Number					
PART II: NATURAL GAS VOLUMES (REPORT ALL VOLUMES IN MILLIONS OF CUBIC FEET)							
Enter the pressure base at which all volumes are reported (psia at 60°F)							
Enter the total number of producing gas wells in operation as of December 31 for the reporting year.							
Month	Gross Withdrawals		Used for Repressuring Etc.	Vented and Flared	Nonhydrocarbon Gases Removed	Natural Gas Used as Fuel on Leases	Marketed Production
	Gas and Condensate Wells	Oil Wells (Casinghead)					
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							
TOTAL							

This report is collected under P. L. 93-275, Federal Energy Administration Act of 1974. Your voluntary cooperation and response are urgently needed to provide comprehensive, accurate and timely energy information. Because the data collected on EIA-627 are already aggregated by state, no confidentiality pledges are required.

EIA-627, ANNUAL QUANTITY AND VALUE OF NATURAL GAS REPORT																	
PART III: Value of Marketed Production (Wellhead Sales Prices)																	
Enter the available value of marketed production		\$															
REPORT IN THOUSANDS OF DOLLARS																	
Enter the quantity of marketed production associated with the value entered																	
REPORT IN MILLIONS OF CUBIC FEET																	
<p>NOTE: The value reported should represent wellhead sales prices including charges for natural gas plant liquids subsequently removed from the gas and for gathering and compression, in addition to state production, severance, and/or similar taxes.</p> <p>Does your computation of wellhead value agree with the above conditions? Yes ☐ No ☐</p> <p>Complete the table below only if your method of reporting is inconsistent with the above note. For each item in column (a) of the table, enter an "X" in column (b) or (c) to indicate whether the item is included or excluded from the amount reported.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 60%; text-align: center; padding: 5px;">Item (a)</th> <th style="width: 20%; text-align: center; padding: 5px;">Included (b)</th> <th style="width: 20%; text-align: center; padding: 5px;">Excluded (c)</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Natural gas plant liquids</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">Lease condensate</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">Gathering and compression charges</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">State production, severance, and/or similar taxes</td> <td></td> <td></td> </tr> </tbody> </table>			Item (a)	Included (b)	Excluded (c)	Natural gas plant liquids			Lease condensate			Gathering and compression charges			State production, severance, and/or similar taxes		
Item (a)	Included (b)	Excluded (c)															
Natural gas plant liquids																	
Lease condensate																	
Gathering and compression charges																	
State production, severance, and/or similar taxes																	
PART IV: COMMENTS																	
<p>Enter any additional comments including identification and explanation of any data elements submitted based on definitions differing from those provided for the previous year. If more space is needed, please attach separate sheet(s).</p>																	
Name of Contact Person		Phone Number															

Complete and return to: Energy Information Administration, Mail Station BG-094 Forrestal
U.S. Department of Energy, Washington, D.C. 20585, Attn: Form EIA-627

Figure B4. IOGCC Form

INTERSTATE OIL AND GAS COMPACT COMMISSION

900 Northeast 23rd Street ■ P.O. Box 53127 ■ Oklahoma City, Oklahoma 73152-3127 ■ Phone: 405/525-3556 ■ Fax: 405/525-3592

Chairman:

Joan Finney
Governor of Kansas

Past Chairmen:

David Walters
Governor of Oklahoma

Mike Sullivan
Governor of Wyoming

Edwin W. Edwards
Governor of Louisiana

Bruce King
Governor of
New Mexico

Executive Director:
W. Timothy Dowd

MEMBER STATES:

ALABAMA ALASKA
ARIZONA ARKANSAS
CALIFORNIA
COLORADO ILLINOIS
INDIANA KANSAS
KENTUCKY LOUISIANA
MARYLAND MICHIGAN
MISSISSIPPI
MONTANA NEBRASKA
NEVADA NEW MEXICO
NEW YORK NORTH
DAKOTA OHIO
OKLAHOMA
PENNSYLVANIA
SOUTH DAKOTA TEXAS
UTAH VIRGINIA
WEST VIRGINIA
WYOMING

ASSOCIATES:

GEORGIA IDAHO
NORTH CAROLINA
OREGON SOUTH
CAROLINA WASHINGTON

Monthly Report of Natural Gas Production for the State of _____

Month of _____

Please return two copies of this report as soon as the figures are available after the close of the month for which data are reported. Reports should be addressed to:

Interstate Oil and Gas Compact Commission
P.O. Box 53127
Oklahoma City, OK 73152-3127.

Name of Reporting Agency _____

Address _____

Correspondent & Title _____

Please adjust all volumes to the same pressure base:

Report pressure base used (_____ lbs. absolute at 60° F.)

(Millions of Cubic Feet)

1. Gross gas production*
(a) Natural gas from gas and condensate wells _____
(b) Natural gas from oil wells (casinghead) _____

* Include amounts delivered as royalty payments or consumed in field operations. Please provide best estimate when gas is not metered.
2. Quantity of natural gas returned to formation for repressuring, pressure maintenance and cycling. _____
3. Quantity of natural gas vented to air or burned in flares on the lease or at gas processing plants. _____

Summary of Data Requirements

The IOGCC form consists of three questions on one page, and requires volumetric information on gross production, quantities of gas vented or flared, and gas used for repressuring.

Routine Edit Checks

State data are checked for reasonableness and, in the event of problems, the appropriate State agency is called.

EIA-191 Survey, "Underground Natural Gas Storage Report"

Survey Design

Beginning in January 1991, the EIA-191, "Underground Natural Gas Storage Report," was revised. All prior data on the storage of natural gas was collected on a survey jointly implemented in 1975 by the Federal Power Commission (FPC), the Federal Energy Administration (FEA), and the Bureau of Mines (BOM) as the FPC-8/ FEA-G-318 system. The data received on both the FPC-8 and FEA-G-318 were computerized and aggregated by FPC. The new form will collect storage data by State, field, and reservoir of which there are approximately 400 operating reservoirs in the United States. Data are considered proprietary.

At the beginning of 1979, the EIA assumed responsibility for the collection, processing, and publication of the data gathered in the survey. Form FEA-G-318 was renewed on July 1, 1979, as Form EIA-191 and the survey was retitled the FPC-8/EIA-191 Survey (Figure D4 shows the EIA-191). Form FPC-8 was renewed in December 1985 and the survey retitled FERC-8/ EIA-191 Survey. The forms were not merged because of FERC's stated desire to maintain the separate identity of the FERC-8 for administrative reasons. FERC jurisdictional firms will continue to file the FERC-8 in addition to the new EIA-191.

Survey Universe and Response Statistics

The same group of 92 companies that operate underground facilities will file the new Form EIA-191. Of these companies, 40 are subject to the jurisdiction of

FERC and are required to report data on Form FERC-8.

The response rate as of the filing deadline is approximately 20 percent. Data from the remaining 80 percent of respondents are received in writing and/or by telephone within 3 to 4 days after the filing deadline. All data supplied by telephone are subsequently filed in writing, generally within 15 days of the filing deadline. The final response rate is 100 percent.

Summary of EIA-191 Data Reporting Requirements

The EIA-191 is a multipart form that reports the quantities of gas in storage, injections and withdrawals, and the location (including State and county, field, reservoirs) and capacity of underground storage reservoirs along with peak day send out during the reporting period. Information on co-owners of storage reservoirs is also required.

Collection of the survey is on a custody basis, although some respondent ownership data are required. Information requested must be provided within 10 days after the first day of each month. Twelve reports are required per calendar year. Respondents are required to indicate whether the data reported are actual or estimated. In the case of most estimated filings, the necessary revisions are reflected in subsequent scheduled filings or in a revised submission that provides actual data. Actual data on natural gas injections and withdrawals from underground storage are based on metered quantities. Data on quantities of gas in storage and on storage capacity represent, in part, reservoir engineering evaluations. All volumes are reported at 14.73 psia and 60 degrees Fahrenheit.

Routine Form EIA-191 Edit Checks

Data received on Form EIA-191 are entered into the survey processing system. The survey's five principal data elements (total, base, and working gas in storage, injections, and withdrawals) receive a preliminary visual edit to eliminate and correct obvious errors or omissions. Respondents are required to refile reports containing any inconsistencies or errors.

Other EIA Publications Referencing Form EIA-191

The EIA publication *Monthly Energy Review* contains data from the EIA-191 survey.

Figure B5. Form EIA-191

Form Approved
OMB No. 19050175
Expires: 12/31/93

U.S. DEPARTMENT OF ENERGY
ENERGY INFORMATION ADMINISTRATION
WASHINGTON, D.C. 20585

UNDERGROUND GAS STORAGE REPORT

EIA-191 (Revised 1991)

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See "Provisions for Confidentiality" in the General Instructions for confidentiality statement. Public reporting burden for this collection of information is estimated to average 3.6 hours per response, including the time of reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Energy Information Administration, Office of Statistical Standards, EI-73, 1000 Independence Ave., SW, Washington, DC 20585, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

I. RESPONDENT IDENTIFICATION DATA

Control (ID) No. _____
Name _____
Street or Post Office Box: _____
City, State, Zip Code: _____

Person to contact if questions arise concerning this report:		Tel. No. (Include Area Code and Extension)		Report Period		Mo		Yr	
II. GAS STORAGE DATA (All volumes in Mcf - 14.73 psia - 60°F)									
Storage Field Name		Location		State		Storage Field Capacity			
Reservoir Name(s)		County		County		Maximum Deliverability (Mcf/d)			
		Base Gas		Working Gas		Total Gas In Storage		Injections	
☐ Estimated ☐ Actual ☐ Revised								Withdrawals	
A Respondent's Gas in Field Operated by Respondent									
B Gas Belonging to Others in Field Operated by Respondent									
Total Gas (Sum of A and B)									
Peak Day Withdrawals (in Mcf) Date ☐ Day ☐									
Storage Field Name		Location		State		Storage Field Capacity			
Reservoir Name(s)		County		County		Maximum Deliverability (Mcf/d)			
		Base Gas		Working Gas		Total Gas In Storage		Injections	
☐ Estimated ☐ Actual ☐ Revised								Withdrawals	
A Respondent's Gas in Field Operated by Respondent									
B Gas Belonging to Others in Field Operated by Respondent									
Total Gas (Sum of A and B)									
Peak Day Withdrawals (in Mcf) Date ☐ Day ☐									
III. CERTIFICATION									
I certify that the information submitted in this report is the most accurate available at this time to the best of my knowledge.									
Name (Type or Print)		Title		Signature				Date	

Form FERC-11, "Natural Gas Pipeline Company Monthly Statement"

Survey Design

The collection of monthly data from major pipeline companies was begun in December 1964 by the Federal Power Commission (FPC). On October 1, 1977, FPC ceased to exist, and its functions and regulatory responsibilities were transferred to the Secretary of Energy and to the Federal Energy Regulatory Commission (FERC), an independent commission within the Department of Energy.

Information collected on Form FERC-11 (Figure B6) is used by FERC in carrying out its regulatory authority. Form FERC-11 is a monthly regulatory reporting form rather than one filed for statistical purposes. Data are not considered proprietary.

Survey Universe and Response Statistics

Form FERC-11 is filed by major interstate natural gas pipeline companies whose combined sales for resale and gas transported interstate or stored for a fee exceeded 50 billion cubic feet in the previous calendar year. Approximately 50 pipeline companies report data on Form FERC-11. Natural gas pipeline companies are monitored annually to determine whether each has met the requirements for classification as a major pipeline.

Information is collected monthly by mail. Historically, the response rate has been 100 percent.

Summary of Form FERC-11 Data Requirements

Form FERC-11 requires information on revenues, expenses, and sales data, as well as volumetric data on purchases and production.

Submission of Form FERC-11 is required no later than 40 days after the close of the report month. The form requires reporting of both preliminary data for the report month and final data for the same month in the previous year. All data are reported on an equity basis.

Routine Form FERC-11 Edit Checks

The completed Form FERC-11 is sent on disk along with two facsimiles of the form to FERC. FERC loads these disks on a electronic data file. This file is transmitted to EIA for further processing and editing. Edit

reports are produced of the current file and are reviewed manually. This review is to ensure consistency in reporting within and among utilities in the presentation of current and 12-month financial sales data.

Other EIA Publications Referencing Form FERC-11

The Energy Information Administration publication *Monthly Energy Review* contains data from Form FERC-11.

Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas"

Survey Design

The collection of data covering natural gas imports and exports was begun in 1973 by the Federal Power Commission (FPC). On October 1977, FPC ceased to exist and its data collection functions were transferred to the Federal Energy Regulatory Commission (FERC) within the Department of Energy (DOE). Since 1979, the Energy Information Administration (EIA) has had the responsibility for collecting Form FPC-14. Data are not considered proprietary.

Survey Universe and Response Statistics

The Form FPC-14 is filed annually by each organization or individual having authorization to import and export natural gas regardless of whether any imports or exports took place during the reporting year. The authorization to import and export was originally granted by the FPC. In 1977, it was transferred to the Economic Regulatory Administration (ERA) and it now resides with the Office of Fuels Programs in the Office of Fossil Energy. In 1990, 228 companies met the reporting criteria, only 102 reported imports or exports of natural gas.

The respondent list for the Form FPC-14 is updated at the beginning of each year. All new respondents with authorization to import or export natural gas are added to the list and respondents whose licenses have expired are deleted. Five copies of Form FPC-14 are mailed in February to all companies authorized to import or export natural gas. The completed original and three copies are to be filed with the EIA on or before March 31 of each year, for the preceding calendar year. Companies that have not filed by March 31 are contacted.

Figure B6. Form FERC-11

U.S. DEPARTMENT OF ENERGY
Federal Energy Regulatory Commission
Washington, D.C. 20426

Form Approved, OMB No. 1902-0032
(Expires 6-30-90)

FERC FORM NO. 11: NATURAL GAS PIPELINE COMPANY MONTHLY STATEMENT

This report is mandatory under the authority granted by Sections 10 and 16 and sanctions provided by Section 21(b) of the Natural Gas Act. Failure to report may result in criminal fines, civil penalties and other sanctions as provided by law.

Company Code Number

Month Being Reported
19__

PART I: IDENTIFICATION

1. Name of Company

2. Address of Company

(1) Number and Street

(2) City

(3) State

(4) Zip Code

3. Person Authorized To Sign This Report

(1) Signature

(2) Phone Number (Including area code)

PART II: REVENUE DATA

Line No. (a)	Item (b)	Revenues (In thousands of dollars)		Sales (In millions of cubic feet)		Foot-note (g)
		Current Year (c)	Previous Year (d)	Current Year (e)	Previous Year (f)	
4	Sales of Natural Gas					
5	Firm Industrial					
6	Off-peak Industrial					
7	Interruptible Industrial					
8	TOTAL INDUSTRIAL (Enter total of lines 5, 6 and 7)					
9	Other Ultimate Consumers					
10	TOTAL SALES TO ULTIMATE CONSUMERS (Enter total of lines 8 and 9)					
	Sales For Resale (483)					
11	Total Major Gas Pipelines					
12	Total to All Other Pipelines and Gas Utilities					
13	TOTAL SALES FOR RESALE (Enter total of lines 11 and 12)					
14	TOTAL SALES OF NATURAL GAS (Enter total of lines 10 and 13)					
15	Intracompany Transfers (485)					
16	Revenues From Transportation of Gas of Others (489)			(Enter volume of gas transported:)		
17	Provision for Rate Refunds (496)					

FERC FORM NO. 11 (REVISED 12-84)

Page 1 of 4

Company Code Number	Month and Year Being Reported
---------------------	-------------------------------

PART III: INCOME DATA

Line No. (a)	Item (b)	Current Year (In thousands of dollars) (c)	Previous Year (In thousands of dollars) (d)	Foot-note (e)
18	Gas Operating Revenues (400)			
19	Operation and Maintenance Expense (401, 402)			
20	Depreciation, Depletion and Amortization Expense (403-407)			
21	Taxes Other Than Income Taxes, Utility Operating Income (408.1)			
22	Total Gas Operating Expenses (401, 402, 403-407, 408.1, 409.1, 410.1, 411.1, 411.4)			
23	Net Gas Operating Revenues (Enter the result of lines 18 minus 22) (Including Plant Leased to Others)			
24	Total Gas Utility Operating Income (Refer to specific instruction for line 24.)			
25	Allowance For All Funds Used During Construction - Credit (419.1, 432)			
26	Total Income Before Interest Charges (427-432) and Extraordinary Items (409.3, 434, 435)			
27	Net Income (433) Before Extraordinary Items (434, 435), Income Taxes (409.1, 409.2, 409.3, 410.1, 410.2, 411.1, 411.2), and Investment Tax Credits (411.4, 411.5, 420)			
28	Net Income (Monthly Amount Related to 433.)			

PART IV: OTHER SELECTED DATA

Line No. (a)	Item (b)	Current Year (In thousands of dollars) (c)	Previous Year (In thousands of dollars) (d)	Foot-note (e)
29	Gas Utility Plant in Service (101)			
30	Accumulated Provision For Depreciation, Depletion, and Amortization of Gas Utility Plant (108, 111)			
31	Gas Plant Construction Work In Progress (107)			
32	Gross Additions To Construction Work In Progress (107) For This Month Being Reported			
33	Amount Collected Which Is Subject To Refund During This Month Being Reported			
34	Cumulative Amount Collected Since January 1 This Year Subject To Refund, At End Of This Month Being Reported			
35	Monthly Amount Subject To Refund Actually Refunded During This Month Being Reported			
36	Cumulative Amount Subject To Refund Refunded Since January 1 This Year, To The End Of This Month Being Reported			

Company Code Number		Month and Year Being Reported				
PART V: OPERATION AND MAINTENANCE EXPENSE DATA						
Line No. (a)	Item (b)	Amount (In thousands of dollars)		Gas Volume (In millions of cubic feet)		Foot-note (g)
		Current Year (c)	Previous Year (d)	Current Year (e)	Previous Year (f)	
37	Manufactured Gas Production					
38	Liquefied Petroleum Gas					
39	Other Manufactured Gas					
40	TOTAL (Enter total of lines 38 and 39)					
41	Natural Gas Production					
42	Production and Gathering (750-769)					
43	Products Extraction (770-791)			(Enter thousands of gallons) 7		
44	Exploration and Development (795-798)					
	Purchased Natural Gas From					
45	Producers (800, 801-803)					
46	Intracompany Transfers (800.1)					
47	Imports					
48	Major Gas Pipelines (800, 801-803)					
49	Other Pipelines (800, 801-803)					
50	Other Gas Purchases (804, 805, 805.1 minus line 68-71)					
51	TOTAL (Enter total of lines 45 to 50)					
52	Natural Gas Produced					
53	Exchange Gas - In (806)					
54	Exchange Gas - Out (806)					
55	Purchased Gas Expenses (807.1-807.5)					
56	Gas Withdrawn From Underground Storage - Debit (808.1, 809.1)					
57	Gas Delivered To Underground Storage - Credit (808.2, 809.2)					
58	Gas Used For Compressor Station Fuel - Credit (810)					
59	Gas Used For Products Extraction - Credit (811)					
60	Gas Used For Other Utility Operations - Credit (812)					
61	Other Gas Supply Expenses (813)					
62	TOTAL GAS PRODUCTION (Enter total of lines 40, 42, 43, 44, 51, 53 to 61)					
63	Storage Expenses (814-843.9)					
64	LNG Terminating and Processing Expenses (844.1-847.8)					
65	Transmission Expenses (850-867)					
66	Distribution Expenses (870-894)					
67	Other Gas Purchased and Produced (Entries here should not be included under any other item in this part.)					
68	Liquefied Natural Gas (804.1)					
69	Gasified Coal					
70	Synthetic Gas (Reformed (gasified) liquid hydrocarbons)					
71	TOTAL (Enter total of lines 68 to 70)					
72	All Other Operating and Maintenance Expenses (901-905, 907-916, 920-931, 935)					
73	TOTAL OPERATING AND MAINTENANCE EXPENSES (Enter total of lines 62, 63, 64, 65, 66, 71, 72)					

Routine Form FPC-14 Edit Checks

Respondents are required to certify the accuracy of all data reported. The survey forms are checked at the EIA for reasonableness and accuracy. If errors are found the companies are required to file corrected data. The data are processed at the EIA and published as reported. All natural gas volumes in this report are expressed at a pressure base of 14.73 pounds per square inch absolute and temperature of 60 degrees Fahrenheit, except as noted. All prices are in U.S. dollars and import/export prices are those paid at the U.S. border (except exports of LNG are those prices paid at the point of sale and delivery in Yokohama, Japan).

"Quarterly Natural Gas Import and Export Sales and Price Report"

This report is prepared quarterly by the Office of Fuels Programs in the Office of Fossil Energy based on information submitted by all firms having authorization to import or export natural gas. All data on this report are considered preliminary until the annual data on the Form FPC-14 are final, usually in September of the following year.

Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"

Survey Design

The original Form EIA-857 was approved for use in December 1984. Response to the Form EIA-857 is mandatory on a monthly basis. Data collected on the Form EIA-857 cover the 50 States and the District of Columbia and include both price and volume data. Data are considered proprietary.

Survey Universe and Response Statistics

A sample of 391 natural gas companies including interstate pipelines, intrastate pipelines, and local distribution companies report to the survey. The sample

was selected independently for each of the 50 States and the District of Columbia. Each selected company is required to complete and file the Form EIA-857 on a monthly basis. Initial response statistics on a monthly basis are as follows: responses received by due date, approximately 90 percent, and responses received after follow-up, 100 percent.

The Form EIA-857 is a monthly sample survey of firms delivering natural gas to consumers. It provides data that are used to estimate monthly sales of natural gas (volume and price) by State and monthly deliveries of natural gas on behalf of others (volume) by State to three consumer sectors - residential, commercial, and industrial. (Monthly deliveries and prices of natural gas to electric utilities are reported on the Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants," and the Form EIA-759, "Monthly Power Plant Report.")

See Appendix C for a discussion of the sample design and estimation procedures.

Summary of Form EIA-857 Data Reporting Requirements

Data collected monthly on the Form EIA-857 on a State level include the volume and cost of purchased gas, the volume and cost of natural gas consumed by sector (residential, commercial, and industrial), and the average heat content of all gas consumed. Respondents file completed forms with EIA in Washington, DC on or before the 30th day after the end of the report month.

All natural gas volumes are reported in thousand cubic feet at 14.73 psia at 60 degrees Fahrenheit and dollar values are reported to the nearest whole dollar.

Routine Form EIA-857 Edit Checks

A series of manual and computerized edit checks are used to screen the Form EIA-857. The edits performed include validity and analytical checks.

Figure B7. Form FPC-14

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D.C. 20426

**ANNUAL REPORT FOR
IMPORTERS AND EXPORTERS OF NATURAL GAS**
GENERAL INSTRUCTIONS

Form Approved 1902-0027
OMB Number: 09/30/92
Expiration Date

1. The completed original and 3 conformed copies of this report shall be filed with the Federal Energy Regulatory Commission, Washington, D.C. 20426 on or before March 31, of each year, for the preceding calendar year.
2. The report will be filed by each person having authorization to import or export natural gas.
3. Use a separate schedule for each authorization. If one authorization involves more than one import or export point, a separate schedule must be filed for each point.
4. All volumes reported in Mcf will be at 14.73 Psia and 60°F.
5. Where transactions are based primarily on volumetric measurement, weighted average Btu data should be used to estimate total monthly Btu's.
6. Amounts paid or received and cost or receipts shall be reported in U.S. Dollars.
7. **DEFINITIONS:** — **Transporter**—the party or parties, other than buyer or seller, owning the facilities by which gas or LNG is physically transferred between buyer and seller; **Costs**—all expenses incurred by importer up to the U.S. point of delivery for the reported quantity imported; **Receipts**—all revenues received by exporter for the reported quantity exported.

Name of Respondent	Address of Respondent	Year Ending December 31, _____
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SCHEDULE I — GASEOUS PHASE NATURAL GAS

NOTE: If authorization granted is increased, decreased, or extended under a succession of docket numbers and all related gas moved through the same border facilities and authorized expansions thereof, moved to or from the same purchaser or supplier, and was subject to the same rate, such transaction shall be combined for reporting purposes and appropriate Docket Numbers shown.

Report for (Check one) ☐ Import ☐ Export	Foreign Seller or Foreign Buyer
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U.S. Entry or Exit Point	Transporter	Docket Number(s)
--------------------------	-------------	------------------

Line No	Month (a)	QUANTITY RECEIVED OR SHIPPED AT THE ENTRY OR EXIT POINT				Amount Paid or Received at Entry or Exit Point (f)
		Peak Day		Mcf (d)	MMBtu (e)	
		Date (b)	Mcf (c)			
1	January					
2	February					
3	March					
4	April					
5	May					
6	June					
7	July					
8	August					
9	September					
10	October					
11	November					
12	December					
13	TOTAL					
ANNUAL WEIGHTED AVERAGE IN Btu's PER CUBIC FOOT (Line 13: [Column (e) ÷ (Column (d) X 1000)]) _____						ANNUAL WEIGHTED AVERAGE PRICE IN CENTS PER MMBtu (Line 13: Column (f) ÷ Column (e) X 100) _____

FPC-14 (8-82)

Figure B8. Form EIA-857

EIA-857 (Revised 1991)

U.S. Department of Energy
Energy Information Administration

Form Approved
OMB No. 19050175
Expires: 12/31/93

MONTHLY REPORT OF NATURAL GAS PURCHASES AND DELIVERIES TO CONSUMERS

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See section VI of the instructions for the confidentiality statement. Public reporting burden for this collection of information is estimated to average 4 hours per response, including time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards (EIA-73, Mail Station 2F-08) Forrestal, 1000 Independence Ave. SW, Washington, DC 20585, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

Attach Identification Label or Enter

01 Control No. _____

02 Company Name _____

State of Operation _____

Return completed forms to:

Energy Information Administration
Mail Station BG-094
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-857

SECTION I Natural Gas Purchases and Deliveries to Consumers

	Report Period		Revised Report Indicator
	Mo.	Yr.	
	03		04
Purchased Gas Received in Distribution Service Area _____ 05			
Delivered to Residential Consumers (Onsystem Sales) _____ 06			
Delivered to Commercial Consumers (Onsystem Sales) _____ 07			
Delivered to Industrial Consumers (Onsystem Sales) _____ 08			
Delivered to Electric Utilities (Onsystem Sales) _____ 09			
Transported to Residential Consumers _____ 10			Shaded areas not required
Transported to Commercial Consumers _____ 11			
Transported to Industrial Consumers _____ 12			
Transported to Electric Utilities _____ 13			
Total Delivered and Transported to Consumers _____ 14			
Average Btu Content of Gas Delivered to Consumers _____ 15			(Btu/cu. ft.)

SECTION II Footnotes

SECTION III CONTACT PERSON AND CERTIFICATION

Contact Person 16 Name _____	17 Telephone _____ (Area Code Number Extension)
Certification: I certify that the information provided hereon is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge.	
18 Name _____	19 Title _____
Signature _____	Date _____

Appendix C

Statistical Considerations

Statistical Considerations

The monthly sales (volume and price) and monthly deliveries (volume) of natural gas to residential, commercial and industrial consumers presented in this report by State are estimated from data reported on the Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." (See Appendix B for a description of this Form.) These estimations must be made from the reported data since the Form EIA-857 is a sample survey. A description of the sample design and the estimation procedures is given below.

Sample Design

The Form EIA-857 is a monthly sample survey of companies delivering natural gas to consumers. It includes interstate pipeline companies, intrastate pipeline companies, producers, and local distribution companies. The survey provides data that are used each month to estimate the volume and price for onsystem sales of natural gas by State and the volume of natural gas delivered for the account of others, by State, to three consumer sectors--residential, commercial, and industrial. Monthly deliveries and prices of natural gas to electric utilities are reported on the Form EIA-759, "Monthly Power Plant Report," and the Form FERC-423, "Monthly Report of Costs and Quality of Fuels for Electric Plants."

Sample Universe. The sample currently in use was selected from a universe of 1,705 companies. These companies were respondents to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," for reporting year 1990 who reported sales or deliveries to consumers in the residential, commercial or industrial sectors. (See Appendix B for a description of the Form EIA-176.)

Sampling Plan. The goal was a sample that would provide estimates of monthly natural gas consumption by the three consuming sectors within each State and the District of Columbia. A stratified sample using a single stage and systematic selection with probability proportional to size was designed. The measure of size was the volume of natural gas physically delivered in the

State to the three consuming sectors by the company in 1990. As a supplement, two companies with no deliveries to end users during 1990 but having subsequently started delivering very large volumes were sampled with certainty. There were two strata--companies selected with certainty and companies selected under the systematic probability proportional to size design.

Initial calculations showed that a 25 percent sample of companies would yield reasonably accurate estimates. The sample was selected independently in each State, resulting in a national total of 391 respondent companies. While some mergers and acquisitions were uncovered as a result of the initial mail-out, all resulted in a substitution of respondent companies rather than a reduction in the number of respondents. The sample for the 1992 survey year contains a total of 391 respondent companies.

Certainty Stratum. Since estimates were needed for each of the 50 States and the District of Columbia, the strata were established independently within each State. In 16 States and the District of Columbia where sampling was not feasible due to small numbers of companies and/or small volumes of gas deliveries, all companies were selected. The 16 States were: Alaska, Connecticut, Delaware, Hawaii, Idaho, Maine, North Dakota, New Hampshire, New Jersey, Nevada, Oregon, Rhode Island, South Dakota, Utah, Vermont, and Washington.

For each of the remaining States, the total volumes of industrial sales and deliveries and of the combined residential/commercial sales and deliveries were determined. Companies with natural gas deliveries to the industrial sector or to the combined residential/commercial sector above a certain level were selected with certainty. Since a few large companies often account for most of the natural gas delivered within a State, this ensures those companies' inclusion in the sample. The formula for determining certainty was applied independently in the two consumer sectors--the industrial and the combined residential/commercial. These selected companies, together with the companies in the jurisdictions discussed where sampling was not feasible, formed the certainty stratum.

All companies with natural gas deliveries in sector j greater than the cut-off value (C_j) were included in the certainty stratum. The formula for C_j was:

$$C_j = \frac{X_j}{2n} \quad (1)$$

where:

C_j = cutoff value for consumer sector j ,

n = target sample size to be selected for the State, 25 percent of the companies in the State,

X_{ij} = the annual volume of natural gas deliveries by company i to customers in consumer sector j ,

$X_{i.}$ = the sum within State of annual gas volumes for company i ,

$X_{.j}$ = the sum within State of annual gas volumes in consumer sector j ,

$X_{..}$ = the sum within State of annual gas volumes in all consumer sectors.

Noncertainty Stratum. All other companies formed the noncertainty stratum. They were systematically sampled with probability proportional to size. The measure of size for each company was the total volume of gas sales to all consumer sectors ($X_{i.}$). The number of companies to be selected from the noncertainty stratum was calculated for each State, with a minimum of 2.

The formula for selecting the number of noncertainty stratum companies was:

$$m = n \frac{X_2}{X_{..}} \quad (2)$$

where:

m = the sample size for the noncertainty stratum within a State,

X_2 = the sum within State of the $X_{i.}$ for all companies in the noncertainty stratum.

Companies were listed in ascending order according to their measure of size and then a cumulative measure of size in the stratum was calculated for each company. The cumulative measure of size was the sum of the measures of size for that company and all preceding companies on the list. An interval of width I for selecting the companies systematically was calculated using ($I = \frac{X_2}{m}$). A uniform random number R was selected between zero and I . The first sampled company was the first company on the list to have a cumulative measure of size greater than R . The second company selected was the first company on the list to have a cu-

mulative measure of size greater than $R + I$. $R + I$ was increased again by I to determine the third company to be selected. This procedure was repeated until the entire sample was drawn.

Subgroups. In eight States, the noncertainty stratum was divided into subgroups to ensure that gas in each consumer sector could be estimated. The systematic sample with probability proportional to size design described above was applied independently in each subgroup. The methods for determining the subgroup sample size and calculating the subgroup interval for sample selection were the same as the methods described above for the noncertainty stratum, except that X_2 was the sum within State of the $X_{i.}$ for only those companies in the subgroup.

These subgroups were defined only for the purpose of sample selection. They are:

California: companies handling only industrial gas and all other companies.

Louisiana: companies handling only industrial gas and all other companies, with the latter being further subdivided according to size. The larger group is comprised of all companies with total deliveries of at least 200 million cubic feet while the smaller group consists of companies with less than that volume of delivered gas (three subgroups).

Texas: companies handling only residential/commercial gas, companies handling only industrial gas, and all other companies (three subgroups).

West Virginia: companies delivering only residential or commercial gas and all other companies.

Arkansas, Colorado, Georgia, Pennsylvania, and Tennessee: companies delivering 1 billion cubic feet or more of gas and companies delivering less than 1 billion cubic feet of gas.

Oklahoma: Companies delivering less than 500 million cubic feet of gas and those delivering more than that volume.

New York: companies delivering 8 billion cubic feet or more of gas and companies delivering less than 8 billion cubic feet of gas.

Estimation Procedures

Estimates of Volumes. A ratio estimator is applied to the volumes reported in each State by the sampled companies to estimate the total gas sales and deliveries for the State. Ratio estimators are calculated for each consumer sector--residential, commercial, and industrial--in each State where companies are sampled.

The following annual data are taken from the most recent 1990 submissions of Form EIA-176:

The formula for calculating the ratio estimator (E_{vj}) for the volume of gas in consumer sector j is:

$$E_{vj} = \frac{Y_j}{Y'_j} \quad (3)$$

where:

Y_j = the sum within State of annual gas volumes in consumer sector j for all companies,

Y'_j = the sum within State of annual gas volumes in consumer sector j for those companies in the sample.

The ratio estimator is applied as follows:

$$V_j = y_j \times E_{vj} \quad (4)$$

where:

V_j = the State estimate of monthly gas volumes in consumer sector j ,

y_j = the sum within State of reported monthly gas volumes in consumer sector j .

Computation of Natural Gas Prices. The natural gas volumes that are included in the computation of prices represent only those volumes associated with natural gas sales.

The price of natural gas for a State within a sector is calculated as follows:

$$P_j = \frac{R_j}{V_j}$$

where:

P_j = the average price for gas sales within the State in consumer sector j ,

V_j = the reported revenue from natural gas sales within the State in consumer sector j .

V_j = the reported volume of natural gas sales within the State in consumer sector j .

All average prices are weighted by their corresponding sales volume estimates when national average prices are computed.

The monthly average prices of natural gas are based on sales data only. Volumes of gas delivered for the account of others to these consumer sectors are not included in the State or national average prices.

Table 33 shows the percent of the total State volume that represents volumes from natural gas sales to the commercial and industrial sectors. This table may be helpful in evaluating commercial and industrial price data. Virtually all natural gas deliveries to the residential sector represent onsystem sales volumes only.

Estimation for Nonrespondents. A volume for each consumer category is imputed for companies that fail to respond. The imputation is based on the previous month's value reported by the non-responding company and the change from the previous month to the current month in volumes reported by other companies in the State. The imputed volumes are included in the State totals. To estimate prices for non-respondents, the unit price (dollars per thousand cubic feet) reported by the company in the previous month is used.

The formula for imputing volumes of gas sales for nonrespondents was:

$$F_t = F_{t-1} \times \frac{y_{jt}}{y_{jt-1}} \quad (5)$$

where:

F_t = imputed gas volume for current month t ,

F_{t-1} = gas volume for the company for the previous month,

y_{jt} = gas volume reported by companies in the State stratum for report month t ,

y_{jt-1} = gas volume in the previous month for companies in the State stratum that reported in month t .

Final Revisions

Adjusting Monthly Data to Annual Data. After the annual data reported on the Form EIA-176 have been submitted, edited, and prepared for publication in the *Natural Gas Annual*, revisions are made to monthly data. The revisions are made to the volumes and prices of natural gas delivered to consumers that have appeared in the *Natural Gas Monthly* to match them to the annual values appearing in the *Natural Gas Annual*. The revised monthly estimates allocate the difference between the sum of monthly estimates and the annual reports according to the distribution of the estimated values across the months.

Before the final revisions are made, changes or additions to submitted data received after publication of the monthly estimate and not sufficiently large to require a revision to be published in the *Natural Gas Monthly*, are used to derive an updated estimate of monthly consumption and revenues for each State's residential, commercial, or industrial natural gas consumption.

For each State, two numbers are revised, the estimated consumption and the estimated price per thousand cubic feet.

The formula for revising the estimated consumption is:

$$V_{jm}^* = V_{jm} + \left[(V_{ja} - V'_{jm}) \left(\frac{V_{jm}}{V'_{jm}} \right) \right] \quad (6)$$

where:

V_{jm}^* = the final volume estimate for month m in consumer sector j,

V_{jm} = the estimated volume for month m in consumer sector j,

V_{ja} = the volume for the year reported on Form EIA-176,

V'_{jm} = The annual sum of estimated monthly volumes.

The price is calculated as described above in the Estimation Procedures section, using the final revised consumption estimate and a revised revenue estimate.

The formula for revising the estimated revenue is:

$$R_{jm}^* = R_{jm} + \left[(R_{ja} - R'_{jm}) \left(\frac{R_{jm}}{R'_{jm}} \right) \right] \quad (7)$$

where:

R_{jm}^* = the final revenue estimate for month m in consumer sector j,

R_{jm} = the estimated revenue for month m in consumer sector j,

R_{ja} = the revenue for the year reported on Form EIA-176,

R'_{jm} = The annual sum of estimated monthly revenues.

Revision of Volumes and Prices for Deliveries to Electric Utilities. Revisions to monthly electric utilities data are published throughout the year as they become available.

Reliability of Monthly Data

The monthly data published in this report are subject to two sources of error - nonsampling error and sampling error. Nonsampling errors occur in the collection and processing of the data. See the discussion of the Form EIA-857 in Appendix B for a description of nonsampling errors for monthly data.

Sampling error may be defined as the difference between the results obtained from a sample and the results that a complete enumeration would provide. The standard error statistic is a measurement of sampling error.

Standard Errors. A standard error of an estimate is a statistical measure that indicates how the estimate from the sample compares to the result from a complete enumeration. Standard errors are calculated based on statistical theory that refers to all possible samples of the same size and design.

The standard errors for monthly natural gas volume estimates by State are given in Table C1. Ninety-five percent of the time, the volume that would have been obtained from a complete enumeration will lie in the range between the estimated volume minus two standard errors and the estimated volume plus two standard errors.

Table C-1. Standard Error for Natural Gas Deliveries and Price to Consumers by State, July 1993

State	Volume Million Cubic Feet				Price Dollars per Thousand Cubic Feet		
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial
Alabama	67	329	1,058	1,110	0.23	0.27	0.21
Alaska	0	0	0	0	--	--	--
Arizona	14	12	0	18	.05	--	--
Arkansas	37	39	76	93	.36	.06	.04
California	315	263	2,622	2,654	.05	.06	.21
Colorado	10	20	0	22	--	.01	--
Connecticut	0	0	0	0	--	--	--
Delaware	0	0	0	0	--	--	--
District of Columbia	0	0	0	0	--	--	--
Florida	31	55	1,805	1,806	.42	.10	.64
Georgia	492	700	956	1,262	.29	.27	.40
Hawaii	0	0	0	0	--	--	--
Idaho	0	0	0	0	--	--	--
Illinois	433	1,532	1,037	1,900	.90	1.43	.63
Indiana	137	169	1,668	1,662	.91	.44	.30
Iowa	125	43	282	311	.76	.21	.32
Kansas	166	6,666	11,064	12,916	.26	.26	5.12
Kentucky	77	77	582	592	.17	.05	.55
Louisiana	41	36	954	956	.25	.06	.06
Maine	0	0	0	0	--	--	--
Maryland	4	8	50	50	.01	.01	.06
Massachusetts	58	52	72	106	.26	.22	.35
Michigan	209	505	1,575	1,667	.23	.32	.30
Minnesota	254	97	459	533	.36	.37	.20
Mississippi	137	75	704	721	.99	.45	.09
Missouri	248	156	400	496	.07	.31	.46
Montana	1	1	0	1	.01	.01	--
Nebraska	12	11	256	256	.27	.04	.19
Nevada	0	0	0	0	--	--	--
New Hampshire	0	0	0	0	--	--	--
New Jersey	0	0	0	0	--	--	--
New Mexico	54	251	634	684	.07	.23	--
New York	1,165	1,023	1,070	1,884	.19	.28	.25
North Carolina	29	29	100	108	.21	.09	.06
North Dakota	0	0	0	0	--	--	--
Ohio	388	227	6,474	6,486	.01	.20	.12
Oklahoma	5	93	27	97	.01	.10	--
Oregon	0	0	0	0	--	--	--
Pennsylvania	7	51	2,141	2,141	.11	.09	.62
Rhode Island	0	0	0	0	--	--	--
South Carolina	16	28	847	847	.28	.28	.33
South Dakota	0	0	0	0	--	--	--
Tennessee	425	137	2,489	2,529	1.37	.06	2.72
Texas	363	14,865	29,077	32,659	.36	1.48	.19
Utah	0	0	0	0	--	--	--
Vermont	0	0	0	0	--	--	--
Virginia	57	99	2,479	2,482	.64	.36	2.73
Washington	0	0	0	0	--	--	--
West Virginia	270	125	236	381	4.02	5.00	.17
Wisconsin	76	920	886	1,280	.24	1.29	.83
Wyoming	19	40	376	379	.06	.14	.05
U.S. Totals	1,644	16,457	32,874	36,600	.14	.43	.26

-- = Not Applicable.

Source: Energy Information Administration, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

The standard error of the natural gas volume estimate is the square root of the variance of the estimate. The formula for calculating the variance of the volume estimate is:

$$V(\hat{Y}) = \sum_{h=1}^H \left[N_h^2 \frac{(1 - \frac{n_h}{N_h})}{n_h(n_h - 1)} \left(\sum_{i=1}^{n_h} (y_i - T x_i)^2 \right) \right] \quad (8)$$

where:

H = the total number of strata

N_h = the total number of companies in stratum h

n_h = the sample size in stratum h

y_i = the reported monthly volume for company i

x_i = the reported annual volume for company i

T = the ratio of the sum of the reported monthly volumes for sample companies to the sum of the reported annual volumes for the sample companies.

Appendix D

Natural Gas Reports and Feature Articles

Natural Gas Reports and Feature Articles

Reports Dealing Principally with Natural Gas and/or Natural Gas Liquids

- *Natural Gas Annual 1991*, DOE/EIA-0131(91), October 1992.
- *Natural Gas Annual 1991 Supplement: Company Profiles* DOE/EIA-0131(91/S), January 1993.
- *Statistics of Interstate Natural Gas Pipeline Companies 1991*, DOE/EIA-0145(91), December 1992.
- *Gas Supplies of Interstate Natural Gas Pipeline Companies 1991*, DOE/EIA-0167(91), December 1992.

Other Reports Covering Natural Gas, Natural Gas Liquids, and Other Energy Sources

- *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves - 1991 Annual Report*, DOE/EIA-0216(91), September 1992.
- *Monthly Energy Review*, DOE/EIA-0035. Published monthly. Provides national aggregate data for natural gas, natural gas liquids, and other energy sources.
- *Annual Report to Congress 1992*, DOE/EIA-0173(92), March 1993. Published annually.
- *Annual Energy Outlook 1993*, DOE/EIA-0383(93), January 1993. Published annually.
- *Annual Energy Review 1992*, DOE/EIA-0384(92), June 1993. Published annually.
- *Short-Term Energy Outlook*, DOE/EIA-0202. Published quarterly. Provides forecasts for next six quarters for natural gas and other energy sources.

Selected One-Time Natural Gas and Related Reports

- *U.S. Production of Natural Gas from Tight Reservoirs*, DOE/EIA-TR-0574, October 1993
- *Energy Policy Act Transportation Rate Study*, DOE/EIA-0571, October 1993
- *Natural Gas 1992: Issues and Trends*, DOE/EIA-0560(20), March 1993.
- *Natural Gas Productive Capacity for the Lower 48 States, 1982 through 1993*, DOE/EIA-0542(93), March 1993.
- *Geologic Distributions of U.S. Oil and Gas*, DOE/EIA-0557, July 1992.
- *Capacity and Service on the Interstate Natural Gas Pipeline System 1990*, DOE/EIA-0556, June 1992.
- *Effects of Interruptible Natural Gas Service: Winter 1989-1990*, SR/OG-91-01, June 1991.
- *The Outlook for Natural Gas Imports: Supporting Analysis for the National Energy Strategy*, SR/NES/90-06, January 1991.

Selected and Recurring Natural Gas and Related Data Reference Reports

- *Directory of Energy Data Collection Forms*, DOE/EIA-0249(92), January 1993.
- *Oil and Gas Field Code Master List, 1991*, EIA-0370(91), January 1992.

NGM Feature Articles

March 1990

The Developing Natural Gas Futures Market and Its Potential Impact on Domestic Natural Gas Markets

(Discusses futures markets vs. physicals markets, which include spot markets.)

April 1990

The Outlook for Natural Gas

(Discusses projections of natural gas markets through the year 2010.)

May 1990

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1989

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

June 1990

U.S. Natural Gas Imports and Exports - 1989

(Contains final 1989 data on all U.S. imports and exports of natural gas.)

July 1990

Resurgence in Natural Gas Wellhead Productivity

(Explores the factors that contributed to the recent increases in natural gas wellhead production.)

October 1990

Update on U.S. Coalbed Methane Production

(Presents estimates of annual coalbed methane production through 1988 by basin and field.)

January 1991

Take-or-Pay Settlements

(Presents information on the resolutions of the take-or-pay issue.)

February 1991

Recent Trends and Regional Variability in Underground Storage Activities

(Discusses underground storage in the expansion of end-use markets.)

March 1991

Natural Gas Transportation Services: An Update

(Reassesses transportation market activities by examining data through 1989 for major interstate pipeline companies.)

April 1991

An Overview of Recent Developments in the Underground Storage Market

(Reviews the changing market for underground natural gas storage services in the United States.)

May 1991

Analysis of Long-Term Contracts for Imports of Canadian Natural Gas

(Focuses on the contractual provisions that will govern imports of natural gas from Canada through the 1990's and beyond.)

June 1991

Natural Gas Productive Capacity for the Lower 48 States, 1980 through 1991

(Summarizes the full report and contrasts the findings for two major producing regions: Texas and the Gulf of Mexico Outer Continental Shelf.)

July 1991

The Outlook for Natural Gas 1991

(Focuses upon the natural gas supply and market aspects of the forecasts contained in the *Annual Outlook for Oil and Gas 1991*.)

August 1991

U.S. Natural Gas Imports and Exports - 1990

(Contains final 1990 data on all U.S. imports and exports of natural gas.)

September 1991

Background on the Natural Gas Industry

(Focuses on changes in the industry that pertain to natural gas.)

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1990

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

March 1992

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

August 1992

U.S. Natural Gas Imports and Exports - 1991

(Contains final 1991 data on all U.S. imports and exports of natural gas.)

November 1992

Natural Gas Futures Contract Market - The First 2 Years

(Reviews the financial and economic significance of trading in natural gas futures markets.)

December 1992

Three-Dimensional Seismology -- A New Perspective

(Describes the impact 3D seismology will have on future U.S. reserves and production.)

Imports of Canadian Gas Under Long-Term Contracts

(Addresses how regulatory changes have altered the contractual revisions of long-term agreements.)

March 1993

Natural Gas 1992: Issues and Trends

(Provides an overview of the natural gas industry in 1991 and 1992, focusing on trends in production, consumption, and pricing of natural gas.)

Natural Gas Productive Capacity

(Analyzes monthly natural gas wellhead productive capacity and projects this capacity for 1992 and 1993.)

April 1993

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

August 1993

U.S. Natural Gas Imports and Exports - 1992

(Contains final 1991 data on all U.S. imports and exports of natural gas.)

Appendix E

Technical Contacts

Appendix E

Technical Contacts

Section	Tables		Principal Data Sources	Technical Contact
Summary Statistics: Natural Gas Production and Consumption	1, 2, 3	Monthly: Annual:	Interstate Oil and Gas Compact Commission (IOGCC) EIA-627, "Annual Quantity and Value of Natural Gas Report"	Donna Dunston (202) 586-6135
		Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Extraction Loss	1	Monthly: Annual:	EIA computations Form EIA-816, "Monthly Natural Gas Liquids Report" and Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"	Margo Natof (202) 586-6303
Supplemental Gaseous Fuels	2	Monthly: Annual:	EIA computations Form EIA-176, "Annual Report of Natural and Supplemental Gas Sup- ply and Disposition"	Donna Dunston (202) 586-6135 Margo Natof (202) 586-6303
Imports and Exports	2	Monthly: Annual:	EIA computations Form FPC-14, "Annual Reports for Importers and Exporters of Natural Gas"	Norman Crabtree (202) 586-6181
Price: City Gate, Residential, Commercial, and Industrial	4	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Imports and Purchases from Producers	4	Monthly:	Form FERC-11, "Natural Gas Pipe- line Company Monthly Statement"	James Keeling (202) 586-6107
Wellhead	4	Monthly: Annual:	EIA computations Form EIA-627, "Annual Quantity and Value of Natural Gas Report"	Donna Dunston (202) 586-6135
Electric Utility	4	Monthly:	Form FPC-423, "Cost and Quality of Fuels for Electric Power Plants"	Roy Kass (202) 586-4790
Summary of Natural Gas Im- ports and Exports	5, 6	Monthly:	Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas"	Norman Crabtree (202) 586-6181
Producer Related Activities: Natural Gas Production	7	Monthly:	Interstate Oil and Gas Compact Commission (IOGCC)	Donna Dunston (202) 586-6135
Interstate Pipeline Activities:	8, 9, 10, 11, 12	Monthly:	Form FERC-11, "Natural Gas Pipe- line Company Monthly Statement"	James Keeling (202) 586-6107
Underground Storage:	13, 14, 15, 16, 17	Monthly:	Forms FERC-8 and EIA-191, "Un- derground Gas Storage Report"	Rosemary Jameson (202) 586-6229
Distribution and Consumption:				
Deliveries to:				
Residential,	18	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Commercial,	19			
Industrial,	20			
Electric Utility,	21		Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	
All Consumers	22			
Average Price to:				

City Gate	23	Monthly:	Form EIA-857, "Monthly Report of	Roy Kass
Residential,	24		Natural Gas Purchases and Deliveries	(202) 586-4790
Commercial,	25		to Consumers"	
Industrial,	26		Form FERC-423, "Cost and Quality	
Electric Utility	27		of Fuels for Electric Power Plants"	
Onsystem Sales	28	Monthly:	Form EIA-857, "Monthly Report of	Roy Kass
			Natural Gas Purchases and Deliveries	(202) 586-4790
			to Consumers"	
Heating Degree Days	29	Seasonal:	National Oceanic and Atmospheric	Rosemary Jameson
			Administration	(202) 586-6229
Highlights				Audrey Corley
				(202) 586-4804
Industry Overview				Eva Fleming
				(202) 586-6113

Glossary

Balancing Item: Represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems which vary in scope, format, definitions, and type of respondents.

Base (Cushion) Gas: The volume of gas needed as a permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates throughout the withdrawal season. All native gas is included in the base gas volume.

British Thermal Unit (Btu): The heat required to raise the temperature of one pound of water by one degree Fahrenheit at or near 39.2 degrees Fahrenheit.

City-gate: A point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system.

Commercial Consumption: Gas used by nonmanufacturing organizations such as hotels, restaurants, retail stores, laundries, and other service enterprises, and gas used by local, State, and Federal agencies engaged in nonmanufacturing activities.

Depletion: The loss in service value incurred in connection with the exhaustion of the natural gas reserves in the course of service.

Depreciation: The loss in service value not restored by current maintenance, incurred in connection with the consumption or respective retirement of a gas

plant in the course of service from causes that are known to be in current operation and against which the utility is not protected by insurance; for example, wear and tear, decay, obsolescence, changes in demand and requirements of public authorities, and the exhaustion of natural resources.

Dry Natural Gas Production: Marketed production less extraction loss.

Electric Utility Consumption: Gas used as fuel in electric utility plants.

Exports: Natural gas deliveries out of the continental United States and Alaska to foreign countries.

Extraction Loss: The reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Flared: The volume of gas burned in flares on the base site or at gas processing plants.

Gross Withdrawals: Full well stream volume, including all natural gas plant liquid and nonhydrocarbon gases, but excluding lease condensate. Also includes amounts delivered as royalty payments or consumed in field operations.

Hinshaw Pipeline: A pipeline or local distribution company that has received exemption, (by Section 1 (c) of the Natural Gas Act), from regulations pursuant to the Natural Gas Act. These companies transport interstate natural gas not subject to regulations under NGA.

Imports: Natural gas received in the Continental United States (including Alaska) from a foreign country.

Independent Producers: Any person who is engaged in the production or gathering of natural gas and who sells natural gas in interstate commerce for resale but who is not engaged in the transportation of natural gas (other than gathering) by pipeline in interstate commerce.

Industrial Consumption: Natural gas used by manufacturing and mining establishments for heat, power, and chemical feedstock.

Interstate Companies: Natural gas pipeline companies subject to FERC jurisdiction.

Intransit Deliveries: Redeliveries to a foreign country of foreign gas received for transportation across U.S. territory and deliveries of U.S. gas to a foreign country for transportation across its territory and redelivery to the United States.

Intransit Receipts: Receipts of foreign gas for transportation across U.S. territory and redelivery to a foreign country and redeliveries to the United States of U.S. gas transported across foreign territory.

Intrastate Companies: Companies not subject to FERC jurisdiction.

Lease and Plant Fuel: Natural gas used in well, field, lease operations and as fuel in natural gas processing plants.

Liquefied Natural Gas (LNG): Natural gas that has been liquefied by reducing its temperature to minus 260 degrees Fahrenheit at atmospheric pressure.

Major Interstate Pipeline Company: A company whose combined sales for resale, and gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Marketed Production: Gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations. Includes all quantities of gas used in field and processing operations. See Explanatory Note 1 for discussion of coverage of data concerning nonhydrocarbon gases removed.

Native Gas: Gas in place at the time that a reservoir was converted to use as an underground storage reservoir as in contrast to injected gas volumes.

Natural Gas: A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or solution with oil in natural underground reservoirs at reservoir conditions.

Natural Gas Policy Act of 1978 (NGPA): Signed into law on November 9, 1978, the NGPA is a framework for the regulation of most facets of the natural gas industry. See Explanatory Note 10 for a full discussion.

Nonhydrocarbon Gases: Typical nonhydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide, and nitrogen.

Onsystem Sales: Sales to customers where the delivery point is a point on, or directly interconnected with, a transportation, storage, and/or distribution system operated by the reporting company.

Pipeline Fuel: Gas consumed in the operation of pipelines, primarily in compressors.

Repressuring: The injection of gas into oil or gas formations to effect greater ultimate recovery.

Residential Consumption: Gas used in private dwellings, including apartments, for heating, cooking, water heating, and other household uses.

Storage Additions: The volume of gas injected or otherwise added to underground natural gas or liquefied natural gas storage during the applicable reporting period.

Storage Withdrawals: Total volume of gas withdrawn from underground storage or liquefied natural gas storage during the applicable reporting period.

Supplemental Gaseous Fuels Supplies: Synthetic natural gas, propane-air, refinery gas, biomass gas, air injected for stabilization of heating content, and manufactured gas commingled and distributed with natural gas.

Synthetic Natural Gas (SNG): A manufactured product chemically similar in most respects to natural gas, that results from the conversion or reforming of petroleum hydrocarbons and may easily be substituted for or interchanged with pipeline quality natural gas.

Therm: One-hundred thousand British thermal units.

Underground Gas Storage Reservoir Capacity: Interstate company reservoir capacities are those certificated by FERC. Independent producer and intrastate company reservoir capacities are reported as developed capacity.

Vented Gas: Gas released into the air on the base site or at processing plants.

Wellhead Price: Represents the wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas, gathering and compression charges, and State production, severance, and/or similar charges.

Working (Top Storage) Gas: The volume of gas in an underground storage reservoir above the designed level of the base. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any season.

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