Natural Gas Monthly

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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 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. Cubic feet are converted to cubic meters by applying a factor of 0.02831685.

Beginning with the January 1997 issue of the *Natural Gas Monthly*, the Energy Information Administration proposes to make changes to the data shown for the latest two months in each issue. These data are taken from the Short-Term Integrated Forecasting System (STIFS), a modeling system that produces energy forecasts for petroleum, natural gas, coal, electricity, and renewable energy. It is driven principally by three sets of assumptions: estimates of key macroeconomic variables, world oil price assumptions, and assumptions about the severity of weather.

For the natural gas industry, the STIFS model provides estimates for net storage withdrawals but not for withdrawals and injections separately. Other procedures have been used to estimate withdrawals and injections to appear in this report. EIA has determined that the net withdrawals number alone is a reliable indicator of natural gas storage activity for the latest two months, while the withdrawals and injections estimates are subject to large variations. Beginning in 1997, EIA will publish only the net withdrawals number.

Similarly, for natural gas production the STIFS model provides estimates only for marketed production and dry production. Other procedures have been used to estimate gross withdrawals, repressuring, nonhydrocarbon gases removed, and gas vented and flared. EIA has determined that the marketed production and dry production numbers are the most reliable indicators of gas production activity, and will publish only those numbers beginning in 1997. (Extraction loss, the difference between marketed production and dry production, will also be published.)

STIFS estimates will appear in the tables as follows:

- Table 1: Estimates for the latest two months will be shown only for marketed production, extraction loss, and dry production.
- Table 2: For all months, storage injections and withdrawals will be combined and shown only in the supply section as net storage withdrawals. Estimates for the latest two months will then be shown for all data series in the table.
- Table 3: No changes. In this table, estimates are given for the latest three months.
- Table 9: Estimates for the latest two months will be shown for all data series in the table except injections and withdrawals. Injections and withdrawals will be shown for all other months.

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
		Mcf	Thousand Cubic Feet
Bcf	Billion Cubic Feet	MMBtu	Million British Thermal Units
BOM	Bureau of Mines, U.S. Department of the Interior	MMcf	Million Cubic Feet
		MMS	United States Minerals Management Service, U.S. Department of the Interior
Btu	British Thermal Unit		
DOE	U.S. Department of Energy	NGL	Natural Gas Liquids
DOI	U.S. Department of the Interior	OCS	Outer Continental Shelf
EIA	Energy Information Administration, U.S. Department of Energy	Tcf	Trillion Cubic Feet
FERC	Federal Energy Regulatory Commission		

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Special Focus

Natural Gas 1996: Issues and Trends—Executive Summary

Natural Gas 1996: Issues and Trends focuses on the increasing choices available to participants in the natural gas industry, from suppliers to consumers, at a time when regulatory restraints increasingly are removed from the sale and transport of natural gas. The industry faces significant challenges, such as how to deal with price volatility. In addition, cost-conscious suppliers, marketers, distributors, and consumers now pay increased attention to inventory levels and reducing excess capacity and stocks. Highlights of recent trends and developments in the industry include the following:

- Wellhead prices in 1995 averaged \$1.55 per thousand cubic feet (Mcf), a steep decline of 16 percent from 1994 (Figure ES1). Monthly average prices rose sharply to \$1.84 per Mcf in December 1995 in response to cold weather and have continued higher than the December level throughout 1996. The particularly high price for July 1996 of \$2.35 per Mcf was in part due to strong demand from storage customers who found their stocks at record lows after the cold winter of 1995-96.
- Residential and commercial gas consumption during the first 11 months of 1996 was 9 percent higher than during the same period of 1995 in response to cold weather that extended into the spring. Electric utility consumption was down 9 percent during this period, in part because the average price to this sector through July exceeded that of 1995 by 35 percent. Overall end-use consumption through November 1996 averaged 3 percent above the level for the same period in 1995, continuing the general upward trend since 1986. For the year 1995, overall end-use consumption of natural gas was 19.7 trillion cubic feet, an increase of 4 percent above the 1994 level.
- Natural gas production, which declined slightly in 1995 to 18.6 trillion cubic feet, is expected to reach the highest annual level since 1981 by the end of 1996. Production for the year through November 1996 exceeds levels for the comparable period in both 1994 and 1995.
- Working gas storage levels at the end of March 1996 reached a record low of 755 billion cubic feet. As a consequence, storage refill activity from April through September 1996 was 20 percent higher than during the same period in 1995. Preliminary estimates indicate that working gas stocks at the start of the 1996-97 heating season (November 1) were about 2.8 trillion cubic feet, 7 percent lower than at the same time last year. Nevertheless, this level appears sufficient since net withdrawals during the past three heating seasons ranged from 1.8 to 2.3 trillion cubic feet.
- New and expanded storage facilities added 1,395 million cubic feet to daily deliverability in 1995, an increase of 2 percent over the 1994 level. High-deliverability salt cavern storage dominated the additional deliverability, accounting for 65 percent of the increase.
- Differences between the eastern and western supply markets are evident from the different price movements for two natural gas futures contracts: the New York Mercantile Exchange (NYMEX) contract at the Henry Hub in southern Louisiana; and the relatively new Kansas City Board of Trade (KCBOT) contract at the Waha Hub in West Texas. Prices for the nearby contract (for delivery the next month) on both futures markets rose from August through December 1995, but prices for the Henry Hub contract almost doubled while prices for Waha Hub contracts increased about 50 percent.
- Several recently completed and proposed pipeline expansions reflect the need to eliminate bottlenecks between western supply areas and eastern markets. During 1995, several intrastate pipeline companies in Texas increased capacity between the West Texas Waha area and market centers located in eastern Texas and Louisiana. This, and the planned expansion of 350 million cubic feet per day from the San Juan Basin (New Mexico) to the Waha area, should help to move production from western to eastern markets.
- The capacity release market has grown steadily since its inception in 1993 and has generated nearly \$1.2 billion in revenue to releasing shippers. But average rates for released capacity are still well below maximum tariff rates. In the 1995-96 heating season, rates were discounted an average of 65 percent from the maximum, while during the 1995 nonheating season, rates were discounted 83 percent.

Figure ES1. Wellhead Prices Are Very Volatile

Notes: All prices are in nominal dollars. The labeled months are the month of the maximum and minimum prices in each year.

Sources: Energy Information Administration. 1991-1992—*Historical Monthly Energy Review*, 1973-1992. 1993—*Natural Gas Monthly* (March 1996). 1994-August 1996—*Natural Gas Monthly* (November 1996).

The Industry Continues to Adjust Inventory Practices and Test Adequate Storage Levels

With significant price volatility in the spot and futures markets, the inherent risk in holding large storage inventories is great for distribution companies and other major users of conventional storage reservoirs, especially as energy markets have become increasingly competitive and cost conscious. In response, many companies have reduced the amount of gas they hold in reserve at storage sites. This movement is illustrated by the use of underground storage during the past heating season. At the start of the 1995-96 heating season, the level of working gas in storage was below 3.0 trillion cubic feet (Tcf) for only the second time in 15 years. By the end of December, working gas in storage was at a 20-year low of 2.2 Tcf for the month as record withdrawals of 1,002 billion cubic feet occurred during November and December. Preliminary monthly data indicate that 2.7 Tcf of gas was withdrawn from storage during the 1995-96 heating season, the highest total ever recorded. By the end of March, storage levels were at record lows and were only 20 percent of total working gas capacity.

The industry, operating with lower storage levels, was able to provide reliable service during the past heating season. One reason is that new technologies, such as horizontal drilling in conventional oil/gas storage reservoirs, have enabled the

industry to bring larger amounts of incremental supplies of gas to market more quickly than in the past. Another reason is the greater use of salt cavern or high-deliverability storage facilities, which can be cycled numerous times throughout the year. The industry is increasingly taking advantage of this type of storage facility. About two-thirds of the storage deliverability brought on line in 1995 was high-deliverability storage. In addition, storage operators cycled salt cavern storage about 1.14 times in the past heating season, up from 0.53 in 1991-92 (Figure ES2). At sites associated with market centers, cycling of storage was at a much higher average of 1.45 during the past heating season, reflecting the strategic value of storage sites, particularly salt cavern, associated with hubs and market centers. Before 1993, this type of storage was often marketed like conventional storage and used primarily as seasonal backup supply rather than as peaking or short-term swing supply.

Hubs and Market Centers Are a Key Aspect of an Increasingly Integrated Delivery System

The development of market centers and hubs is one of the most recent innovations in the natural gas marketplace. At least 39 centers are operating in the United States and Canada, providing numerous interconnections and routes to move gas from production areas to markets. Another 6 are expected to begin operations during the next several years. The market

Figure ES2. Salt Cavern Cycling Has Increased

Notes: A heating year is from April of one year through March of the next year; for example, heating year 1991-92 is April 1991 through March 1992.

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

center segment of the industry is still in its formative years; 27 of the centers have been operating only since the beginning of 1994. Many of the recently opened market centers are gradually developing their business, concentrating their major marketing efforts on the services that are reflected in the physical capabilities of their supporting systems. For instance, those with associated storage, in general, provide significant short-term parking, gas loans, and storage capacity brokering. In fact, storage is vital to the operations of most market centers; 47 percent of working gas storage capacity in North America is directly or indirectly accessible by market centers. Furthermore, market center operations are connected to practically all the high-deliverability storage facilities in North America.

Market centers, with their access to multiple pipeline interconnections and supplies, provide a natural platform for gas trading, risk management, and opportunities for arbitrage. More than 17 centers offer access to electronic trading while others provide a trading staff. Trading at market centers provides a means of reducing price risk exposure and gives traders access to lower cost supplies available at one site that can be transported and sold at another location offering higher prices. Very active trading at several centers has benefited from and/or has complemented the growth in the natural gas futures contract market, for instance, at the Henry Hub (NYMEX) and West Texas market center areas (NYMEX and

KCBOT). More than 25 pipeline systems have access to these market centers.

At this point, it would appear that most market centers are not operating near their full potential even though they have expanded the number of services they offer and are doing increasing business. For instance, salt cavern storage sites associated with market centers are frequently less than 40 percent full (Chapter 3), and the amount of withdrawals at these sites is rarely near upper limits from one week to the next. If these facilities were constantly being recycled (inventory turnover), they would be much closer to being filled and the percentage amount full would change from one week to the next. The recycling capability of these storage facilities could allow customers to take advantage of trading opportunities provided by the great daily volatility in gas prices and demand and by the daily and weekly imbalance situations experienced by many companies.

Significant Price Divergence Continues Between Supply Regions

The growth of market centers has created a more competitive environment for natural gas. In regional markets, gas prices are a signal of relative demand and supply conditions in those markets, and they also can indicate the degree of competition between markets. If gas markets are supported by an efficient

infrastructure, such as the transmission network and institutional systems, regional demand and supply conditions will be interrelated, causing similar movements in prices, although price levels are not expected to be uniform. Analysis of spot market prices at selected locations across the United States for months between November 1993 and May 1996 indicates that the relatedness of markets varies widely. Markets within the western, central, and eastern regions seem well interconnected even for locations that are considerable distances apart, such as the Henry Hub location (south Louisiana) and Eastern Canada. Competition among the three broad regions is significantly weaker, especially between the western and eastern regions.

Market integration apparently improved in recent years, and regional clusters of markets across certain broad areas seem to be highly competitive, even between U.S. and Canadian markets. It is probably premature, however, to conclude that a true North American market for natural gas has emerged in light of the seeming separation in competition between the eastern, central, and western markets. Some of the market separation relates to capacity bottlenecks in parts of the country, and there is significant activity underway to address these capacity constraints. Several intrastate pipeline projects were completed in 1995 and more are proposed to expand capacity to move gas from the Permian and San Juan Basins to eastern and midwestern markets. Overall proposed capacity additions could increase interregional capacity as much as 7 percent by the end of 1999.

Expiration of Contracts for the Reservation of Interstate Pipeline Capacity Concerns Many in the Industry

Some shippers are "turning back" all or part of their capacity commitments when transportation contracts come up for renewal. The extent and implications of a reduction in capacity reservations is an emerging concern for the transportation industry. In monetary terms, the potential impact of turnback is significant. By December 31, 2001, contracts covering half of current capacity reservations will expire. If 20 percent of this capacity would remain unsubscribed, it would represent a \$686 million reduction in annual pipeline company revenues. Cost recovery by pipeline companies is a major concern in this circumstance.

The amount of capacity under expiring contracts varies by region and by pipeline company, but the outlook for extensive capacity expirations (85 to 100 percent) by 2010 is the same for each of the regions (Figure ES3). Cumulative expirations in the United States will total 51 percent by 2001 and 89 percent by 2010. The Southwest, Central, and Midwest regions have the greatest potential for significant turnback through the mid term (April 1996 through 2001), whereas the Northeast and West have the least because of the

predominance of 20 to 30 year contracts. Between 2002 and 2010, more than 50 percent of current reservations will expire in the Northeast and West, increasing cumulative expirations to 85 percent in both regions.

Today, in the market for pipeline capacity, long-term contracts may not be flexible enough to keep pace with changing market conditions. Capacity turnback may signify a period of adjustment for the transportation market similar to the transition from long-term to short-term and spot contracts that occurred in the wellhead gas market in the 1980's. Over the long term, the current changes may lead to the development of alternatives to current transportation services. Other possibilities include a spot market for transportation, increased commoditization of capacity, and the development of financial instruments for the transportation segment of the gas industry.

Service Choices Are Increasing for All Customers

Although the restructuring of the natural gas industry started more than 10 years ago, it is far from complete. By 1995, large segments of the gas industry had measurable cost reductions as a result of the introduction of competitive market forces into the industry's operations. Average inflation-adjusted gas prices have fallen for all types of consumers. Electric utility purchases show that prices to this group have fallen by more than a third between 1990 and 1995. However, residential and commercial customers, most of whom still purchase bundled gas services from regulated franchised distribution companies, on average experienced relatively modest real price declines of about 10 percent.

These residential and small commercial customers are only now beginning to have the benefits of competitive supply choices. State efforts to provide smaller residential and commercial customers service choice by providing access to unbundled gas services are gaining momentum. Many States are actively examining or implementing some form of small customer unbundling program, which will give smaller customers of local distribution companies (LDCs) access to competitive gas markets already enjoyed by their larger customers. Some regulatory agencies have begun to reduce the threshold volume of gas consumption needed to qualify customers for LDC transportation-only services. They are initiating experiments to encourage smaller customers, even residential users, to aggregate into groups and exercise choice in gas markets.

Electric Power Restructuring Will Change the Market for Natural Gas

With the issuance of Order 888 in April 1996, regulatory oversight of the electric power industry is changing and, like the restructuring of the natural gas industry, will provide more

Figure ES3. Extensive Expirations of Firm Capacity Contracts Will Occur in All Regions by 2010
(Trillion Btu)

Source: Energy Information Administration, Office of Oil and Gas, derived from Federal Energy Regulatory Commission (FERC) Index of Customers data for April 1, 1996, FERC Bulletin Board (August 28, 1996).

choice for buyers and sellers of electric power. As in the gas markets, the first retail electricity consumers to have choices of suppliers will be high-volume customers. If market pricing significantly lowers electricity prices to these users, it could lead to the substitution of electricity for gas in industrial processes and undercut gas sales to manufacturers. In many other uses such as residential service, however, electricity is about four times more expensive than gas before adjustments for conversion efficiency. Opportunities for electricity to attract new customers or to displace existing gas sales in these markets are less likely given the wide gas-price advantage.

Other aspects of electric restructuring may imply a closer relationship in the future for both industries. Innovative

developments in the gas industry during the past 10 years foretell some of these changes. Gas marketers have reformed gas supply relationships. Many of these same marketers are moving into the new electricity markets. In an effort to create integrated "energy" markets, as opposed to continuing separate, isolated markets, gas and electric companies are forming mergers and strategic alliances to give customers menus that allow buyers to bridge the differences between the industries. The electric business also appears to have caught the attention of the financial community. The development of financial instruments already used in the gas industry, such as spot, forward, futures, and options contracts, are being taken as models for electricity. These financial markets may help integrate the energy markets.

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Crosswell Seismology -- A View from Aside

Robert Haar

Introduction

Crosswell seismology is a geophysical technique that can be used to image the intricate geologic structure and subtle properties of petroleum reservoirs, providing valuable information pertaining to all stages -- primary, secondary, and tertiary -- of oil and gas recovery. The crosswell method involves the measurement of seismic waves that originate from sources in one borehole and travel through a local part of the earth to receivers in another borehole. Two complementary methods, tomography and reflection seismology, have been applied to crosswell data.

Tomography is a technique that was borrowed from medicine, where it is used for computer-assisted tomography (CAT) scans. By surrounding a target with sources and receivers, tomography offers a multifaceted perspective on the target. Unfortunately, the method works much better in medicine than in seismology. Poor resolution, lack of good downhole sources, and high costs diminished the initial interest of the oil and gas industry in tomography. However, exciting results have more recently been obtained in crosswell studies using special adaptations of a well-established geophysical technique, reflection seismology.

Crosswell reflection seismology can yield very high resolution images of the earth's subsurface between two boreholes. Improved resolution results from reflection seismology making use of the full seismogram, not just the first arrivals as in tomography. Most important, reflection seismology in the crosswell configuration yields significantly enhanced resolution relative to the conventional (surface) configuration because the near-surface layer of the earth can be avoided. The near-surface layer removes high frequencies from seismic waves and, in general, causes signal degradation. Other than direct observations (e.g., well-logs), crosswell reflection seismology offers the finest scale of geophysical field measurements.

The geologic and economic implications of increasing our understanding of domestic reservoirs via innovations such as crosswell seismology are literally immense. A significant portion, if not most, of the nation's oil and gas resources is inaccessible due to limited technology or prohibitive cost. Crosswell seismology has particular promise in application to existing oil and gas fields, where reservoirs may have isolated compartments or bypassed zones that could be more fully developed. The potential application of crosswell methods to

monitoring of enhanced oil recovery operations has already been demonstrated. Through these applications, a moderate increase in recoverable oil and gas could have a significant economic effect on domestic markets and the U.S. balance of trade.

The future direction of crosswell seismology is uncertain, especially given its recent redirections and the current R&D environment in the oil and gas industry. Its success will depend somewhat on whether technological innovations can reduce the current high cost. Performing seismology in a borehole is expensive, but recent improvements in design and methodology should lower the cost in the near future. The near-term course of crosswell seismology also depends on how well the earth sciences (in particular, geophysics) can be integrated in the field with petroleum engineering.

This article is intended as a general introduction to crosswell seismology and its geologic and economic implications for the domestic oil and gas industry. The Energy Information Administration has a strong interest in identifying and understanding the evolving factors that may affect domestic petroleum reserves and production. And clearly, the future course of the domestic petroleum industry depends on research and the development of promising techniques such as crosswell seismology.

The Crosswell Technique

General Background

In oil and gas seismology applications, a seismic source (e.g., dynamite, vibrator) is used to generate seismic waves that propagate along various paths through the earth.^{1, 2} The raypath for a given wave depends on the earth's velocity field and the departure angles from the source. Seismic waves change directions and characteristics as they encounter heterogeneities in the earth. A wave can gradually change direction (i.e., bend) if it traverses a section of the earth where seismic velocity continuously varies, such as a sedimentary

¹M.B. Dobrin, *Introduction to Geophysical Prospecting*, McGraw-Hill, 1976.

²W.M. Telford et al., *Applied Geophysics*, Cambridge University Press, 1976.

layer increasingly compressed by overburden pressure. An abrupt change in direction (i.e., reflection or refraction) can occur at discontinuities of seismic velocity in the earth, such as at the interface between two different rock types.

A wave's characteristics, such as its amplitude and frequency content, can also change as it propagates through the earth. The amplitude of a wave decreases along a raypath due to absorption and scattering of seismic energy. The recorded signal amplitude is further affected by focusing and defocusing of waves in the earth. The frequency content, or spectrum, of a wave is affected by many factors, including the earth's attenuation (which consists of both absorption and scattering from small-scale heterogeneities). Unfortunately, the earth's attenuation preferentially removes high wave frequencies which are critical for obtaining high resolution subsurface images. The net effect is that a wave is continuously filtered as it travels from a source to a receiver; that is, the wave's shape is distorted and its energy is dissipated in transit.

After traveling through the earth, seismic waves are detected by an array of receivers called seismometers. Seismometers are usually posited at equally spaced intervals along a line, which can be on the earth's surface or in a borehole. The geometric configuration of sources and receivers distinguishes different types of petroleum seismology. In traditional seismic methods, sources and receivers are located on or near the earth's surface. The layout for conventional two-dimensional (2D) seismology is depicted in Figure FE1a; three-dimensional seismology is similar, but with the sources and receivers distributed over a grid on the earth's surface. Crosswell seismology, in its simplest form, refers to a configuration in which seismic sources are located in one borehole and receivers are located in another borehole (see Figure FE1b). There is also a hybrid of the surface and borehole techniques, called vertical seismic profiling, that has sources in a borehole and receivers on the surface of the earth (this method will not be further discussed in this article).

The signals detected by the seismometers are recorded as seismograms for later processing and interpretation. Essentially, the recorded waves contain cumulative information about wherever they have traveled. The objective of seismic processing is to invert the seismic data to obtain a well-resolved and accurate map of the earth's geologic structure and properties. Inversion of seismic observations is an enigmatic, geophysical problem.

The fundamental problem of geophysics is to determine the parts from the whole; that is, to delineate fine-scale earth properties from many aggregate measurements. Specifically, the goal in seismology is to determine from observations made at the endpoints (i.e., source and receiver locations) what is in-between the endpoints (i.e., the earth's structure

along the raypaths). For example, a single traveltimes measurement indicates only the aggregate effect of local velocities along a particular raypath, but a set of such measurements for many different source-receiver pairs facilitates (actually, constrains) the calculation of local velocities along all raypaths, i.e., it provides a more refined model of the earth's velocity field. Sophisticated mathematical techniques and efficient computer algorithms have been developed to do this type of data processing.

An iterative approach, incorporating geophysical processing, numerical modeling, and geologic interpretation, is usually implemented for the analysis of seismic data. Geologic interpretation of seismic data is a blend of art and science. In some cases, petroleum can be directly observed (e.g., bright spots); in other cases, geological structures (i.e., traps) that might contain petroleum can be observed. But often the seismic manifestation of a geologic feature or a property of the earth is subtle and complex, requiring collaborative interpretation and analysis by geologists and geophysicists. The resulting maps, depicting the geologic interpretation of a section of the earth, can greatly facilitate the discovery and development of petroleum reservoirs.

Tomography

The basic idea of tomography is to surround a target with many sources and receivers.³ The difference in perspective between tomography and conventional (surface) seismology can be understood in terms of viewing a sculpture in the middle of a room in an art museum. Viewing the sculpture from one end of the room gives a "flat" perspective similar to that of conventional seismology. But walking around the sculpture, viewing it from different angles, yields a perspective similar to that of seismic tomography. In technical terms, conventional seismology depends overwhelmingly on nearly vertical raypaths, while borehole (crosswell) seismology can measure waves that propagate in a broader range of directions (including horizontal).

The tomographic technique (i.e., computer-assisted tomography, or CAT-scanning) was developed in medicine to image the human body. In crosswell seismology,⁴ the relative orientation of sources, receivers, and the target is somewhat conducive to performing similar analysis. Tomographic data contain information about waves transmitted through the target along many paths; that is, the volume of interest is sampled by a set of raypaths with sufficient spatial and

³R.R. Stewart, *Exploration Seismic Tomography: Fundamentals*, Society of Exploration Geophysicists Course Notes Series, 1991.

⁴J. Wong et al., "Cross-Hole Seismic Scanning and Tomography," *Geophysics: The Leading Edge of Exploration* (January 1987), pp. 36-41.

Figure FE1a. Conventional Two-Dimensional Seismic Survey

Both sources and receivers are located on the surface of the earth. Usually, only reflected waves are analyzed.

Figure FE1b. Crosswell Seismic Survey

Both sources and receivers are located in boreholes. Waves that are transmitted through the target, as well as reflected waves, can be analyzed.

angular distributions. From these data, an image of the interior of the earth or a human body can be constructed. In seismology, field data are processed to obtain a map of the earth's seismic velocity or other properties such as attenuation.

In addition to a more comprehensive perspective (i.e., greater angular distribution of observations), crosswell seismology can sample a limited area with a large number of raypaths (i.e., dense spatial coverage). A high density of raypaths is essential for the tomographic technique to work. Another advantage of crosswell seismology is the relative proximity of sources and receivers to the intended targets. In conventional seismology, sources and receivers are located on the earth's surface and, for all but the most shallow reservoirs, most of the raypaths will be in the "extraneous," intervening medium, i.e., outside of the target area. The proximity to the target, as well as the relatively close spacing of boreholes used in crosswell seismology, allows literally a closer look at the area of interest.

Tomographic Tribulations

Geophysicists were enthralled a few years ago with the idea of using tomographic techniques and crosswell seismology to obtain high-resolution images of oil reservoirs, especially for monitoring enhanced oil recovery operations. Although a flurry of research articles appeared in the early 1990's, interest subsequently waned. The lack of widespread field applications after the initial pilot studies seems conspicuous when compared to the developmental history of other geophysical techniques, such as three-dimensional (3D) seismology. For some years now, crosswell seismology seems to have been relegated to ongoing research projects at a few universities and oil companies.^{5, 6}

Perusing the geophysical literature, and comparing the early work to more recent activity, suggests that crosswell tomography did not live up to its original promise. Why was the tomographic method so successful in medicine, but relatively disappointing in geophysics? Unlike its medical counterpart, seismic tomography suffers, in practice, from poor spatial resolution. Spatial resolution refers to the quality of a seismic image -- the sharpness of boundaries, the detection of small features, etc. The primary reason for the relatively poor resolution is that tomographic analysis can only make use of waves that follow the simplest, most direct raypaths between sources and receivers.

"Simple" and "direct" have different meanings in medicine and geophysics. In medicine, a direct wave is the first to arrive at each detector, and it travels along a nearly straight line through the human body (see Figure FE2a). In geophysics, a so-called direct wave is not always the first arrival at each receiver, and it usually travels along a more complicated, nonlinear path (Figure FE2b). This makes the interpretation of seismic tomographic data much more difficult. Seismic tomography is further hampered by our inability to surround a petroleum reservoir with sources and receivers, which limits the spatial and angular distribution of measured waves.

The scaling and relative orientation of the geophysical problem is significantly different from that of medical imaging. A typical well is only a few thousand feet deep and penetrates a relatively thin reservoir layer (see Figure FE3). Thus, the geometry of most conventional oil and gas fields does not afford an adequate tomographic configuration. Geophysicists have to contend with relatively shallow holes separated by large distances while looking for small targets.

Also, unlike its medical counterpart, crosswell seismology has suffered from inadequate wave sources. A downhole seismic source must withstand harsh conditions (i.e., high temperature and pressure) in a wet or dry environment. It must generate waves in a manner that minimizes the risk of damage to the oil or gas well. Most importantly, a downhole source must generate adequate power at high frequencies to allow high-resolution images to be obtained.

Another problem with seismic tomography is the sparsity of data outside the central "focal" area between the source and receiver boreholes. A prominent data void lies in the area beneath the wells used in crosswell seismology. If a borehole terminates near the top of a reservoir (and this is common), then most of the reservoir will be out of view. Another type of data void is due to vagaries of the earth; for example, low-velocity zones "expel" direct (transmitted) waves rather quickly, which causes less of the zone to be sampled. Undersampling causes the tomography problem, in mathematical terms, to be underdetermined, which means the seismological observations cannot be inverted with any certitude to obtain a geologic model of the subsurface.

As the limitations of the tomographic method became apparent, both tomography and crosswell seismology in general lost some of the attention of the oil and gas industry. However, there are signs that crosswell seismology may now be rebounding as seismologists develop crosswell adaptations of a well-established geophysical technique, reflection seismology. Thus, what was initially deemed to be an emerging technology, but later seemed to fade, could now be a re-emerging technology.

⁵J.W. Rector III, "Crosswell Methods: Where are We, Where are We Going?," *Geophysics* (May-June 1995), pp. 629-630.

⁶D. Crice, "Late Arrivals," *The Leading Edge* (August 1993), p. 828.

Figure FE2a. Computer-assisted Tomography (CAT) Scan

Nearly ideal tomographic configuration due to dense coverage (i.e., number of rays transmitted through the target), good angular distribution (i.e., sources and receiver surround the target), and straight raypaths.

Figure FE2b. Seismic Tomography

Not-so-ideal tomographic configuration due to sparse coverage, poor angular distribution, and curved raypaths.

Figure FE3. Typical Scaling for Oil and Gas Wells

Crosswell Reflection Seismology

The reflection method⁷ uses more of the seismogram than just the traveltime of the direct or first-wave arrival. By using all of the recorded data, reflection techniques can produce images with much higher resolution than is possible from tomography alone. In fact, the potential resolution of crosswell reflection seismology, exceeding by about an order of magnitude the resolution of conventional (surface) reflection seismology, is closer to that of the finest-scale geophysical field measurements, well-logs.⁸

Resolution is enhanced because the raypaths between boreholes, unlike those between surface sources and receivers, avoid passing through the earth's near-surface layer. This layer typically consists of weathered rock and unconsolidated material that causes significant signal degradation. Elevation differences, variable seismic velocities, and other heterogeneities create idiosyncratic conditions about each surface receiver. These local variations in near-surface properties affect the travel time measurements (i.e., statics). High attenuation in weathered material distorts the waveform, filtering out much of the high frequency information (i.e., the layer acts as a low-pass frequency filter). The net result for surface sources and receivers is that the resolution of subsurface images can be greatly compromised,

and significant effort must be expended in surface surveys to make corrections for these near-surface effects.

It is important to note that it is not the analysis methods (tomographic or reflection) *per se* that yield the high resolution images, but rather applying one of these methods (reflection) with sources and receivers in boreholes; that is, avoidance of the deleterious effects of the earth's superficial layer is the reason for the notable superiority of recent crosswell imaging relative to conventional surface imaging.

While free of the signal degradation caused by the near-surface layer, the crosswell reflection method, nevertheless, requires some adaptations from the conventional reflection method. In addition to the rotation of coordinates, the effect of the free-surface of the earth (as distinct from the influence of the near-surface layer) is traded for borehole effects. Boreholes have both distinct radiation patterns and their own variety of unwanted noise, called tube waves. In addition, some of the wave types look different from a horizontal perspective. For example, channel waves can propagate within a single layer from borehole to borehole.

Tomography and crosswell reflection seismology are in fact complementary techniques^{9, 10} in that they provide information at different scale-lengths (i.e., different parts of the spatial spectrum) about the same target. Tomography

⁷J.F. Claerbout, *Fundamentals of Geophysical Data Processing*, McGraw-Hill, 1976.

⁸B.C. Smith and J.M. Harris, "Cross-Well Seismic Technique Finds Untapped Gas Reservoirs," *The American Oil & Gas Reporter* (July 1991), pp. 42-46.

⁹C. Zhou et al., "High-Resolution Cross-Well Imaging by Seismic Traveltime + Waveform Information," *The Leading Edge* (October 1993), pp. 988-991.

¹⁰C. Zhou et al., "Acoustic Wave-Equation Traveltime and Waveform Inversion of Crosshole Seismic Data," *Geophysics* (May-June 1995), pp. 765-773.

yields large-scale, albeit blurry, images, while reflection seismology produces fine-scale, or detailed, information. A large-scale velocity map produced by tomographic analysis can be used as input to reflection analysis. Although they are complementary techniques, it is the fineness of detail yielded by reflection analysis that may spark renewed oil and gas industry interest in crosswell seismology.

Connectivity Mapping

Connectivity mapping is a simpler, and less costly, approach to crosswell surveying that can provide significant information about subsurface fluid flow.^{11, 12} This technique focuses on a particular type of seismic signal called a guided wave, which remains "trapped" in a single geologic layer as it propagates from the source to the receiver (see Figure FE4a). For a geologic layer to be a waveguide, it must have a lower seismic velocity than that of the surrounding layers. If this condition is met, the signal can be transmitted over great distances with little attenuation. (This is the same principle that is used to transmit telephone calls and cable signals over communication lines.)

If a source and receiver are located in a single, uninterrupted geologic layer (as in Figure FE4a), then the amplitude and spectral bandwidth of the measured signal will be greatly enhanced. The signal spectrum can also indicate the thickness of a continuous layer. Alternatively, if the low-velocity layer is physically interrupted between the source and receiver wells, such as by a geologic fault, then the signal will be scattered in many directions by the discontinuity (see Figure FE4b). As a result, any measured signal will be greatly diminished in strength. Thus, measuring the seismic properties of guided waves between wells is a way to determine the continuity of geologic layers within a reservoir.

Knowledge of geologic continuity is essential to understanding the fluid dynamics of reservoirs. For example, a continuous shale layer may indicate a flow boundary during oil and gas production. On the other hand, a faulted structure could explain anomalies during secondary recovery operations. Continuity, or connectivity, is a primary factor in determining how to optimally develop and manage a reservoir (e.g., where to locate in-fill drilling). By focusing on the niche of transmission characteristics of guided waves, connectivity mapping does not provide the detailed images of tomography

or reflection techniques. However, it can provide key information at significantly reduced costs compared to the other crosswell techniques.

Looking Across Reservoirs

Reservoir Properties

The principal application of crosswell seismology is to characterize petroleum reservoirs.¹³ A reservoir is an underground formation containing a localized accumulation of hydrocarbons. The accumulation is confined by impermeable rock and is characterized by a single, natural pressure system.

Reservoirs are not simply pools with drain plugs. They can have great structural complexity, as well as intrinsic properties, that pose challenges to development and production. Reservoirs can be multilayered, fractured, or compartmentalized (laterally or vertically; by cementation or other causes) into distinct hydrological units that are inaccessible from the initial production wells.

The most important intrinsic properties of the reservoir rock are porosity and permeability. Porosity refers to the small spaces within the rock matrix that can collect oil and gas. Permeability defines the interconnectedness of the porous spaces. Porosity provides storage space like the memory of a personal computer, while permeability is like being "connected" to other storage areas on the Internet. Retrieval of petroleum, like retrieval of information, is optimized when there are many sites that are interconnected.

Even subtle local variations in reservoir geometry or physical properties can strongly affect the development and production of the reservoir. An accurate and detailed understanding of a reservoir's properties is important to all phases of its development and production. For development, the number and locations of production wells can be optimized. During secondary production, additional wells can be positioned to tap into previously inaccessible or bypassed compartments. And for tertiary recovery, dynamic reservoir models could be constructed to represent temporal changes in fluid flow and allow prediction of the resulting effects at each production well.

¹¹G.E. Tinker et al., "Connectivity Mapping Improves Understanding of Reservoir Continuity," *Oil and Gas Journal* (December 20, 1993), pp. 87-91.

¹²Y. Chon et al., "Reservoir Continuity Logging Using Connectivity Mapping While Drilling," *The Leading Edge* (March 1996), pp. 203-208.

¹³L.R. Lines, "Cross-borehole Seismology, A Tool for Enhanced Reservoir Characterization," *Geotimes* (January 1995), pp. 11-13.

Figure FE4a. A Continuous Low Velocity Zone Detected By Connectivity Mapping

Figure FE4b. A Discontinuous Low Velocity Zone Which Can Indicate An Interrupted Reservoir

Applications

Crosswell seismology has been used to monitor enhanced oil recovery (EOR) operations.¹⁴ Tertiary recovery, or EOR, processes are designed to condition a reservoir (e.g., with heat or special fluids) to enhance the flow of oil out of the pore spaces in reservoir rock. Performing crosswell surveys of a reservoir at different times during steam injection has provided time-lapse imagery of the thermal recovery process.¹⁵ The seismic velocities obtained from these surveys are interpreted in terms of porosity and steam-heat effects. A radial survey (i.e., multiple crosswell surveys having a common midpoint) of the same reservoir showed that a significant amount of energy was "lost" by being diverted away from the reservoir along preferred highly permeable channels.¹⁶

Many of the recent crosswell studies seem to have been done for the purpose of exploring the limits of the crosswell method as much as for obtaining information about any particular reservoir. For example, a set of papers^{17, 18, 19, 20} describes the information obtained from crosswell imaging of a reservoir prior to water and carbon dioxide injection. A significant part of these studies was devoted to the adaptation of reflection techniques and to related problems such as wavefield separation. Resolution of 5-10 feet allowed features to be identified that could not be seen on the surface seismic records. Another recent paper²¹ demonstrated that a reflection analysis has about five times the spatial resolution of a tomographic analysis. Crosswell imaging has also been applied to the problem of weak anisotropy.²² Anisotropy is identified by wave velocities that vary in different directions at a given point (e.g., north-south compared to east-west) and

can indicate the orientation of fractures (and stress) in the earth.

Geologic and Economic Implications

Where the Wildthings Are²³

Prior to 1960, a common technique for finding oil was to drill wildcats, which are exploratory holes drilled at somewhat random locations at least 1 mile from any known oil or gas field. The highest hopes, and lowest odds, would be to discover a very large field, commonly called an elephant. Recent advances in technology, such as 3D seismology, have helped to tame the wildcat; that is, proportionately fewer holes are currently being drilled, but with a much higher success rate and, therefore, at reduced cost.

The imagery of wildthings, cats and elephants, reflects the vivid history of the domestic oil and gas industry, but where are the wild things of today? Certainly, much attention in the oil and gas industry has focused on high-technology tools (e.g., marine data acquisition, 3D surveys, computer workstations) devoted to exploration in frontier areas or the discovery of new fields in challenging environments (e.g., subsalt plays in the Gulf of Mexico). However, the most significant changes to the domestic oil and gas industry may in the future occur "closer to home."

Notwithstanding the dramatic transformation taking place in petroleum exploration, a salient fact remains -- more domestic oil and gas have been recently "discovered" in existing fields (i.e., booked as positive net revisions to proved reserves) over the past couple of decades than have been provided by new discoveries. Certainly most domestic elephants of the lower 48 States, excluding offshore and coastal areas,²⁴ have already been found (see Figure FE5).²⁵ The relative contributions of net revisions to proved reserves (which exclude adjustments and extensions) and of total new discoveries of domestic crude oil during 1977-94 are shown in Figure FE6.²⁶ The implications to be gleaned from this figure are (i) that new techniques which allow greater development of, and optimal production from, existing fields are ever more needed; and (ii) that they will have ever greater impact in the future as the

¹⁴D.S. Lee et al., "Time-Lapse Crosswell Seismic Tomography to Characterize Flow Structure in the Reservoir during the Thermal Stimulation," *Geophysics* (May-June 1995), pp. 660-666.

¹⁵M.E. Mathisen et al., "Time-Lapse Crosswell Seismic Tomogram Interpretation: Implications for Heavy Oil Reservoir Characterization, Thermal Recovery Process Monitoring, and Tomographic Imaging Technology," *Geophysics* (May-June 1995), pp. 631-650.

¹⁶M.E. Mathisen et al., "Crosswell Seismic Radial Survey Tomograms and the 3-D Interpretation of a Heavy Oil Steamflood," *Geophysics* (May-June 1995), pp. 651-659.

¹⁷J.M. Harris et al., "High-Resolution Crosswell Imaging of a West Texas Carbonate Reservoir: Part 1-- Project Summary and Interpretation," *Geophysics* (May-June 1995), pp. 667-681.

¹⁸M. Van Schaack et al., "High-Resolution Crosswell Imaging of a West Texas Carbonate Reservoir: Part 2--Wavefield Modeling and Analysis," *Geophysics* (May-June 1995), pp. 682-691.

¹⁹J.W. Rector III et al., "High-Resolution Crosswell Imaging of a West Texas Carbonate Reservoir: Part 3--Wavefield Separation of Reflections," *Geophysics* (May-June 1995), pp. 692-701.

²⁰S.K. Lazaratos et al., "High-Resolution Crosswell Imaging of a West Texas Carbonate Reservoir: Part 4--Reflection Imaging," *Geophysics* (May-June 1995), pp. 702-711.

²¹C. Zhou, op. cit.

²²P. R. Williamson et al., "Crosshole Imaging in Anisotropic Media," *Leading Edge* (January 1993), pp. 19-23.

²³M. Sendak, *Where the Wild Things Are*, HarpC Childbooks, 1992.

²⁴Specifically excluding the Pacific coast onshore and offshore, the deep Gulf of Mexico, and the Atlantic offshore (for gas).

²⁵Energy Information Administration, *Largest U.S. Oil and Gas Fields*, DOE/EIA-TR-0567 (Washington, DC, August 1993), Figure 1 (revised).

²⁶Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1994 Annual Report*, DOE/EIA-0216(94) (Washington, DC, August 1995), Table D1.

Figure FE5. Time of Discoveries of Largest U.S. Oil Fields

Of the 100 largest U.S. oil field discoveries, the 94 that were discovered in this century are depicted. Most of the large domestic oil fields were discovered in the early part of this century.

Figure FE6. Relative Impact of Net Revisions and New Discoveries on U.S. Proved Crude Oil Reserves

During 1977-1994, net revisions (in aggregate) to proved reserves have been greater than new discoveries.

relative importance of new discoveries to total domestic reserves continues to diminish over the long term. Crosswell seismology may be such a technique -- if it can be made cost-effective.

Opportunities and Costs

Crosswell seismology is now very expensive. Direct costs include the usual expenses of performing seismic fieldwork, such as salaries of field crews and outlays for sophisticated equipment, with the added difficulty of doing it all in boreholes. Drilling deep boreholes solely for seismic data acquisition is prohibitively expensive, so the natural course is to exploit extant wells. Using production wells, however, can incur significant opportunity costs because they have to be temporarily shut-in, resulting in lost production revenue.

The greatest opportunity costs, however, are the potential reserves "lost" from not knowing of their existence or from not knowing how to efficiently extract them. Crosswell seismology could be a means of "recovering" some of these lost opportunities. The Department of Energy²⁷ (DOE) estimates there are over 300 billion barrels of oil, much of it in existing fields that could be accessible with improved technologies. In addition, DOE estimates that 120 trillion cubic feet of natural gas are located in compartments or bypassed zones within existing U.S. fields. Reservoir management may be portrayed as "minding the store," but it is a store with a large, if uncertain, inventory.

Some of the present costs of conducting crosswell surveys will be mitigated by current efforts to design better downhole sources. Significant improvements have been made in the design of seismic sources to withstand harsh conditions and to provide adequate signal strength without damaging the borehole. A strong seismic source is needed in areas of soft sediments, such as the Gulf Coast region. More seismic energy is also needed for crosswell work in offshore areas, where the wells are generally farther apart.

Development of multi-source and multi-receiver downhole arrays is necessary to reduce the time and costs needed to perform crosswell surveys. In particular, there is a compelling need to develop receiver arrays that do not require clamping and, thus, can be placed inside tubing (the alternative of "pulling" tubing is expensive). As costs decline, field applications of crosswell seismology will become more feasible. Conversely, it is a technique waiting in the wings if energy prices rise; a technology that is expensive today can

provide some of the elasticity in the supply of energy as prices increase.

Another approach to cost mitigation is to redefine the crosswell problem. In particular, less ambitious techniques such as connectivity mapping may provide a reduced, but adequate, dataset at much less cost. Connectivity mapping compromises overall geologic structural detail (as produced by seismic tomography and reflection techniques) while focusing solely on continuity, which is a particularly pertinent property for reservoir development and management.

The present overall economic effect of technology in the oil and gas industry is difficult to quantify. Like early 3D seismicology applications, success stories regarding crosswell seismology are mostly anecdotal, and the associated costs are often not reported. Nonetheless, its future economic impact could be profound. If, for example, existing domestic reservoirs could increase crude oil production by 10 percent, the U.S. balance of trade deficit would be reduced by about \$4 billion (based on 1995 data²⁸).

The economic implication of finding more petroleum in existing reservoirs is also interesting in light of how the economics of searching for oil has evolved in space and time. The 1970's was characterized by a domestic search for petroleum almost everywhere (e.g., Alaska, thrust belt) at almost any cost. Some of the cheapest oil was found during the 1980's on the New York Stock Exchange -- Dupont purchased Conoco (1981), USX purchased Marathon (1982), Occidental purchased Cities Services (1982), Chevron purchased Gulf (1984), Texaco purchased Getty (1984).²⁹ If the potential of crosswell seismology is realized, then the next move may be redirected toward finding "new" oil in existing reservoirs.

Redirections

In summary, the development of crosswell seismology has followed a complicated path, not unlike some of its raypaths. It achieved only modest success in its original form as a direct wave, or tomographic, technique. Due to its low resolution, seismic tomography is inherently limited in its applicability as a tool for imaging fine-scale structures in the earth. This resolution problem, among others, has caused interest in crosswell seismology to wane during the last few years, but today the technique is being reconstituted as a combined tomographic and reflection technique, and the hybrid technique offers greatly enhanced resolution. The progression

²⁷G. deHoratiis, Department of Energy, Office of Fossil Energy, personal communication.

²⁸Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(96/06) (Washington, DC, June 1996), Tables 3.2a and 9.1.

²⁹J. Rasmussen, Energy Information Administration, personal communication.

from tomography to reflection techniques is typical of many research and development endeavors: work in one field is redirected and bears fruit in a rather different, often unexpected, way.

General acceptance of crosswell seismology will happen only when the oil and gas industry is convinced that its cost/benefit ratio is favorable. Currently, it is a difficult economic environment for new techniques to come on-line unless immediate cost savings can be realized. As domestic oil and gas have become more difficult to find in the face of constant prices, the stakes have become higher, and the expectations for any new technique have become greater. With significant advances in analysis and instrumentation, crosswell seismology will become more feasible as costs decrease.

The development of crosswell seismology may be following larger, secular trends in the industry. Some of the major oil

and gas companies are supporting university projects while downsizing in-house projects, and this may be part of the larger industry trend of outsourcing. Another secular trend is the increasing interaction among different personnel, such as petroleum engineers and geophysicists, during the exploration/development/production cycle; crosswell seismology naturally brings together earth scientists and engineers across functional boundaries.

The most powerful reason that crosswell seismology may see a comeback has to do with its high resolution -- resolution on the scale of the finest heterogeneity of interest in the reservoir. *No other long-range seismic technique can match the resolution that is possible with crosswell seismology.* For fine-tuning the production from a reservoir -- understanding the natural and induced flow patterns (i.e., fluid dynamics) and complex compartmentalization (i.e., geologic structure) -- crosswell seismology offers a unique capability.

Highlights

This publication presents the most recent data on natural gas prices, supply, and consumption from the Energy Information Administration (Figures HI1-HI4). In most cases, the latest estimates are for December and year-end 1996. Estimated prices extend through September 1996 for the residential, commercial, and industrial sectors, and through August 1996 for the electric utility sector. Of special interest in this issue are a Feature Article, "Crosswell Seismology-View from Aside," and the Special Focus presentation, "Natural Gas 1995: Issues and Trends, Executive Summary." Both of these features precede the "Highlights" section.

A brief analysis of the most recent data is followed by an update on natural gas markets, including the behavior of daily spot and futures prices. This market analysis is based on information from natural gas trade press and weekly regional data on underground storage from the American Gas Association.

Recent Data

Wellhead and End-Use Prices

The average wellhead price of natural gas was estimated to be \$1.99 per thousand cubic feet (Mcf) in September 1996 (Table 4). This average price was 11 percent lower than the estimated price for August and was the second lowest price during 1996. The lowest wellhead price in 1996 was \$1.90 per Mcf in February. Even with these two low prices, wellhead prices continue to be higher than at any time during 1995. The estimated wellhead price for the first three quarters of 1996 is \$2.10 per Mcf, which is 39 percent higher than for the same period a year ago (Figure HI3).

Higher wellhead prices are explained in part by lower storage inventories at the end of the 1995-1996 heating season. Lower levels of storage required higher levels of injections during the nonheating season (April through October). Net injections during the 1996 nonheating season exceeded those of 1995 by 18 percent.

The most recent estimates of natural gas prices to end users¹ are for the month of September 1996 in the residential, commercial, and industrial sectors. Respectively, these prices are \$7.87, \$5.34, and \$2.84 per Mcf. The most recent price estimate for the electric utility sector is \$2.58 per Mcf for the month of August 1996.

The residential and commercial prices are 2 and 7 percent higher than in September 1995, and cumulative average prices for the first three quarters of 1996 are nearly equal to or above those of 1995. The cumulative residential price is \$6.23 per Mcf, 2 cents above the 1995 average, and the commercial price is \$5.27 per Mcf, 3 percent higher than a year ago.

Industrial consumers have paid generally higher prices in 1996 compared to 1995. The September estimate is the first time industrial gas prices have fallen below \$3.00 per Mcf this year. The average industrial price for the first three quarters of 1996 is \$3.26 per Mcf, 25 percent higher than in the same period of 1995.

Electric utility prices also remain higher than in 1995. The August 1996 estimate of \$2.58 Mcf exceeds that of August 1995 by 40 percent. The average price for January through August, \$2.67 per Mcf, is 36 percent higher than for the same period in 1995.

Supply

Preliminary estimates of natural gas production show an increase in the level of marketed production in 1996 compared with 1995. The latest estimates for production are 1,753 billion cubic feet (Bcf) for December and 20.013 Bcf for the year 1996 (Table 1). December production was 2 percent higher than in December 1995. The increase for the year was 3 percent (Figure HI1).

Imported natural gas was estimated to be 291 Bcf in December 1996, bringing total imports for the year to 2,903 Bcf (Table 2). Net imports in December were estimated at 278 Bcf and 2,750 Bcf for 1996. On a daily basis, net imports in December 1996 averaged 9.0 Bcf per day. This is 3 percent higher than in November 1996 and 9 percent higher than in December 1995.

¹End-use prices in the residential, commercial, and industrial sectors are for onsystem gas sales only. While this is nearly 100 percent of residential deliveries, monthly onsystem sales in 1996 have been from 59 to 82 percent of total commercial deliveries, and 15 to 24 percent of industrial deliveries (Table 4).

Figure HI1. Natural Gas Production and Consumption, January-December, 1994-1996

Figure HI2. Natural Gas Delivered to Consumers, January-December, 1994-1996

* Natural gas delivered to residential consumers in 1995 and 1996 was virtually the same.

Figure H13. Average Delivered and Wellhead Natural Gas Prices, January-September, 1994-1996

*Natural gas prices to residential consumers in 1995 and 1996 were virtually the same.

Notes: Commercial and industrial average prices reflect onsystem sales only; Electric utilities average price for 1996 covers August.

Figure H14. Working Gas in Underground Storage in the United States, 1995-1997

Sources: Energy Information Administration(EIA), Form EIA-191, "Underground Natural Gas Storage Report"; American Gas Association, "Report of Estimated U.S. Working Gas Levels in Underground Storage".

Estimates of levels of working gas in natural gas underground storage reservoirs during 1996 continued to be lower than those that operators reported throughout 1995. These lower levels of storage inventories are believed to be major contributors to higher wellhead prices. By the end of December 1996, the second month of the heating season, the level of working gas in storage was estimated at 2,104 Bcf (Figure HI4 and Table 9). This compares with 2,153 Bcf of working gas in storage at the end of 1995. The December 1996 estimate is the lowest level for the end of the year since December 1976. Net withdrawals from storage during December 1996 were estimated to be 435 Bcf, 25 percent lower than in December 1995 when bitter cold in much of the country contributed to higher withdrawals from storage.

End-Use Consumption

Preliminary data show that consumers used 3 percent more natural gas during 1996 in 1995. Consumption patterns differed for the various consuming sectors. Residential and commercial consumption each increased 8 percent during 1996 (Figure HI2). Industrial consumers used 3 percent more natural gas than during the previous year and electric utilities used 9 percent less.

Colder weather in both the early and late months of 1996 created increased demand by residential and commercial consumers. Estimated consumption by residential users was 760 Bcf in December or 25 Bcf per day (Table 3). Commercial consumers used an estimated 425 Bcf in December or 14 Bcf per day. Estimates for the year 1996 show 5,225 Bcf consumed in the residential sector and 3,273 Bcf in the commercial sector, both of which are 8 percent higher than in 1995.

Industrial consumption in December 1996 is estimated to be 795 Bcf or 26 Bcf per day. This leads to a preliminary estimate of 8,836 Bcf for the year 1996, the highest level recorded by the Energy Information Administration for this sector. The previous high had been 8,689 Bcf in 1973. The estimate of 1996 industrial consumption is 3 percent above the level of 1995.

The estimate of electric utility consumption for December 1996 shows a decline from the November level. December consumption of 204 Bcf is equivalent to 6.6 Bcf per day, and is 13 percent below the daily rate in November 1996. Consumption of natural gas by this sector typically declines during the heating season as higher priority customers increase demand for gas to meet their space heating needs.

The December estimate of electric utility consumption is 19 percent higher than that of December 1995 and brings estimated consumption for the year 1996 to 2,903 Bcf. This is 9 percent below the level of 1995. An even greater decline might have been expected considering the significant increases in the price of gas to this sector during the year, and the fact that in 7 months of 1996, electric utility consumption was 10 to 36 percent below that of 1995.

Natural Gas Market Update

This review of the natural gas market covers the period from November 25 through December 20, 1996, which was marked by wide temperature swings. During the week of November 24, the average temperatures in the Midwest and the East were more than 20 percent colder-than-normal at mid-week. Cold weather also occurred in the West where low temperatures and heavy snows were prevalent in areas such as Portland, OR and Seattle, WA. The weather began to moderate during the following week and by December 11th, average temperatures in Midwest and the East were more than 20 percent warmer-than-normal. Temperatures in other parts of the country also rose that week as several cities in the Southwest recorded temperatures near 80 degrees. Then the cold weather returned over the weekend of December 14, arriving first in the West and then moving south and east. The natural gas markets reacted dramatically to these changes in the weather and other events occurring in the marketplace. Prices on both the spot and futures market displayed a high level of volatility as prices moved both up and down 5 to 60 cents between days (Figure HI5). The daily settlement price for the January contract at the Henry Hub had a range of \$1.35 per MMBtu over this period (\$3.222 to \$4.573 per MMBtu). The level of working gas in storage after the first 2 weeks of December was estimated by the American Gas Association (AGA) to be 2,322 Bcf, which is 4 percent less than last year at this time.

Spot Prices

Spot prices began the period on November 25, at about \$3.70 per MMBtu on at the Henry Hub and 3 weeks later on December 13 they were near \$3.65. However, during this time, posted prices reached a high of \$3.94 per MMBtu and a low of \$3.21. In addition to the changes in the weather over this period, prices were reacting to a myriad events occurring in the energy markets. These

included: the withdrawal of more than 100 Bcf of gas from storage during the last week of November, resumption of the sale of Iraqi oil on a limited basis and its impact on the price of West Texas crude oil (it decreased \$2.00 a barrel in 2 days), reports of a supply outage at an offshore Louisiana facility and a pipeline mishap on the Trans-Canada system. These latter events were resolved quickly and withdrawals from storage decreased by 30 percent in the first week of December. With the release of several weather forecasts on Friday, December 13, calling for the arrival of a widespread weather pattern with the lowest temperatures of the heating season, prices moved up sharply and by Tuesday, December 17 spot prices had reached \$4.60 per MMBtu at the Henry Hub. Last year the average spot price in December at this location was \$2.45 per MMBtu. In sharp contrast to previous years, the spot prices at other major market locations continue to match or exceed those at Louisiana Gulf coast sites: e.g. Permian Basin Area - \$4.77 per MMBtu; Katy, East Texas - \$4.70; Waha, West Texas - \$4.88; and Opal, Rocky Mountain - \$4.60. Prices at all these locations were between \$2.20 and \$3.20 per MMBtu less last year in early December.

Futures Prices

The price of the January futures contract also experienced a high degree of volatility over the period covered in this update. On November 25 it settled at \$3.494 per MMBtu. Then in reaction to reduced storage withdrawals, continued forecasts of warmer-than-normal weather and the return of Iraqi oil to the market, it decreased and by December 9 had settled at \$3.222 per MMBtu. This was short-lived, as three days later it settled at \$3.851 per MMBtu (Figure HI5). The futures price for January delivery at Henry Hub reached a high of \$4.560 per MMBtu during the day on Monday December 16 before it settled at \$4.467 for the day. This is more than \$2.00 per MMBtu higher than the record for the January contract (\$3.448 per MMBtu) set last year when persistently cold weather drove prices up. The price for the February and March contracts also settled at record levels on December 18; e.g., \$3.586 per MMBtu and \$3.062, respectively. The January contract was scheduled to close at noon on December 24.

Figure HI5. Futures and Spot Prices at the Henry Hub

Note: The futures price is for the contract that is to terminate trading next on the futures market. The spot price is the midpoint of the high and low daily prices at the Henry Hub.

Sources: **Futures Prices:** Commodity Trading Commission, Division of Economic Analysis. **Spot Prices:** Pasha Publications, Inc., *Gas Daily*.

Figure HI6. Working Gas Storage

Sources: **Weekly Data:** American Gas Association; **Monthly Data:** Form EIA-191.

Table 1. Summary of Natural Gas Production in the United States, 1990-1996
(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
1990 Total	21,523	2,489	289	150	18,594	784	17,810
1991 Total	21,750	2,772	276	170	18,532	835	17,698
1992 Total	22,132	2,973	280	168	18,712	872	17,840
1993 Total	22,726	3,103	414	227	18,982	886	18,095
1994							
January	2,023	277	36	19	1,691	76	1,615
February	1,815	249	32	19	1,515	68	1,447
March	2,029	278	35	19	1,696	76	1,620
April	1,924	259	35	18	1,612	73	1,539
May	1,984	264	33	18	1,669	75	1,593
June	1,881	240	28	21	1,592	72	1,520
July	1,943	241	33	19	1,650	74	1,575
August	1,971	261	35	18	1,657	75	1,582
September	1,878	250	35	20	1,573	71	1,502
October	1,982	292	37	19	1,634	74	1,560
November	2,036	302	36	18	1,680	76	1,604
December	2,116	317	37	19	1,743	79	1,664
Total	23,581	3,231	412	228	19,710	889	18,821
1995							
January	2,043	311	34	21	1,677	78	1,599
February	1,822	276	30	20	1,495	70	1,426
March	2,026	314	32	20	1,660	77	1,582
April	1,945	287	32	21	1,604	75	1,530
May	1,997	291	33	24	1,649	77	1,572
June	1,910	264	31	28	1,587	74	1,513
July	1,960	264	31	26	1,639	76	1,563
August	1,965	284	30	22	1,628	76	1,552
September	1,914	276	33	25	1,581	74	1,507
October	1,988	319	34	25	1,610	75	1,535
November	2,045	331	33	24	1,657	77	1,580
December	2,128	348	35	26	1,719	80	1,639
Total	23,744	3,565	388	284	19,506	908	18,599
1996							
January	^E 2,093	^E 323	^E 32	^E 25	^E 1,713	80	1,633
February	^E 1,967	^E 306	^E 30	^E 24	^E 1,606	75	1,531
March	^E 2,070	^E 324	^E 32	^E 21	^E 1,692	79	1,614
April	^E 2,020	^E 301	^E 33	^E 22	^E 1,664	78	1,586
May	^{RE} 2,011	^E 281	^E 31	^E 23	^{RE} 1,676	78	^R 1,598
June	^E 1,954	^E 287	^E 29	^E 19	^E 1,619	75	1,543
July	^{RE} 2,012	^E 284	^{RE} 32	^E 22	^{RE} 1,674	78	^R 1,596
August	^{RE} 2,024	^{RE} 294	^{RE} 32	^{RE} 22	^{RE} 1,676	^R 78	^R 1,598
September	^{RE} 1,931	^{RE} 279	^E 30	^E 20	^E 1,602	^E 75	^E 1,527
October	^{RE} 1,986	^{RE} 285	^{RE} 31	^{RE} 21	^{RE} 1,648	^{RE} 77	^{RE} 1,571
November	^{RE} 2,038	^{RE} 295	^E 32	^E 22	^{RE} 1,690	^{RE} 78	^{RE} 1,612
December	^E 2,113	^E 305	^E 33	^E 22	^E 1,753	^E 81	^E 1,672
Total	^E 24,220	^E 3,563	^E 380	^E 264	^E 20,013	^E 931	^E 19,082

^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 = Revised Data.

^E = Estimated Data.

^{RE} = Revised Estimated Data.

Notes: Data for 1990 through 1995 are final. All other data are preliminary unless otherwise indicated and contain estimates for selected States (see Table 7). Estimates for the most recent two months are derived from the Short-Term Integrated Forecasting System. 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 1995* Table 7, Short-Term Integrated Forecasting System, and EIA estimates, January 1996 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, 1990-1996
(Billion Cubic Feet)

Year and Month	Supply					Total Supply/Disposition ^d	Disposition		
	Total Dry Gas Production	Withdrawals from Storage ^a	Supplemental Gaseous Fuels ^b	Imports	Balancing Item ^c		Additions to Storage ^a	Exports	Consumption ^e
1990 Total	17,810	1,986	123	1,532	-149	21,302	2,499	86	18,716
1991 Total	17,698	2,752	113	1,773	-500	21,836	2,672	129	19,035
1992 Total	17,840	2,772	118	2,138	-508	22,360	2,599	216	19,544
1993 Total	18,095	2,799	119	2,350	-110	23,254	2,835	140	20,279
1994									
January	1,615	821	13	241	-106	2,583	35	11	2,537
February	1,447	586	10	199	135	2,377	50	13	2,314
March	1,620	245	10	223	73	2,170	106	19	2,046
April	1,539	68	9	212	112	1,940	293	9	1,638
May	1,593	25	8	206	14	1,846	440	8	1,398
June	1,520	37	8	201	20	1,786	392	13	1,382
July	1,575	26	8	221	-20	1,810	422	11	1,377
August	1,582	30	8	219	-38	1,801	383	14	1,404
September	1,502	21	8	210	-21	1,720	356	14	1,350
October	1,560	54	9	222	-137	1,707	230	13	1,465
November	1,604	208	10	226	-214	1,833	105	19	1,709
December	1,664	458	12	245	-219	2,160	54	18	2,088
Total	18,821	2,579	111	2,624	-400	23,734	2,865	162	20,708
1995									
January	1,599	658	12	253	-60	2,461	45	14	2,403
February	1,426	575	10	236	17	2,264	44	13	2,207
March	1,582	332	10	250	42	2,217	104	15	2,098
April	1,530	127	7	232	74	1,970	178	12	1,780
May	1,572	34	8	228	115	1,957	378	12	1,567
June	1,513	40	8	217	52	1,830	419	16	1,395
July	1,563	54	8	223	30	1,878	367	15	1,497
August	1,552	86	8	237	-24	1,860	298	14	1,548
September	1,507	29	7	228	-17	1,755	350	11	1,393
October	1,535	68	9	236	-72	1,776	279	12	1,486
November	1,580	374	10	236	-206	1,994	96	13	1,886
December	1,639	648	12	264	-181	2,382	53	8	2,321
Total	18,599	3,025	110	2,841	-230	24,345	2,610	154	21,581
1996									
January	1,633	746	14	251	-5	2,640	48	14	2,579
February	1,531	542	12	228	133	2,447	95	13	2,339
March	1,614	401	12	224	46	2,297	77	15	2,205
April	1,586	111	11	219	146	2,074	225	10	1,839
May	^R 1,598	43	8	243	^R 64	1,956	371	8	1,577
June	1,543	33	10	224	75	1,885	408	12	1,465
July	^R 1,596	46	10	^E 235	^R 18	1,870	415	^E 14	1,441
August	^R 1,598	50	^R 10	^{RE} 240	^R 0	^R 1,897	396	^E 17	^R 1,485
September	^E 1,527	29	^E 9	^{RE} 236	^R 6	^R 1,808	393	^E 13	^R 1,402
October	^{RE} 1,571	^R 68	^E 10	^{RE} 238	^{RE} 12	^{RE} 1,899	^R 272	^{RE} 11	^{RE} 1,617
November	^{RE} 1,612	^{RE} 400	^E 11	^E 275	^{RE} 292	^{RE} 2,006	^{RE} 100	^E 13	^E 1,893
December	^E 1,672	^E 485	^E 13	^E 291	^E 29	^E 2,432	^E 50	^E 13	^E 2,369
Total	^E 19,082	^E 2,956	^E 130	^E 2,903	^E 141	^E 25,212	^E 2,849	^E 153	^E 22,210

^a Monthly and annual data for 1990 through 1995 include underground storage and liquefied natural gas storage. Data for January 1996 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 9, for full discussion.

^d "Total" data for 1990 through 1995 do not equal equivalent data in Table 1 of the *Natural Gas Annual 1995* 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.

^R = Revised Data.

^E = Estimated Data.

^{RE} = Revised Estimated Data.

Notes: • Data for 1990 through 1995 are final. All other data are preliminary unless otherwise indicated. Estimates for the most recent two months are derived from the Short-Term Integrated Forecasting System. • 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 1995*, 1990 through 1995; IOGCC (1994), Form EIA-895 (1995), MMS reporting, and EIA estimates, January 1996 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 1995*, 1990 through 1995; Form EIA-191, January 1996 through current month. • Supplemental Gaseous Fuels: EIA *Natural Gas Annual 1995*, 1990 through 1995; and EIA computations, January 1996 through current month. See Appendix A, Explanatory Note 2, for discussion of computation procedures and revision policy. • Imports and Exports: Form FPC-14, 1990 through 1995; and EIA estimates, January 1996 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 1995*, 1990 through 1995; and EIA computations, January 1996 through current month. Estimates for the most recent two months computations are derived from the Short-Term Integrated Forecasting System. See Appendix A, Explanatory Notes 5 and 9, for discussion of computation procedures and revision policy.

Figure 1. Production and Consumption of Natural Gas in the United States, 1993-1997

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

Table 3. Natural Gas Consumption in the United States, 1990-1996
(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	
1990 Total	1,236	660	4,391	2,623	7,018	2,787	16,820	18,716
1991 Total	1,129	601	4,556	2,729	7,231	2,789	17,305	19,035
1992 Total	1,171	588	4,690	2,803	7,527	2,766	17,786	19,544
1993 Total	1,172	624	4,956	2,863	7,981	2,682	18,483	20,279
1994								
January	96	85	953	476	757	170	2,355	2,537
February	86	78	842	436	723	149	2,150	2,314
March	97	68	631	349	715	186	1,881	2,046
April	92	54	392	237	659	204	1,492	1,638
May	95	46	247	163	631	216	1,257	1,398
June	90	45	154	132	641	319	1,246	1,382
July	93	45	127	129	621	362	1,239	1,377
August	94	46	122	121	639	382	1,264	1,404
September	90	44	130	117	673	296	1,216	1,350
October	94	48	221	160	679	264	1,323	1,465
November	97	56	391	236	697	231	1,556	1,709
December	100	70	638	340	732	208	1,918	2,088
Total	1,124	685	4,848	2,897	8,167	2,987	18,899	20,708
1995								
January	105	79	816	427	777	199	2,218	2,403
February	94	73	754	411	707	168	2,040	2,207
March	104	69	600	342	738	245	1,926	2,098
April	100	58	419	254	720	229	1,622	1,780
May	103	50	260	184	711	258	1,414	1,567
June	99	45	159	133	683	297	1,252	1,395
July	101	48	131	133	677	407	1,347	1,497
August	101	50	114	130	684	468	1,397	1,548
September	99	45	134	130	670	316	1,250	1,393
October	102	48	216	171	709	240	1,336	1,486
November	105	61	489	297	736	198	1,720	1,886
December	109	76	758	420	786	172	2,136	2,321
Total	1,220	700	4,850	3,034	8,580	3,197	19,660	21,581
1996								
January	107	84	931	497	793	168	2,388	2,579
February	101	76	829	457	741	137	2,163	2,339
March	106	72	705	403	763	156	2,027	2,205
April	104	60	473	297	735	170	1,675	1,839
May	105	51	269	192	692	267	1,421	1,577
June	101	48	162	144	708	302	1,316	1,465
July	105	47	124	130	678	357	1,290	1,441
August	^R 105	48	119	132	714	368	1,332	^R 1,485
September	^R 100	^R 45	^R 139	^R 136	^R 696	^R 285	1,256	^R 1,402
October	^{RE} 103	^{RE} 52	^E 254	^E 183	^E 761	^E 263	^E 1,461	^{RE} 1,617
November	^E 106	^E 62	^E 459	^E 277	^E 761	^E 228	^E 1,725	^E 1,893
December	^E 110	^E 76	^E 760	^E 425	^E 795	^E 204	^E 2,184	^E 2,369
Total	^E 1,253	^E 720	^E 5,225	^E 3,273	^E 8,836	^E 2,903	^E 20,237	^E 22,210

^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.

^E = Estimated Data.

^{RE} = Revised Estimated Data.

Notes: Data for 1990 through 1995 are final. All other data are preliminary unless otherwise indicated. Estimates for the most recent three months are derived from the Short-Term Integrated Forecasting System. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding. Deliveries to commercial consumers for total year 1993, 1994, and 1995 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.

Sources: All data except electric utility: EIA *Natural Gas Annual* 1995, 1990 through 1995, Form EIA-857; and Short-Term Integrated Forecasting System computations January 1996 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, 1992-1996

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

Table 4. Selected National Average Natural Gas Prices, 1990-1996
(Dollars per Thousand Cubic Feet)

Year and Month	Wellhead Price ^a	City Gate	Delivered to Consumers					Electric Utilities
			Residential	Commercial		Industrial		
				Price	% of Total ^b	Price	% of Total ^b	
1990 Annual Average	1.71	3.03	5.80	4.83	86.6	2.93	35.2	2.38
1991 Annual Average	1.64	2.90	5.82	4.81	85.1	2.69	32.7	2.18
1992 Annual Average	1.74	3.01	5.89	4.88	83.2	2.84	30.3	2.36
1993 Annual Average	2.04	3.21	6.16	5.22	83.9	3.07	29.7	2.61
1994								
January	1.93	3.04	5.93	5.50	83.7	3.47	27.9	2.67
February	1.88	3.26	6.04	5.58	83.9	3.43	30.0	2.80
March	1.93	3.33	6.30	5.67	82.8	3.47	28.6	2.67
April	1.91	3.15	6.60	5.60	78.6	3.01	26.7	2.44
May	2.00	3.17	6.84	5.47	74.5	2.92	25.6	2.46
June	1.80	3.17	7.66	5.37	70.5	2.69	23.3	2.25
July	1.81	3.12	8.10	5.25	68.7	2.77	23.9	2.27
August	1.83	3.15	8.22	5.31	72.6	2.67	23.5	2.16
September	1.78	2.92	7.84	5.36	72.2	2.55	22.0	2.00
October	1.70	2.80	6.86	5.11	74.3	2.49	23.7	1.95
November	1.75	2.84	6.27	5.19	77.8	2.86	24.1	2.10
December	1.88	2.86	6.06	5.24	82.1	2.99	25.8	2.17
Annual Average	1.85	3.07	6.41	5.44	79.3	3.05	25.5	2.28
1995								
January	1.62	2.79	5.85	5.23	81.6	2.95	27.3	2.13
February	1.48	2.71	5.76	5.14	81.7	2.85	27.4	2.00
March	1.47	2.74	5.84	5.12	81.2	2.74	26.5	1.92
April	1.52	2.72	6.06	5.08	77.2	2.57	25.4	1.97
May	1.55	2.80	6.54	5.04	71.8	2.54	23.6	2.06
June	1.58	2.89	7.49	5.16	71.4	2.44	24.5	2.06
July	1.43	2.89	7.82	5.03	67.3	2.34	22.2	1.90
August	1.43	2.87	8.13	4.99	66.6	2.26	21.8	1.84
September	1.52	2.89	7.73	4.98	67.9	2.42	22.0	1.95
October	1.54	2.83	6.62	4.82	69.7	2.44	22.5	2.09
November	1.61	2.67	5.61	4.77	75.6	2.68	24.7	2.22
December	1.84	2.83	5.54	5.00	79.2	3.07	25.0	2.58
Annual Average	1.55	2.78	6.06	5.05	76.7	2.71	24.5	2.02
1996								
January	^R 2.07	3.13	5.60	5.25	81.5	3.38	23.6	2.88
February	1.90	3.16	5.78	5.19	82.1	3.54	22.1	3.06
March	^R 2.03	3.17	5.89	5.26	79.8	3.50	21.0	2.70
April	^R 2.13	3.22	6.22	5.24	76.7	3.35	20.1	2.68
May	^R 2.08	3.18	6.80	5.30	71.7	3.07	18.5	2.52
June	^R 2.14	3.33	7.75	5.31	66.3	3.12	16.6	2.59
July	2.35	3.51	8.51	5.38	66.1	3.19	18.2	2.69
August	^R 2.23	3.50	8.56	5.47	58.6	3.06	14.8	2.58
September	^E 1.99	3.07	7.87	5.34	59.3	2.84	14.5	NA
1996 YTD ^c	^E 2.10	3.21	6.23	5.27	75.7	3.26	18.9	2.67
1995 YTD	1.51	2.79	6.21	5.12	76.9	2.60	24.2	1.96
1994 YTD	1.87	3.16	6.45	5.52	79.4	3.05	25.5	2.40

^a See Appendix A, Explanatory Note 8, of the *Natural Gas Monthly* (NGM) for discussion of wellhead prices.

^b Percentage of total deliveries represented by onsystem sales, see Figure 6. See Table 24 for breakdown by State.

^c Year-to-date price represents months for which price information is available in the current year.

^R = Revised Data.

^E = Estimated Data.

NA = Not Available.

Notes: • Data for 1990 through 1995 are final. All other data are preliminary unless otherwise indicated. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • Average wellhead price: EIA *Natural Gas Annual* 1995, 1990 through 1995; and EIA estimates, January 1996 through current month. See Appendix A, Explanatory Note 8 for estimation procedures and revision policy. • Average City Gate, Residential, Commercial and Industrial average prices for 1990 through current month from Form EIA-857. See Appendix A, Explanatory Note 5, for discussion of NGM revision policy. • Electric Utilities averages 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, 1992-1996

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

Figure 4. Average Price of Natural Gas in the United States, 1992-1996

Sources: *Natural Gas Annual* and Form EIA-857.

Table 5. U.S. Natural Gas Imports, by Country, 1990-1996
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Pipeline				LNG		Total	
	Canada		Mexico		Algeria		Volume	Average Price
	Volume	Average Price	Volume	Average Price	Volume	Average Price		
1990 Total	1,448,065	1.91	—	—	84,193	2.47	1,532,259	1.94
1991 Total	1,709,716	1.81	—	—	63,596	2.36	1,773,313	1.83
1992 Total	2,094,387	1.84	—	—	43,116	2.54	2,137,504	1.85
1993 Total	2,266,751	2.02	1,678	1.94	81,685	2.20	2,350,115	2.03
1994								
January	229,206	2.12	1,539	1.79	10,150	2.02	240,895	2.11
February	193,027	2.22	569	2.15	5,065	3.13	198,661	2.24
March	213,096	2.21	2,147	2.19	7,616	2.38	222,858	2.21
April	204,113	1.96	0	—	7,636	1.92	211,749	1.96
May	199,367	1.93	1,663	2.02	5,101	2.40	206,131	1.94
June	194,458	1.76	1,094	1.77	5,029	2.04	200,582	1.77
July	213,486	1.81	0	—	7,680	2.18	221,166	1.82
August	218,879	1.76	0	—	0	—	218,879	1.76
September	207,495	1.64	0	—	2,501	2.94	209,996	1.66
October	221,627	1.54	0	—	0	—	221,627	1.54
November	225,819	1.71	0	—	0	—	225,819	1.71
December	245,477	1.72	0	—	0	—	245,477	1.72
Total	2,566,049	1.86	7,013	1.99	50,778	2.28	2,623,839	1.87
1995								
January	250,666	1.59	158	1.38	2,511	2.40	253,335	1.60
February	233,404	1.45	0	—	2,573	1.81	235,977	1.46
March	247,578	1.39	150	1.50	2,621	2.45	250,349	1.40
April	231,745	1.37	0	—	0	—	231,745	1.37
May	225,682	1.45	0	—	2,576	1.89	228,259	1.46
June	217,456	1.47	0	—	0	—	217,456	1.47
July	222,652	1.40	0	—	0	—	222,652	1.40
August	233,419	1.33	824	1.53	2,648	2.42	236,891	1.34
September	223,836	1.43	3,872	1.53	0	—	227,708	1.43
October	234,284	1.48	1,718	1.56	0	—	236,003	1.48
November	233,857	1.60	0	—	2,487	2.47	236,344	1.61
December	261,828	1.79	0	—	2,502	2.65	264,329	1.80
Total	2,816,408	1.48	6,722	1.53	17,918	2.30	2,841,048	1.49
1996								
January	247,111	2.04	1,498	2.03	2,460	2.81	251,070	2.05
February	225,127	1.96	698	2.14	2,512	2.79	228,338	1.97
March	219,987	1.90	1,259	2.17	2,599	3.06	223,845	1.91
April	212,618	1.80	1,392	2.18	4,559	2.50	218,570	1.81
May	236,444	1.72	4,067	2.15	2,612	2.58	243,123	1.73
June	223,051	1.71	712	2.35	0	—	223,763	1.71
July	231,167	NA	^E 1,500	NA	2,642	NA	^E 235,310	NA
August	^R 236,581	NA	^E 1,000	NA	2,629	NA	^{RE} 240,210	NA
September	^R 232,622	NA	^E 1,000	NA	2,524	NA	^{RE} 236,146	NA
October	^E 231,578	NA	^E 1,000	NA	5,116	NA	^E 237,694	NA
1996 YTD	2,296,287	1.10	14,126	1.47	27,655	1.45	2,338,067	1.11
1995 YTD	2,320,724	1.44	6,722	1.53	12,929	2.20	2,340,375	1.44
1994 YTD	2,094,754	1.89	7,013	1.99	50,778	2.28	2,152,544	1.90

^R = Revised Data.
^E = Estimated Data.
^{RE} = Revised Estimated Data.
NA = Not Available.
— = Not Applicable.

Sources: 1990-1995: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1995 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: 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, 1990-1996
(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		
1990 Total	17,359	2.70	15,659	1.88	52,546	3.59	85,565	3.10
1991 Total	14,791	1.91	60,448	1.76	54,005	3.71	129,244	2.59
1992 Total	67,777	1.83	95,973	1.90	52,532	3.43	216,282	2.25
1993 Total	44,518	2.14	39,676	2.02	55,989	3.34	140,183	2.59
1994								
January	4,084	2.41	1,546	2.22	5,466	3.08	11,097	2.71
February	7,809	2.75	1,459	2.10	3,630	2.99	12,898	2.74
March	12,279	2.73	1,367	2.11	5,510	2.92	19,156	2.74
April	3,872	2.20	1,411	1.91	3,676	2.92	8,959	2.45
May	2,940	2.21	1,829	1.93	3,692	2.95	8,462	2.47
June	5,775	2.22	1,278	1.68	5,543	3.02	12,596	2.52
July	2,823	2.32	2,268	1.82	5,557	3.15	10,647	2.65
August	1,259	2.46	6,981	1.71	5,561	3.29	13,801	2.42
September	1,684	2.40	6,987	1.56	5,565	3.39	14,236	2.37
October	1,591	2.35	5,659	1.37	5,555	3.41	12,805	2.38
November	4,446	2.03	9,398	1.61	5,540	3.37	19,384	2.21
December	3,995	2.09	6,317	1.68	7,386	3.35	17,698	2.47
Total	52,556	2.42	46,500	1.68	62,682	3.18	161,738	2.50
1995								
January	2,518	2.00	5,576	1.54	5,541	3.35	13,635	2.36
February	2,016	2.02	5,542	1.32	5,557	3.38	13,115	2.30
March	2,387	1.92	6,670	1.36	5,573	3.39	14,630	2.22
April	2,457	1.84	5,941	1.49	3,741	3.47	12,138	2.17
May	1,931	2.01	6,848	1.58	3,698	3.54	12,477	2.23
June	2,106	1.91	7,945	1.59	5,556	3.59	15,606	2.34
July	2,446	1.82	6,526	1.39	5,581	3.58	14,552	2.30
August	2,558	1.77	3,431	1.29	7,531	3.47	13,520	2.60
September	3,336	2.03	2,378	1.47	5,656	3.36	11,370	2.58
October	2,929	1.91	5,588	1.63	3,733	3.30	12,250	2.21
November	1,627	2.21	3,535	1.65	7,518	3.29	12,679	2.69
December	1,244	2.43	1,303	1.82	5,599	3.31	8,146	2.94
Total	27,554	1.96	61,283	1.50	65,283	3.41	154,119	2.39
1996								
January	6,856	3.22	1,608	1.98	5,534	3.38	13,998	3.14
February	5,275	2.74	2,000	1.82	5,619	3.29	12,894	2.84
March	6,785	2.80	2,861	1.81	5,642	3.29	15,288	2.79
April	2,430	2.22	1,942	1.69	5,653	3.57	10,025	2.88
May	2,809	2.15	1,900	1.84	3,750	3.61	8,459	2.72
June	3,001	2.25	3,486	2.15	5,651	3.55	12,138	2.82
July	^E 4,000	NA	^E 2,500	NA	7,546	NA	^E 14,046	NA
August	^E 4,500	NA	^E 7,000	NA	5,667	NA	^E 17,167	NA
September	^E 4,000	NA	^E 3,000	NA	5,661	NA	^E 12,661	NA
October	^E 3,000	NA	^E 2,500	NA	5,588	NA	^E 11,088	NA
1996 YTD	42,656	1.73	28,797	0.91	56,311	1.95	127,764	1.64
1995 YTD	24,683	1.92	56,445	1.48	52,166	3.44	133,294	2.33
1994 YTD	44,115	2.50	30,785	1.70	49,757	3.13	124,657	2.55

^E = Estimated Data.

NA = Not Available.

Sources: 1990-1995: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1995 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: data shown with an E are taken from data from the National Energy Board of Canada plus EIA estimates. LNG: industry reports.

Table 7. Marketed Production of Natural Gas, by State, 1990-1996
(Million Cubic Feet)

Year and Month	Alabama ^b	Alaska	California	Colorado	Florida	Kansas
1990 Total	135,276	402,907	362,748	242,997	6,483	573,603
1991 Total	170,847	437,822	378,384	285,961	4,884	628,459
1992 Total	355,099	443,597	365,632	323,041	6,657	658,007
1993 Total	388,024	430,350	315,851	400,985	7,085	686,347
1994						
January	44,067	50,827	27,310	38,036	577	70,766
February	40,980	45,039	24,382	34,940	547	61,683
March	44,744	49,620	26,375	36,897	676	64,086
April	43,693	45,666	25,257	37,572	602	56,981
May	44,215	45,550	25,518	40,769	621	58,238
June	38,749	40,960	24,511	35,514	616	55,058
July	45,135	43,113	24,954	37,317	676	54,985
August	44,742	42,578	24,997	37,806	634	52,903
September	36,261	43,579	24,657	37,957	586	49,373
October	44,570	47,611	26,676	39,150	712	56,433
November	44,164	48,949	26,773	38,570	629	62,760
December	43,953	51,909	28,017	38,681	610	69,466
Total	515,272	555,402	309,427	453,207	7,486	712,730
1995						
January	43,456	43,391	24,674	47,253	559	64,211
February	39,652	38,966	22,028	41,958	570	60,635
March	43,734	43,037	23,829	45,291	598	59,382
April	42,727	39,714	22,819	45,021	578	59,555
May	44,169	39,308	23,055	45,187	604	61,639
June	42,737	35,781	22,145	42,589	535	58,686
July	45,521	36,246	22,545	43,042	537	59,830
August	45,244	35,724	22,584	43,105	502	58,451
September	37,523	36,488	22,276	41,295	508	53,756
October	45,123	39,695	24,100	45,563	475	58,743
November	44,954	39,324	24,188	45,440	497	60,691
December	44,820	41,874	25,312	37,338	502	65,856
Total	519,661	469,550	279,555	523,084	6,463	721,436
1996						
January	32,816	44,811	20,482	44,982	^E 518	^E 62,504
February	30,858	40,581	22,766	^E 40,221	^E 493	^E 62,213
March	33,269	43,896	24,525	46,594	^E 460	^E 62,554
April	31,604	39,838	23,836	41,542	^E 456	^E 60,401
May	32,749	36,479	23,932	^R 45,656	^E 483	^E 61,727
June	31,136	37,470	23,137	^R 40,421	^E 503	^E 55,896
July	^R 30,947	37,404	24,356	^{RE} 40,412	500	^E 56,667
August	31,392	37,379	24,405	^E 41,295	^E 540	^E 54,730
1996 YTD	254,770	317,859	187,439	^E 341,122	^E 3,952	^E 476,692
1995 YTD	347,241	312,168	183,677	353,447	4,481	482,390
1994 YTD	346,323	363,353	203,304	298,850	4,948	474,699

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas, by State, 1990-1996
(Million Cubic Feet) — Continued

Year and Month	Louisiana ^a	Michigan	Mississippi	Montana	New Mexico	North Dakota
1990 Total	5,241,989	172,151	94,616	50,429	965,104	52,169
1991 Total	5,034,361	195,749	108,031	51,999	1,038,284	53,479
1992 Total	4,914,300	194,815	91,697	53,867	1,268,863	54,883
1993 Total	4,991,138	204,635	80,695	54,528	1,409,429	59,851
1994						
January	436,652	27,679	5,804	4,928	129,078	5,050
February	397,987	3,071	5,339	4,469	120,161	4,584
March	431,867	35,710	5,877	4,562	131,176	5,040
April	419,226	7,755	5,340	4,384	126,005	5,026
May	433,421	25,719	5,339	4,078	131,960	5,139
June	416,200	18,410	5,152	3,347	125,074	4,862
July	429,523	20,693	5,059	3,392	126,762	4,845
August	431,139	18,210	5,430	3,753	132,241	4,790
September	406,044	20,327	5,855	3,924	128,437	4,520
October	424,145	15,412	4,812	4,451	133,438	4,837
November	457,484	18,566	4,621	4,476	134,477	4,615
December	486,016	11,105	4,820	4,652	138,880	4,497
Total	5,169,705	222,657	63,448	50,416	1,557,689	57,805
1995						
January	437,237	22,536	7,664	4,919	134,508	4,284
February	386,483	7,882	6,874	4,278	125,334	3,933
March	417,303	31,418	7,651	4,716	136,983	4,410
April	411,156	17,507	7,408	4,381	131,657	4,111
May	432,964	19,427	8,138	4,153	137,827	4,313
June	412,412	25,052	7,836	3,420	130,688	4,186
July	432,943	29,349	7,959	3,493	132,372	3,615
August	420,784	19,129	8,685	3,570	138,073	4,128
September	422,232	21,698	8,783	3,734	134,030	4,129
October	401,813	19,548	8,429	4,345	139,330	4,239
November	452,671	15,086	7,874	4,566	140,166	4,019
December	480,368	15,569	8,233	4,690	144,869	4,101
Total	5,108,366	238,203	95,533	50,264	1,625,837	49,468
1996						
January	^E 466,361	22,482	8,089	4,503	^E 143,656	4,109
February	^E 438,570	19,173	7,386	4,266	^E 133,884	3,753
March	^E 453,113	11,499	8,385	4,443	^E 146,303	4,048
April	^E 443,001	32,907	8,225	4,098	^E 140,455	3,924
May	^E 460,755	18,490	9,026	4,244	^E 147,208	4,106
June	^E 437,816	24,185	8,983	3,496	^E 139,614	3,847
July	460,981	27,825	9,335	3,487	^E 132,637	3,894
August	^E 459,033	23,866	9,193	^E 3,464	137,009	4,066
1996 YTD	^E 3,619,630	180,427	68,622	^E 32,000	^E 1,120,766	31,746
1995 YTD	3,351,282	166,301	62,215	32,929	1,067,443	32,980
1994 YTD	3,396,015	157,247	43,340	32,913	1,022,457	39,336

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas, by State, 1990-1996

(Million Cubic Feet) — Continued

Year and Month	Oklahoma	Texas ^c	Utah	Wyoming	Other ^a States	U.S. Total
1990 Total	2,258,471	6,343,146	145,875	735,728	810,100	18,593,792
1991 Total	2,153,852	6,280,654	144,817	776,528	788,328	18,532,439
1992 Total	2,017,356	6,145,862	171,293	842,576	804,264	18,711,808
1993 Total	2,049,942	6,249,624	225,401	634,957	793,072	18,981,915
1994						
January	171,629	528,320	21,029	60,965	68,053	1,690,770
February	153,271	483,082	21,411	51,424	62,700	1,515,069
March	165,150	545,090	23,603	59,852	65,860	1,696,185
April	158,384	527,495	23,079	62,747	62,775	1,611,987
May	159,521	541,020	23,787	60,321	63,310	1,668,527
June	153,088	526,703	22,146	57,577	64,221	1,592,186
July	155,458	552,900	22,953	58,805	62,977	1,649,547
August	155,505	552,428	23,515	61,520	64,475	1,656,664
September	153,321	516,610	21,778	57,555	62,034	1,572,818
October	167,006	520,821	23,073	54,632	65,900	1,633,678
November	167,314	524,747	22,151	54,457	64,823	1,679,577
December	175,216	534,628	22,333	56,164	71,568	1,742,516
Total	1,934,864	6,353,844	270,858	696,018	778,697	19,709,525
1995						
January	160,707	528,857	22,354	62,919	67,114	1,676,643
February	143,517	479,553	21,686	50,369	61,666	1,495,384
March	154,640	538,515	25,813	57,602	64,772	1,659,694
April	148,305	523,631	24,529	59,544	61,518	1,604,162
May	149,369	539,311	22,498	54,039	62,686	1,648,688
June	143,346	526,759	15,626	51,792	63,404	1,586,994
July	145,565	548,617	17,120	55,403	61,316	1,639,474
August	145,609	545,415	17,676	57,125	62,409	1,628,213
September	143,565	520,687	18,447	51,741	59,968	1,580,857
October	156,378	524,049	16,987	57,494	63,946	1,610,256
November	156,667	522,744	18,062	56,956	63,084	1,656,989
December	164,066	531,909	20,493	58,792	70,326	1,719,118
Total	1,811,734	6,330,048	241,290	673,775	762,209	19,506,474
1996						
January	^E 160,437	543,853	19,998	^E 67,009	^E 66,703	^E 1,713,312
February	^E 147,253	514,791	18,027	^E 60,674	^E 61,285	^E 1,606,195
March	^E 154,752	546,612	21,650	^E 66,130	^E 64,236	^E 1,692,468
April	^E 148,412	532,218	^E 20,864	^E 71,119	^E 61,028	^E 1,663,928
May	^E 149,174	537,408	21,047	^E 61,399	^E 61,940	^{RE} 1,675,823
June	^E 144,004	529,989	20,760	^E 54,503	^E 63,073	^{RE} 1,618,831
July	^E 145,901	546,323	20,566	^E 65,727	^E 67,230	^{RE} 1,674,191
August	146,102	^E 549,279	^E 20,639	^E 64,514	^E 68,799	1,675,705
1996 YTD	^E1,196,035	^E4,300,473	^E163,552	^E511,075	^E514,294	^E13,320,454
1995 YTD	1,191,059	4,230,659	167,302	448,793	504,886	12,939,253
1994 YTD	1,272,006	4,257,038	181,523	473,211	514,373	13,080,935

^a Includes Arizona, Arkansas, Illinois, Indiana, Kentucky, Maryland, Missouri, Nebraska, Nevada, New York, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Virginia and West Virginia. The 1996 monthly values for these States are estimated.

^b The 1992, 1993, 1994, and 1995 monthly and annual values for Alabama include Federal Offshore production.

^c Monthly Federal offshore production volumes are included.

^R = Revised Data.

^E = Estimated Data.

^{RE} = Revised Estimated Data.

Notes: Data for 1990 through 1995 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 1995 1990 through 1995. *Form EIA-895, MMS reports, and EIA computations, January 1996 through current month.

**Table 8. Gross Withdrawals and Marketed Production of Natural Gas by State,
August 1996**
(Million Cubic Feet)

Year and State	Gross Withdrawals			Repressuring	Nonhydro- carbon Gases Removed ^a	Vented and Flared	Marketed Production
	From Gas Wells	From Oil Wells	Total				
Alabama	34,695	914	35,609	1,876	2,243	99	31,392
Alaska	13,585	253,799	267,383	229,459	0	546	37,379
California	7,214	26,436	33,650	9,108	92	45	24,405
Colorado	^E 34,841	^E 7,393	^E 42,233	^E 844	0	^E 95	^E 41,295
Florida	0	605	605	0	^E 65	0	^E 540
Kansas	^E 48,293	^E 6,585	^E 54,879	^E 93	0	^E 55	^E 54,730
Louisiana	^E 403,946	^E 60,725	^E 464,671	^E 3,644	0	^E 1,993	^E 459,033
Michigan	19,470	4,868	24,338	195	0	277	23,866
Mississippi	10,376	461	10,837	685	725	235	9,193
Montana	^E 3,011	^E 490	^E 3,502	^E 6	0	^E 32	^E 3,464
New Mexico	^E 118,192	^E 20,034	^E 138,226	^E 798	^E 276	^E 142	137,009
North Dakota	1,347	3,306	4,652	233	11	342	4,066
Oklahoma	^E 122,844	^E 23,258	^E 146,102	0	0	0	146,102
Texas	^E 486,975	^E 117,939	^E 604,914	^E 39,175	^E 13,913	^E 2,547	^E 549,279
Utah	^E 18,722	^E 4,062	^E 22,784	^E 178	0	^E 1,968	^E 20,639
Wyoming	99,643	0	99,643	^E 7,414	^E 14,737	^E 12,978	^E 64,514
Other States	^E 66,299	^E 3,776	^E 70,074	^E 639	^E 38	^E 598	^E 68,799
Total	^E1,489,452	^E534,649	^E2,024,102	^E294,345	^E32,101	^E21,951	^E1,675,705

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

^E = Estimated Data.

Notes: All monthly data are considered preliminary until publication of the Natural Gas Annual for that year. 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.

Source: Form EIA-895.

Table 9. Underground Natural Gas Storage - All Operators, 1990-1996

(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
1990 Total^a	3,868	3,068	6,936	555	22.1	2,433	1,934	499
1991 Total^a	3,954	2,824	6,778	-244	-8.0	2,608	2,689	-80
1992 Total^a	4,044	2,597	6,641	-227	-8.0	2,555	2,724	-168
1993 Total^a	4,327	2,322	6,649	-275	-10.6	2,760	2,717	43
1994								
January	4,348	1,579	5,927	-247	-13.5	35	792	-758
February	4,337	1,091	5,428	-212	-16.3	50	567	-517
March	4,343	958	5,301	-71	-6.9	106	240	-135
April	4,345	1,172	5,517	51	4.6	286	68	218
May	4,352	1,554	5,906	33	2.2	427	25	403
June	4,352	1,896	6,248	2	0.1	381	37	344
July	4,355	2,273	6,629	33	1.5	410	26	384
August	4,355	2,607	6,961	52	2.1	373	30	343
September	4,353	2,912	7,266	28	1.0	345	21	324
October	4,354	3,075	7,429	97	3.3	224	54	170
November	4,353	2,978	7,331	215	7.8	105	204	-99
December	4,360	2,606	6,966	284	12.2	54	443	-389
Total	—	—	—	—	—	2,796	2,508	288
1995								
January	4,365	2,045	6,410	466	29.5	45	644	-599
February	4,368	1,542	5,910	451	41.4	44	564	-519
March	4,362	1,332	5,694	374	39.0	104	327	-223
April	4,360	1,379	5,740	207	17.7	177	127	49
May	4,393	1,668	6,061	114	7.3	369	34	335
June	4,406	2,014	6,420	118	6.2	410	40	371
July	4,340	2,301	6,641	28	1.2	359	54	306
August	4,339	2,495	6,834	-112	-4.3	293	86	207
September	4,341	2,802	7,143	-110	-3.8	343	29	313
October	4,338	2,996	7,334	-79	-2.6	274	68	205
November	4,342	2,728	7,070	-249	-8.4	96	367	-272
December	4,349	2,153	6,503	-453	-17.4	53	635	-582
Total	—	—	—	—	—	2,566	2,974	-408
1996								
January	4,348	1,461	5,809	-584	-28.6	48	746	-699
February	4,342	1,019	5,361	-522	-33.9	95	542	-447
March	4,284	755	5,039	-577	-43.3	77	401	-324
April	4,306	851	5,156	-529	-38.3	225	111	114
May	4,325	1,158	5,483	-511	-30.6	371	43	328
June	4,334	1,525	5,860	-489	-24.3	408	33	375
July	4,329	1,893	6,223	-408	-17.7	415	46	369
August	4,326	2,240	6,565	-255	-10.2	396	50	345
September	4,331	2,597	6,928	-205	-7.3	393	29	364
October	^{RE} 4,329	2,800	^{RE} 7,128	-196	-6.6	^{RE} 272	^{RE} 68	^{RE} 204
November	^{RE} 4,329	^{RE} 2,507	^{RE} 6,836	^{RE} 222	^{RE} 8.1	^{RE} 100	^{RE} 400	^{RE} 300
December	^E 4,329	^E 2,069	^E 6,398	^E 84	^E 3.9	^E 50	^E 485	^E 435
Total	—	—	—	—	—	^E 2,849	^E 2,921	^E 72

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1990 - 8,125; 1991 - 7,993; 1992 - 7,932; 1993 - 7,989; 1994 - 8,043; and 1995 - 7,927.

^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.

^E = Estimated Data.

^{RE} = Revised Estimated Data.

— = Not Applicable.

— = Not Applicable.

Notes: Data for 1990 through 1995 are final. All other data are preliminary unless otherwise noted. Estimates for the most recent two months are derived from the Short-Term Integrated Forecasting System. See Explanatory Note 7 of the *Natural Gas Monthly* 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. In January 1995, 2 billion cubic feet was added to base gas for two new respondents.

Sources: Form EIA-191, Form FERC-8, and Form EIA-176, and Short-Term Integrated Forecasting System.

Figure 5. Underground Natural Gas Storage in the United States, 1992-1996

Sources: Form EIA-191 and Form EIA-176

Table 10. Underground Natural Gas Storage - Interstate Operators of Storage Fields, 1990-1996

(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
1990 Total^a	2,496	2,203	4,699	439	24.9	1,705	1,284	421
1991 Total^a	2,571	1,985	4,556	-218	-9.9	1,904	2,015	-111
1992 Total^a	2,652	1,819	4,471	-166	-8.4	1,838	1,940	-102
1993 Total^a	2,939	1,531	4,470	-288	-15.8	1,911	1,894	17
1994								
January	2,948	1,006	3,954	-216	-17.7	19	545	-526
February	2,943	680	3,623	-153	-18.4	34	376	-343
March	2,951	576	3,526	-43	-6.9	69	173	-104
April	2,950	748	3,697	68	10.1	209	39	170
May	2,956	1,024	3,980	52	5.4	304	15	290
June	2,956	1,270	4,225	20	1.6	265	14	251
July	2,958	1,540	4,498	38	2.5	293	15	278
August	2,957	1,790	4,746	53	3.1	269	17	253
September	2,959	1,992	4,951	-5	-0.2	222	12	210
October	2,955	2,094	5,048	60	3.0	136	37	99
November	2,953	2,011	4,964	161	8.7	60	151	-90
December	2,960	1,743	4,703	212	13.8	34	308	-274
Total	—	—	—	—	—	1,913	1,701	213
1995								
January	2,957	1,336	4,293	330	32.8	27	449	-422
February	2,958	956	3,914	276	40.6	20	404	-384
March	2,955	804	3,759	228	39.6	66	225	-159
April	2,954	845	3,799	97	13.0	122	78	43
May	2,956	1,067	4,024	43	4.2	250	17	233
June	2,962	1,324	4,287	55	4.3	292	23	268
July	2,896	1,543	4,438	3	0.2	257	28	229
August	2,893	1,700	4,593	-90	-5.0	208	45	163
September	2,894	1,906	4,800	-86	-4.3	225	16	209
October	2,891	2,016	4,907	-78	-3.7	162	48	114
November	2,895	1,785	4,680	-226	-11.3	38	272	-234
December	2,899	1,372	4,271	-371	-21.3	25	442	-417
Total	—	—	—	—	—	1,692	2,048	-356
1996								
January	2,897	913	3,810	-423	-31.7	23	483	-460
February	2,894	617	3,511	-339	-35.5	60	359	-299
March	2,855	432	3,287	-371	-46.2	44	269	-225
April	2,868	500	3,368	-345	-40.8	152	73	79
May	2,885	706	3,590	-362	-33.9	250	27	223
June	2,893	971	3,864	-354	-26.7	286	16	270
July	2,892	1,273	4,164	-270	-17.5	313	17	296
August	2,889	1,551	4,440	-149	-8.8	291	14	277
September	2,893	1,803	4,696	-103	-5.4	269	12	257
October	2,893	1,927	4,820	-89	-4.4	170	46	124

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1990 - 5,622; 1991 - 5,512; 1992 - 5,524; 1993 - 5,367; 1994 - 5,351; and 1995 - 5,314.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections. — = Not Applicable.

Notes: Data for 1990 through 1995 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 of the *Natural Gas Monthly* 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.

Table 11. Underground Natural Gas Storage - Intrastate Operators and Independent Producers, 1990-1996
(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
1990 Total^a	1,372	864	2,236	115	15.4	728	650	78
1991 Total^a	1,383	839	2,221	-25	-2.9	705	674	31
1992 Total^a	1,392	778	2,170	-61	-7.3	717	784	-67
1993 Total^a	1,388	791	2,179	13	1.7	826	802	24
1994								
January	1,400	573	1,973	-30	-5.0	16	247	-232
February	1,394	411	1,804	-59	-12.5	16	191	-175
March	1,392	382	1,775	-28	-6.8	37	67	-30
April	1,395	424	1,819	-17	-3.8	77	29	47
May	1,396	530	1,926	-18	-3.4	123	10	113
June	1,396	627	2,023	-18	-2.8	116	23	93
July	1,397	734	2,131	-4	-0.6	118	11	107
August	1,398	817	2,215	-1	-0.1	103	13	90
September	1,395	920	2,315	34	3.8	124	9	114
October	1,400	981	2,381	37	4.0	88	17	71
November	1,400	966	2,367	55	6.1	45	54	-9
December	1,400	864	2,263	73	9.2	20	136	-115
Total	—	—	—	—	—	882	807	75
1995								
January	1,409	709	2,118	136	23.7	17	195	-177
February	1,410	586	1,995	175	42.6	24	160	-136
March	1,407	528	1,935	146	38.2	38	102	-64
April	1,406	535	1,941	111	26.1	55	49	6
May	1,437	601	2,037	70	13.3	120	17	103
June	1,443	690	2,133	63	10.0	119	16	102
July	1,444	759	2,203	25	3.4	102	25	77
August	1,446	795	2,241	-22	-2.7	85	41	44
September	1,447	896	2,343	-24	-2.6	118	14	104
October	1,446	980	2,427	-1	-0.1	112	20	91
November	1,447	944	2,390	-23	-2.4	57	95	-38
December	1,450	782	2,232	-82	-9.5	28	192	-165
Total	—	—	—	—	—	874	926	-52
1996								
January	1,451	548	1,999	-161	-22.7	24	263	-239
February	1,448	403	1,851	-183	-31.2	34	183	-148
March	1,429	323	1,752	-205	-38.8	33	133	-99
April	1,438	351	1,788	-184	-34.4	73	39	34
May	1,440	452	1,892	-149	-24.8	121	17	104
June	1,441	555	1,996	-135	-19.6	122	17	105
July	1,438	621	2,058	-138	-18.2	102	29	73
August	1,437	689	2,126	-106	-13.3	104	36	69
September	1,438	794	2,232	-102	-11.4	124	17	107
October	1,436	873	2,308	-108	-11.0	102	22	80

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1990 - 2,503; 1991 - 2,481; 1992 - 2,407; 1993 - 2,621; 1994 - 2,692.; and 1995 - 2,613.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections. — = Not Applicable.

Notes: Data for 1990 through 1995 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 of the *Natural Gas Monthly* 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.

Table 12. Net Withdrawals from Underground Storage, by State, 1994-1996
(Volumes in Million Cubic Feet)

State	1996						
	October	September	August	July	June	May	April
Alabama	-117	-440	-395	-205	-670	-367	-153
Arkansas	-603	-1,153	-615	-744	-1,166	-1,302	-44
California	-6,542	-6,976	15,137	6,837	-9,894	-23,726	-12,087
Colorado	-36	-3,793	-3,703	-5,336	-5,026	-2,247	1,308
Illinois	-28,518	-36,920	-35,442	-35,741	-32,391	-27,002	-3,163
Indiana	-2,706	-3,932	-6,158	-4,335	-2,421	-161	990
Iowa	-10,667	-12,673	-13,268	-12,464	-7,692	-1,625	2,012
Kansas	-5,835	-8,542	-8,116	-7,168	-12,110	-7,724	-5,531
Kentucky	-2,825	-8,596	-10,080	-13,360	-14,232	-6,228	395
Louisiana	-13,921	-32,347	-32,118	-28,952	-15,803	-12,312	-1,310
Maryland	-1,580	-1,699	-1,869	-1,912	-2,655	-2,189	71
Michigan	-50,388	-79,575	-82,659	-80,378	-79,051	-58,348	-14,604
Minnesota	-33	-202	-210	-287	-294	-366	-88
Mississippi	-3,365	-7,335	-7,882	-8,093	-6,681	-2,478	-4,093
Missouri	-210	-204	-206	-240	-261	-1,319	293
Montana	336	-3,519	-3,502	-3,261	-3,578	780	645
Nebraska	572	-744	-1,277	-1,132	-1,826	-1,535	-287
New Mexico	488	-1,850	366	812	49	32	496
New York	-2,599	-7,346	-12,590	-12,965	-12,170	-13,343	-2,714
Ohio	-13,626	-23,686	-29,401	-35,840	-36,903	-29,890	-8,654
Oklahoma	-11,668	-18,436	-14,723	-7,777	-11,641	-18,357	-4,610
Oregon	207	-104	-437	-1,133	-1,173	-723	132
Pennsylvania	-15,457	-37,736	-52,148	-69,635	-62,217	-46,405	-22,349
Texas	-22,471	-34,375	-17,650	-2,753	-14,053	-28,106	-22,815
Utah	1,416	-2,204	-3,884	-6,821	-6,742	-5,533	-188
Washington	1,642	-599	-1,966	-936	-3,317	-1,974	-359
West Virginia	-15,212	-28,076	-19,867	-32,607	-29,512	-32,729	-16,154
Wyoming	-272	-613	-771	-2,160	-1,760	-2,704	-644
Total	-203,992	-363,677	-345,434	-368,585	-375,191	-327,881	-113,507

See footnotes at end of table.

Table 12. Net Withdrawals from Underground Storage, by State, 1994-1996
(Volumes in Million Cubic Feet) — Continued

State	1996			1995			
	March	February	January	Total	December	November	October
Alabama	162	17	54	73	400	189	73
Arkansas	1,259	1,115	2,112	709	2,149	618	80
California	1,292	25,281	47,300	-27,358	25,933	-1,980	-18,197
Colorado	5,105	1,486	8,699	-3,152	5,194	-1,616	-1,296
Illinois	23,029	41,246	68,239	22,981	51,971	18,278	-38,814
Indiana	3,541	3,831	7,170	711	4,401	-844	-4,448
Iowa	6,372	8,820	16,663	6,443	17,220	12,827	-7,844
Kansas	10,743	7,491	28,184	4,875	16,419	7,352	-10,864
Kentucky	7,956	12,252	14,488	7,178	11,394	9,279	-2,526
Louisiana	24,547	23,515	41,445	52,753	46,245	24,216	-14,079
Maryland	1,500	2,677	3,787	4,049	3,350	689	-1,123
Michigan	51,244	82,900	131,134	117,409	115,938	66,298	-32,377
Minnesota	222	260	781	104	245	2	-6
Mississippi	6,048	3,026	7,739	7,783	6,445	9,486	-2,596
Missouri	379	-100	1,423	-197	330	-165	-124
Montana	3,877	3,437	6,207	3,599	5,251	3,048	554
Nebraska	763	718	1,845	5,844	1,597	1,602	745
New Mexico	2,160	1,575	1,312	2,273	1,527	1,120	-20
New York	9,001	12,727	14,199	14,746	17,605	9,671	-1,689
Ohio	29,036	33,716	43,949	38,862	43,090	24,176	-8,835
Oklahoma	16,897	23,857	33,424	19,264	24,431	8,327	-13,868
Oregon	651	940	1,252	-880	822	58	0
Pennsylvania	43,702	64,404	80,378	63,786	78,025	45,269	-22,123
Texas	43,560	49,234	74,801	26,165	49,476	11,542	-9,871
Utah	2,388	8,372	12,335	-118	9,829	-1,367	-528
Washington	536	762	6,031	-2,363	1,015	-67	100
West Virginia	27,054	30,565	40,250	41,129	39,382	23,047	-14,545
Wyoming	1,095	3,044	3,410	1,552	2,100	768	-1,125
Total	324,117	447,168	698,611	408,220	581,782	271,826	-205,344

See footnotes at end of table.

Table 12. Net Withdrawals from Underground Storage, by State, 1994-1996
(Volumes in Million Cubic Feet) — Continued

State	1995						
	September	August	July	June	May	April	March
Alabama	-592	-218	-35	-42	-27	0	264
Arkansas	-157	-1,390	-1,494	-1,312	-211	130	539
California	-15,258	1,565	-13,534	-26,115	-26,521	2,818	8,053
Colorado	-2,943	-4,401	-6,280	-6,269	-2,314	4,568	4,798
Illinois	-39,267	-39,596	-37,156	-35,273	-34,672	5,540	28,695
Indiana	-4,766	-3,727	-2,861	-1,793	-310	682	2,374
Iowa	-13,599	-17,800	-12,204	-9,889	-5,203	643	5,332
Kansas	-16,412	-166	-4,798	-12,637	-9,576	-1,386	10,522
Kentucky	-6,766	-3,846	-6,815	-7,626	-12,777	-3,476	4,501
Louisiana	-23,381	-1,207	-20,851	-27,559	-18,801	-9,723	8,326
Maryland	-2,041	-1,114	332	-2,042	-2,010	415	279
Michigan	-52,235	-54,249	-74,318	-65,350	-53,113	718	50,375
Minnesota	-241	-234	-306	-262	-331	44	246
Mississippi	-6,289	-740	-4,190	-1,631	-7,164	-4,722	4,069
Missouri	-463	-349	11	9	-621	271	42
Montana	-1,096	-3,206	-2,917	-2,140	-1,280	-798	689
Nebraska	-385	-177	-278	-866	-643	200	933
New Mexico	-505	1,063	-41	-1,130	-1,245	-233	-451
New York	-8,910	-8,274	-7,285	-11,189	-8,564	-600	5,507
Ohio	-18,579	-23,432	-30,964	-31,750	-28,031	5,084	19,862
Oklahoma	-7,816	2,877	-7,322	-14,113	-17,831	-4,739	10,026
Oregon	-486	0	-695	-1,034	-1,179	-867	440
Pennsylvania	-44,608	-41,423	-35,648	-54,283	-43,325	-12,857	29,726
Texas	-22,880	6,956	-3,685	-22,690	-28,366	-24,870	10,188
Utah	-1,489	-3,512	-7,217	-6,043	-3,519	-1,003	3,419
Washington	-2,494	271	-1,413	-1,551	-2,570	-233	253
West Virginia	-17,855	-8,978	-22,284	-24,564	-24,639	-5,825	12,156
Wyoming	-1,841	-1,566	-1,580	-1,447	-416	817	1,449
Total	-313,356	-206,873	-305,827	-370,592	-335,260	-49,401	222,612

See footnotes at end of table.

Table 12. Net Withdrawals from Underground Storage, by State, 1994-1996
(Volumes in Million Cubic Feet) — Continued

State	1995		1994				
	February	January	Total	December	November	October	September
Alabama	2	60	-639	-4	-20	-54	-85
Arkansas	753	1,005	2,482	597	359	64	-210
California	4,882	30,994	-5,066	25,734	16,783	-12,273	-25,551
Colorado	3,358	4,048	-1,100	2,926	1,390	-288	-4,976
Illinois	68,672	74,603	-12,907	33,868	12,634	-27,773	-40,132
Indiana	6,305	5,699	-3,576	3,083	-648	-2,947	-4,141
Iowa	12,947	24,012	-2,764	20,371	6,758	-10,323	-13,446
Kansas	11,757	14,666	-6,218	10,129	6,723	-4,370	-9,624
Kentucky	12,572	13,264	-4,845	8,399	-324	-3,346	-3,590
Louisiana	38,571	50,996	-39,794	36,322	4,098	-8,896	-22,378
Maryland	4,767	2,547	2,090	1,597	1,016	-1,781	-1,536
Michigan	111,082	104,640	-80,996	63,147	19,650	-30,353	-64,754
Minnesota	456	491	-365	68	3	2	-150
Mississippi	6,293	8,821	-14,446	5,228	-888	-3,645	-2,139
Missouri	279	584	85	-6	-230	-207	-269
Montana	1,994	3,499	7,819	2,673	1,705	-1,033	-1,772
Nebraska	998	2,118	-2,471	2,003	-182	-930	-2,125
New Mexico	17	2,171	-1,379	529	548	-2,020	-4,075
New York	14,339	14,134	-1,824	8,913	2,674	-1,373	-5,006
Ohio	37,831	50,411	-28,576	28,025	3,858	-10,528	-21,945
Oklahoma	13,983	25,310	-18,838	17,759	3,825	-4,797	-9,237
Oregon	385	1,677	-720	638	437	-255	-688
Pennsylvania	96,191	68,842	823	44,846	19,352	-14,950	-23,836
Texas	22,672	37,692	-36,228	38,575	-11,223	-17,141	-30,517
Utah	3,395	7,917	-19,587	5,275	2,363	-3,871	-8,505
Washington	2,230	2,097	-1,572	1,576	391	-216	-1,131
West Virginia	41,395	43,839	-14,932	24,797	7,389	-5,989	-20,918
Wyoming	1,374	3,017	-2,584	2,007	659	-963	-1,434
Total	519,500	599,153	-288,127	389,075	99,102	-170,256	-324,170

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 1995 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 13. Activities of Underground Natural Gas Storage Operators, by State,
October 1996**
(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
Alabama	3,600	1,190	2,008	3,198	933	86.8	166	49
Arkansas	31,671	12,489	5,683	18,172	-1,140	-16.7	690	87
California	515,206	247,419	152,316	399,734	-60,551	-28.4	10,712	4,170
Colorado	99,600	47,902	33,375	81,277	-332	-1.0	2,682	2,645
Illinois	903,766	651,468	254,181	905,649	7,742	3.1	31,098	2,579
Indiana	113,001	74,779	36,173	110,952	-9	0.0	3,121	415
Iowa	270,200	200,700	61,354	262,054	-1,206	-1.9	10,668	1
Kansas	283,378	182,482	83,844	266,326	-10,036	-10.7	10,382	4,546
Kentucky	216,351	107,109	96,875	203,984	-3,574	-3.6	4,915	2,090
Louisiana	550,470	267,530	187,939	455,469	-25,478	-11.9	23,701	9,780
Maryland	62,000	46,677	14,990	61,668	394	2.7	1,643	62
Michigan	1,057,780	420,575	572,385	992,960	-5,200	-0.9	54,974	4,586
Minnesota	7,000	4,623	2,328	6,951	-40	-1.7	83	50
Mississippi	136,043	77,619	54,875	132,494	4,709	9.4	5,325	1,960
Missouri	30,564	21,600	9,372	30,972	226	2.5	218	8
Montana	375,010	167,399	68,265	235,664	-10,545	-13.4	1,221	1,556
Nebraska	39,469	31,507	3,389	34,896	-287	-7.8	202	774
New Mexico	94,600	25,948	5,866	31,814	-4,191	-41.7	879	1,367
New York	187,708	103,033	72,397	175,430	-852	-1.2	4,889	2,291
Ohio	620,544	349,901	183,731	533,633	14,789	8.8	15,315	1,689
Oklahoma	381,087	224,945	106,884	331,829	-19,402	-15.4	13,546	1,878
Oregon	11,623	4,896	6,759	11,655	-492	-6.8	225	432
Pennsylvania	727,392	357,439	355,205	712,644	-682	-0.2	22,976	7,519
Texas	663,034	250,273	185,031	435,303	-80,750	-30.4	31,753	9,282
Utah	122,499	62,100	32,092	94,192	-8,327	-20.6	1,729	3,144
Washington	33,900	21,728	12,391	34,119	-3,767	-23.3	655	2,297
West Virginia	510,932	304,592	174,265	478,857	13,039	8.1	17,413	2,201
Wyoming	105,669	60,782	25,608	86,390	-1,417	-5.2	540	268
Total	8,154,098	4,328,705	2,799,582	7,128,287	-196,446	-6.6	271,720	67,728

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 14. Natural Gas Deliveries to Residential Consumers, by State, 1994-1996
(Million Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996		
				September	August	July
Alabama	44,905	36,563	40,618	1,325	1,231	1,300
Alaska	11,052	10,660	10,161	589	544	493
Arizona	20,507	21,159	21,737	911	845	928
Arkansas	34,996	29,255	32,236	1,182	956	931
California	336,691	362,376	361,682	26,139	21,785	18,672
Colorado	NA	77,737	72,533	NA	NA	NA
Connecticut	32,560	29,507	32,859	992	954	1,088
Delaware	7,707	6,442	6,970	183	177	198
District of Columbia	13,199	11,412	12,645	405	384	417
Florida	13,003	11,083	11,067	691	659	741
Georgia	87,587	72,286	74,714	3,081	2,956	3,166
Hawaii	413	442	438	41	40	42
Idaho	10,497	9,263	8,005	363	277	300
Illinois	365,006	328,282	342,187	13,127	9,539	11,341
Indiana	NA	108,996	117,947	NA	3,115	3,268
Iowa	60,358	52,965	57,212	1,950	1,606	1,657
Kansas	58,159	52,041	53,022	1,994	1,623	1,786
Kentucky	48,680	41,470	45,328	1,418	1,276	1,129
Louisiana	45,172	38,739	41,894	1,900	1,835	1,832
Maine	678	617	647	28	23	25
Maryland	NA	53,039	58,593	NA	NA	2,054
Massachusetts	84,493	76,814	92,857	2,696	2,480	2,834
Michigan	289,429	261,392	275,804	9,069	7,303	7,660
Minnesota	97,189	85,734	89,107	2,929	2,401	2,549
Mississippi	NA	19,792	21,525	NA	770	815
Missouri	100,669	89,830	97,084	2,749	2,447	2,687
Montana	15,434	13,320	12,430	648	439	470
Nebraska	33,097	33,158	33,628	974	884	937
Nevada	16,258	16,163	14,829	732	678	779
New Hampshire	5,181	4,713	5,116	169	155	159
New Jersey	157,333	135,620	165,882	4,811	4,634	4,556
New Mexico	24,566	19,775	19,587	898	889	1,727
New York	NA	272,350	297,622	NA	NA	10,183
North Carolina	44,623	34,951	36,198	918	874	901
North Dakota	8,947	7,996	8,023	227	209	213
Ohio	265,753	239,631	257,069	7,156	6,423	7,343
Oklahoma	57,140	51,378	53,344	1,699	1,509	1,622
Oregon	23,507	20,369	19,335	820	673	838
Pennsylvania	198,918	179,230	204,814	5,623	5,275	5,597
Rhode Island	NA	12,701	13,710	NA	450	484
South Carolina	21,895	17,834	18,071	472	415	421
South Dakota	NA	8,745	8,661	NA	231	239
Tennessee	51,975	41,397	44,616	1,185	1,098	1,158
Texas	167,691	148,897	161,136	7,454	6,493	7,173
Utah	36,177	33,219	30,049	2,540	1,416	1,533
Vermont	1,913	1,683	1,934	56	47	51
Virginia	55,487	46,656	49,023	1,422	1,432	1,510
Washington	43,758	37,025	35,280	1,568	1,270	1,624
West Virginia	27,068	24,446	26,880	692	534	586
Wisconsin	NA	89,248	93,406	3,563	NA	NA
Wyoming	NA	NA	8,002	NA	NA	NA
Total	3,751,441	3,387,249	3,597,513	139,349	118,732	124,498

See footnotes at end of table.

Table 14. Natural Gas Deliveries to Residential Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1996					
	June	May	April	March	February	January
Alabama	1,477	2,958	6,343	8,079	11,261	10,931
Alaska	647	964	1,424	1,918	2,419	2,054
Arizona	1,102	1,345	2,182	3,408	4,274	5,511
Arkansas	1,204	1,970	4,853	6,155	8,725	9,021
California	26,029	30,042	36,771	52,297	58,085	66,870
Colorado	4,320	6,909	11,539	14,701	17,499	17,616
Connecticut	1,274	2,303	4,399	6,245	7,147	8,159
Delaware	313	523	1,129	1,522	1,941	1,721
District of Columbia	588	816	1,731	2,402	3,117	3,339
Florida	787	1,016	1,640	2,062	2,575	2,832
Georgia	3,103	4,251	9,817	17,770	19,247	24,195
Hawaii	45	44	49	52	51	49
Idaho	542	976	1,314	1,847	2,509	2,368
Illinois	12,429	27,148	43,168	71,301	81,128	95,825
Indiana	4,511	8,914	16,810	24,959	28,883	33,330
Iowa	2,336	4,173	6,925	11,795	13,686	16,229
Kansas	1,739	3,050	6,272	11,160	13,709	16,827
Kentucky	1,523	2,278	5,612	10,268	11,352	13,824
Louisiana	1,980	2,579	5,193	7,557	10,352	11,944
Maine	29	53	81	137	143	159
Maryland	2,631	4,077	7,237	11,845	14,351	16,033
Massachusetts	3,958	6,796	11,645	16,649	18,583	18,852
Michigan	10,627	24,651	40,297	57,657	63,694	68,472
Minnesota	3,659	7,237	12,091	18,871	22,363	25,091
Mississippi	838	1,364	3,170	3,846	5,892	6,143
Missouri	3,404	6,251	13,132	18,851	24,496	26,652
Montana	753	1,438	2,087	2,701	3,568	3,330
Nebraska	1,373	2,434	4,435	6,165	8,165	7,729
Nevada	1,011	1,264	1,884	2,903	3,264	3,744
New Hampshire	233	429	698	998	1,147	1,193
New Jersey	5,832	10,716	20,214	30,417	35,838	40,315
New Mexico	1,812	654	2,763	3,300	4,941	7,581
New York	14,050	25,108	41,145	59,700	61,146	68,834
North Carolina	1,226	2,160	6,272	7,490	11,875	12,907
North Dakota	399	818	1,348	1,640	2,160	1,932
Ohio	10,325	17,688	34,545	54,282	58,678	69,313
Oklahoma	1,981	3,309	7,669	10,126	14,443	14,782
Oregon	1,386	2,299	2,820	4,041	5,584	5,046
Pennsylvania	7,833	13,620	25,579	39,695	45,391	50,305
Rhode Island	692	1,216	1,831	2,664	3,119	2,704
South Carolina	542	945	2,968	3,706	5,887	6,539
South Dakota	464	803	1,367	1,865	2,221	2,343
Tennessee	1,319	2,339	7,012	9,454	13,711	14,700
Texas	7,783	9,595	19,163	28,188	35,810	46,031
Utah	1,351	2,252	4,540	5,419	8,571	8,555
Vermont	85	167	268	354	418	467
Virginia	2,100	2,550	6,609	11,307	13,807	14,750
Washington	2,626	4,463	5,445	7,639	10,136	8,988
West Virginia	812	1,642	3,855	5,463	6,564	6,918
Wisconsin	NA	8,023	12,785	20,340	22,584	25,431
Wyoming	NA	NA	NA	NA	NA	NA
Total	162,132	269,407	473,353	704,881	828,535	930,554

See footnotes at end of table.

Table 14. Natural Gas Deliveries to Residential Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	Total	December	November	October	September	August
Alabama	49,570	7,563	3,902	1,542	1,279	1,299
Alaska	15,231	2,294	1,411	866	588	448
Arizona	26,893	3,154	1,554	1,027	878	859
Arkansas	41,107	7,034	3,522	1,295	1,042	930
California	477,495	56,731	33,646	24,743	22,148	21,306
Colorado	104,286	12,262	8,830	5,456	2,773	2,681
Connecticut	40,824	6,389	3,449	1,479	1,035	884
Delaware	8,505	1,231	601	230	176	177
District of Columbia	15,690	2,579	1,246	452	401	379
Florida	14,540	1,785	1,004	668	729	641
Georgia	114,670	21,351	14,965	6,067	3,319	3,000
Hawaii	574	45	43	44	45	43
Idaho	13,003	1,748	1,364	628	304	254
Illinois	500,796	81,457	64,407	26,650	13,730	9,950
Indiana	161,059	26,875	18,305	6,884	3,627	2,826
Iowa	82,238	14,248	11,222	3,803	1,814	1,252
Kansas	75,846	13,608	6,757	3,440	1,847	1,654
Kentucky	66,149	12,325	9,224	3,130	1,338	1,120
Louisiana	52,603	7,401	4,391	2,073	1,816	1,691
Maine	913	151	97	48	31	24
Maryland	76,552	12,985	7,601	2,927	2,094	1,882
Massachusetts	105,795	15,933	9,090	3,958	2,664	2,358
Michigan	380,025	61,290	39,707	17,636	9,901	7,101
Minnesota	128,736	21,117	14,915	6,969	3,271	2,395
Mississippi	26,960	4,212	2,326	631	476	811
Missouri	125,110	19,696	11,325	4,259	2,842	2,394
Montana	19,640	2,697	2,248	1,376	666	447
Nebraska	45,054	6,188	4,132	1,577	1,051	906
Nevada	20,686	2,357	1,349	817	677	655
New Hampshire	6,507	991	550	254	175	135
New Jersey	194,432	33,195	18,422	7,195	4,957	4,378
New Mexico	28,770	4,649	3,027	1,319	814	815
New York	375,005	56,841	32,655	13,159	9,330	7,634
North Carolina	49,379	8,581	4,445	1,402	938	799
North Dakota	11,209	1,695	1,095	424	252	183
Ohio	357,754	59,871	40,926	17,326	7,397	6,298
Oklahoma	68,702	9,769	5,029	2,526	1,715	1,552
Oregon	28,067	3,952	2,620	1,128	687	654
Pennsylvania	262,126	44,456	27,801	10,640	5,805	5,084
Rhode Island	17,342	2,634	1,336	672	474	448
South Carolina	25,164	4,422	2,262	646	475	397
South Dakota	12,610	1,828	1,332	705	307	206
Tennessee	59,994	9,171	7,624	1,801	1,065	1,054
Texas	206,415	30,741	17,917	8,860	7,378	6,707
Utah	48,975	7,214	4,684	3,857	1,970	1,422
Vermont	2,299	353	176	86	54	42
Virginia	68,712	12,753	7,059	2,245	1,383	1,459
Washington	52,763	7,611	5,683	2,444	1,411	1,251
West Virginia	35,379	5,867	3,626	1,441	740	560
Wisconsin	136,012	22,980	16,784	7,000	3,699	2,698
Wyoming	NA	NA	NA	NA	NA	271
Total	4,850,318	757,844	488,812	216,412	133,951	114,415

See footnotes at end of table.

Table 14. Natural Gas Deliveries to Residential Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	July	June	May	April	March	February
Alabama	1,401	1,565	2,206	3,692	7,586	9,200
Alaska	534	680	943	1,573	1,912	1,923
Arizona	969	1,248	1,824	2,428	2,846	4,576
Arkansas	997	1,243	1,881	2,973	5,691	6,900
California	25,181	28,924	38,489	43,743	52,461	50,614
Colorado	3,590	6,098	9,143	9,879	12,862	14,457
Connecticut	1,045	1,393	2,402	4,156	5,825	6,577
Delaware	197	264	501	865	1,417	1,487
District of Columbia	431	472	813	1,299	2,239	2,877
Florida	716	748	841	1,122	1,595	2,453
Georgia	3,002	3,206	3,961	6,026	10,571	18,858
Hawaii	47	50	49	50	52	52
Idaho	338	539	915	1,274	1,503	1,760
Illinois	11,706	12,034	20,203	42,392	54,784	74,502
Indiana	3,083	3,701	7,364	13,049	19,515	27,283
Iowa	1,380	1,334	4,303	7,377	7,941	12,569
Kansas	1,829	2,078	3,902	5,711	9,676	11,140
Kentucky	1,208	1,129	2,403	3,655	7,410	10,855
Louisiana	1,758	2,219	2,434	3,731	6,640	8,860
Maine	24	28	48	81	112	139
Maryland	1,945	2,228	3,664	6,097	9,542	13,230
Massachusetts	2,642	3,606	6,194	10,980	15,059	17,398
Michigan	7,955	10,470	21,477	36,085	49,545	60,358
Minnesota	2,584	3,405	6,033	11,393	15,592	19,905
Mississippi	841	892	1,178	1,770	3,800	4,997
Missouri	2,869	3,659	6,828	9,399	16,036	22,443
Montana	532	704	1,264	1,796	2,441	2,398
Nebraska	1,035	1,587	2,967	4,284	6,026	7,156
Nevada	801	1,087	1,568	2,156	2,189	3,102
New Hampshire	160	225	376	688	917	1,024
New Jersey	4,768	5,427	9,274	17,191	25,526	33,594
New Mexico	757	1,371	1,734	2,282	2,699	3,968
New York	10,010	13,817	23,334	38,254	52,596	60,717
North Carolina	976	1,095	1,882	3,644	6,916	9,632
North Dakota	235	390	706	1,190	1,518	1,711
Ohio	7,097	8,575	16,763	30,852	43,659	58,896
Oklahoma	1,833	2,302	4,033	5,294	10,224	11,495
Oregon	808	1,084	2,048	2,783	3,532	3,656
Pennsylvania	5,638	6,588	12,140	23,525	33,973	45,212
Rhode Island	448	711	1,195	1,834	2,634	2,903
South Carolina	472	510	746	1,584	3,604	5,128
South Dakota	271	408	782	1,255	1,622	1,867
Tennessee	1,149	1,350	2,007	3,361	7,907	11,830
Texas	7,545	8,008	9,947	14,952	26,496	30,036
Utah	1,386	1,956	2,965	4,336	5,407	6,009
Vermont	49	79	136	266	333	372
Virginia	1,494	1,626	2,830	4,876	8,887	12,596
Washington	1,361	1,926	3,088	5,064	6,878	7,028
West Virginia	574	702	1,776	3,173	4,592	6,546
Wisconsin	2,699	3,488	5,804	12,184	15,794	20,703
Wyoming	347	681	1,006	1,200	1,453	1,496
Total	130,717	158,908	260,367	418,820	600,034	754,491

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 15. Natural Gas Deliveries to Commercial Consumers, by State, 1994-1996
(Million Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996		
				September	August	July
Alabama	22,441	19,227	20,125	1,232	1,158	1,192
Alaska	17,696	17,482	14,550	1,368	1,177	1,125
Arizona	21,729	21,650	21,642	1,696	1,769	1,796
Arkansas	23,416	19,650	21,099	1,197	1,061	1,057
California	169,203	208,519	193,184	17,456	17,453	17,060
Colorado	NA	49,867	48,351	NA	NA	NA
Connecticut	29,323	28,730	29,868	1,817	1,711	1,967
Delaware	5,116	4,265	4,340	224	204	203
District of Columbia	11,909	12,931	11,217	768	746	800
Florida	31,591	30,490	30,462	2,827	2,703	2,822
Georgia	44,767	39,389	40,117	2,701	2,613	2,730
Hawaii	1,613	1,665	1,649	170	165	174
Idaho	8,192	7,472	6,752	422	355	347
Illinois	145,441	138,780	143,057	7,149	5,332	5,446
Indiana	NA	56,395	55,733	NA	2,440	2,307
Iowa	37,464	33,182	34,524	1,925	1,077	1,212
Kansas	51,896	36,303	39,016	1,696	4,622	2,520
Kentucky	28,654	25,547	27,151	1,224	1,150	1,059
Louisiana	20,401	17,987	18,869	1,327	1,332	1,277
Maine	1,810	1,654	1,730	78	75	74
Maryland	NA	32,559	32,548	NA	NA	1,728
Massachusetts	68,358	59,053	66,841	4,783	4,272	3,744
Michigan	148,489	134,767	138,144	6,345	5,574	5,858
Minnesota	66,699	60,426	59,627	2,726	2,283	2,346
Mississippi	NA	14,571	14,921	NA	1,221	1,179
Missouri	53,764	46,884	52,156	2,251	2,375	2,307
Montana	10,181	9,237	8,631	499	375	386
Nebraska	NA	NA	29,919	NA	NA	NA
Nevada	14,567	14,237	13,381	1,088	1,036	1,099
New Hampshire	5,075	4,620	4,922	196	186	172
New Jersey	108,063	100,958	100,792	5,325	5,490	5,454
New Mexico	20,116	17,535	17,002	1,140	1,457	1,514
New York	NA	165,324	169,848	NA	NA	NA
North Carolina	31,057	27,081	29,416	1,711	1,625	1,458
North Dakota	8,688	8,162	7,815	346	307	294
Ohio	136,558	120,945	125,937	4,129	4,490	4,662
Oklahoma	32,704	29,620	28,190	1,591	1,509	1,626
Oregon	18,351	16,406	15,773	1,021	904	966
Pennsylvania	111,847	94,638	103,535	4,297	5,633	4,271
Rhode Island	NA	8,745	9,132	NA	442	419
South Carolina	15,457	13,726	13,578	1,033	950	927
South Dakota	NA	7,450	7,326	NA	283	288
Tennessee	42,472	36,063	38,854	2,420	1,990	1,964
Texas	NA	157,200	140,075	NA	NA	15,399
Utah	20,047	18,590	16,741	1,282	876	906
Vermont	2,057	1,890	2,003	91	69	68
Virginia	41,993	40,208	38,729	2,464	2,085	2,571
Washington	34,334	30,939	29,337	1,923	1,696	1,859
West Virginia	21,462	18,043	18,824	1,250	1,331	1,393
Wisconsin	NA	55,427	56,142	NA	NA	NA
Wyoming	NA	NA	6,479	NA	NA	NA
Total	2,387,501	2,143,906	2,160,054	136,326	131,843	129,567

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Commercial Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1996					
	June	May	April	March	February	January
Alabama	1,252	1,722	2,866	3,714	4,775	4,529
Alaska	1,247	1,558	2,084	2,778	3,264	3,096
Arizona	2,014	2,129	2,555	3,012	3,136	3,620
Arkansas	1,053	1,520	2,966	3,897	5,251	5,414
California	15,671	16,245	17,216	21,546	23,078	23,477
Colorado	3,057	4,431	6,997	8,908	10,393	10,385
Connecticut	1,745	2,247	3,528	4,844	5,472	5,992
Delaware	246	366	694	889	1,186	1,104
District of Columbia	824	1,233	1,893	1,537	1,952	2,156
Florida	3,015	3,321	3,899	4,142	4,248	4,613
Georgia	2,499	3,274	5,371	7,474	8,401	9,702
Hawaii	175	171	189	182	190	198
Idaho	479	711	996	1,363	1,785	1,735
Illinois	5,713	9,682	17,310	26,484	32,431	35,894
Indiana	2,789	4,497	7,988	11,920	13,850	15,863
Iowa	1,629	2,572	4,548	7,047	8,289	9,164
Kansas	2,351	4,060	6,275	8,795	10,003	11,575
Kentucky	1,080	1,544	3,341	5,578	6,364	7,315
Louisiana	1,511	1,682	2,401	3,039	3,876	3,956
Maine	82	137	208	356	386	413
Maryland	1,843	2,529	3,912	5,753	6,627	7,835
Massachusetts	4,200	6,048	8,952	11,127	12,640	12,591
Michigan	6,541	12,480	19,934	28,197	30,779	32,781
Minnesota	3,024	5,314	8,731	12,796	13,776	15,703
Mississippi	1,091	1,280	2,024	2,607	3,404	3,581
Missouri	2,395	3,583	6,656	9,543	11,719	12,936
Montana	508	861	1,330	1,761	2,276	2,185
Nebraska	NA	NA	NA	NA	NA	NA
Nevada	1,257	1,420	1,769	2,219	2,262	2,418
New Hampshire	237	399	654	963	1,118	1,151
New Jersey	5,697	8,016	14,342	17,802	22,520	23,419
New Mexico	1,721	1,549	2,569	2,617	3,427	4,123
New York	NA	NA	NA	NA	NA	NA
North Carolina	1,635	2,031	3,871	4,994	6,615	7,117
North Dakota	528	747	1,256	1,499	1,861	1,850
Ohio	7,635	8,922	16,758	26,529	29,596	33,837
Oklahoma	1,663	2,043	4,102	5,228	7,469	7,474
Oregon	1,302	1,781	2,056	2,895	3,900	3,526
Pennsylvania	5,389	7,903	13,699	20,751	23,598	26,306
Rhode Island	445	757	996	1,605	1,917	1,682
South Carolina	1,270	1,424	1,858	2,160	2,743	3,092
South Dakota	386	619	1,059	1,487	1,685	1,821
Tennessee	2,165	2,690	5,241	7,173	9,108	9,722
Texas	15,909	18,409	21,434	26,607	20,625	26,789
Utah	894	1,354	2,475	3,124	4,596	4,541
Vermont	98	155	282	384	449	462
Virginia	2,998	3,407	5,062	7,205	7,874	8,327
Washington	2,669	3,430	4,143	5,445	6,843	6,326
West Virginia	1,141	1,596	2,573	3,522	4,103	4,551
Wisconsin	NA	5,100	7,921	12,341	13,930	16,022
Wyoming	NA	NA	NA	NA	NA	NA
Total	143,553	192,072	297,337	403,170	456,959	496,673

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Commercial Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	Total	December	November	October	September	August
Alabama	26,232	3,502	2,177	1,323	1,139	1,110
Alaska	24,979	3,190	2,461	1,846	1,366	1,301
Arizona	28,329	2,802	2,056	1,702	1,652	1,817
Arkansas	27,411	4,311	2,265	1,183	1,060	1,021
California	279,606	26,152	22,818	21,272	19,391	18,362
Colorado	66,657	7,282	5,703	3,787	2,210	2,314
Connecticut	37,890	4,491	2,808	1,850	1,762	1,869
Delaware	5,743	851	417	209	205	168
District of Columbia	17,045	2,194	1,116	794	766	744
Florida	40,459	3,883	3,171	2,840	2,818	2,751
Georgia	56,538	8,062	5,706	3,379	2,450	2,781
Hawaii	2,199	177	178	179	179	178
Idaho	10,380	1,300	997	591	392	346
Illinois	203,833	30,734	22,408	11,880	6,984	6,612
Indiana	82,825	13,009	9,142	4,181	2,645	2,328
Iowa	50,329	8,170	5,952	3,021	1,701	1,150
Kansas	53,124	9,850	4,066	2,903	2,921	3,564
Kentucky	38,613	6,426	4,746	1,892	1,247	1,099
Louisiana	23,854	2,613	1,823	1,410	1,327	1,307
Maine	2,426	389	254	129	86	71
Maryland	46,924	7,538	4,871	1,907	2,065	1,722
Massachusetts	82,282	11,594	7,597	4,026	3,525	3,344
Michigan	194,105	29,922	19,742	9,647	6,417	5,778
Minnesota	90,684	13,839	10,937	5,456	2,864	2,156
Mississippi	20,171	2,627	1,693	1,013	1,023	1,202
Missouri	65,092	9,698	5,747	2,756	2,119	2,019
Montana	13,497	1,898	1,454	899	520	376
Nebraska	NA	NA	NA	NA	NA	2,997
Nevada	18,812	1,871	1,444	1,151	1,009	978
New Hampshire	6,515	989	620	285	197	166
New Jersey	138,971	20,914	10,830	6,263	5,734	5,307
New Mexico	24,007	2,920	2,149	1,330	1,193	1,119
New York	231,479	30,309	22,325	13,394	10,619	10,797
North Carolina	37,371	5,279	3,263	1,740	1,597	1,475
North Dakota	11,656	1,723	1,209	549	333	324
Ohio	175,347	27,649	18,650	7,916	4,623	4,406
Oklahoma	39,756	5,164	3,020	1,836	1,903	1,524
Oregon	22,437	2,837	2,010	1,166	979	879
Pennsylvania	143,744	22,596	19,918	6,583	4,210	3,935
Rhode Island	12,066	1,523	1,216	580	294	582
South Carolina	18,869	2,414	1,674	1,054	1,044	956
South Dakota	10,689	1,452	1,118	665	357	263
Tennessee	51,238	7,681	4,908	2,582	2,002	2,079
Texas	209,613	22,432	16,279	13,673	11,336	16,588
Utah	26,925	3,724	2,605	1,905	1,088	899
Vermont	2,672	410	242	130	95	72
Virginia	56,991	8,287	5,766	2,687	2,147	2,473
Washington	42,675	5,274	4,052	2,304	1,862	1,654
West Virginia	25,879	3,533	2,739	1,557	1,150	1,056
Wisconsin	84,920	13,817	10,676	4,968	2,943	2,214
Wyoming	NA	NA	NA	NA	NA	258
Total	3,033,751	419,620	296,702	170,849	129,530	130,493

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Commercial Consumers, by State, 1994-1996

(Million Cubic Feet) — Continued

State	1995					
	July	June	May	April	March	February
Alabama	1,149	1,242	1,454	1,963	3,432	4,029
Alaska	1,325	1,489	1,603	2,362	2,896	2,727
Arizona	1,840	2,014	2,251	2,556	2,703	3,181
Arkansas	1,015	1,156	1,337	2,027	3,478	4,171
California	21,954	19,028	24,831	23,976	23,399	25,693
Colorado	2,634	4,061	5,776	6,413	7,763	9,146
Connecticut	1,679	1,917	2,629	3,524	4,972	5,247
Delaware	182	223	341	527	854	935
District of Columbia	820	884	1,158	1,607	2,089	2,583
Florida	2,970	2,930	3,055	3,433	3,900	4,361
Georgia	2,519	2,615	2,918	3,739	5,870	8,315
Hawaii	186	188	185	183	185	180
Idaho	361	487	708	951	1,154	1,319
Illinois	6,035	6,157	9,135	15,643	23,332	30,538
Indiana	2,230	2,442	4,048	6,546	9,559	13,113
Iowa	1,310	1,484	2,321	4,189	5,633	7,042
Kansas	2,294	1,843	2,912	3,756	5,250	6,607
Kentucky	1,130	1,060	1,687	2,090	4,486	6,248
Louisiana	1,215	1,555	1,576	1,840	2,746	3,210
Maine	70	77	128	211	288	373
Maryland	1,612	1,994	2,388	3,736	4,472	7,826
Massachusetts	3,386	3,930	5,319	7,717	10,005	11,385
Michigan	5,664	6,372	11,004	18,384	23,980	29,223
Minnesota	2,212	2,618	4,303	7,759	10,569	13,146
*Mississippi	902	1,074	1,070	1,295	2,252	2,809
Missouri	2,050	2,326	3,512	4,806	8,096	10,770
Montana	404	488	872	1,245	1,654	1,591
Nebraska	2,436	1,003	1,320	1,742	2,455	2,977
Nevada	1,082	1,268	1,558	1,784	1,868	2,139
New Hampshire	188	227	369	632	864	999
New Jersey	5,615	5,624	8,377	12,498	17,836	20,604
New Mexico	1,073	1,408	2,105	2,006	2,280	2,396
New York	11,281	11,501	14,459	20,813	28,182	29,345
North Carolina	1,487	1,579	1,766	3,065	4,241	6,031
North Dakota	341	408	673	1,145	1,470	1,662
Ohio	4,697	4,979	8,132	14,128	21,860	29,814
Oklahoma	1,558	1,794	2,354	2,968	5,160	6,001
Oregon	959	1,160	1,579	2,064	2,553	2,687
Pennsylvania	3,929	4,435	7,223	11,960	16,824	21,364
Rhode Island	413	562	901	1,353	1,883	1,679
South Carolina	950	1,013	1,045	1,382	2,111	2,626
South Dakota	311	400	645	1,049	1,315	1,491
Tennessee	1,917	2,023	2,348	3,131	5,891	8,306
Texas	16,809	12,301	16,425	18,230	22,055	20,308
Utah	861	1,122	1,675	2,429	2,948	3,324
Vermont	70	89	140	277	352	406
Virginia	2,341	2,533	3,329	4,532	6,533	8,210
Washington	1,750	2,179	2,857	3,915	5,012	5,279
West Virginia	998	1,055	1,392	2,021	2,793	3,918
Wisconsin	1,916	1,833	4,250	7,173	9,761	12,318
Wyoming	373	594	873	987	1,217	1,247
Total	132,500	132,746	184,318	253,763	342,484	410,900

NA = Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. Deliveries for total year 1995 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 16. Natural Gas Deliveries to Industrial Consumers, by State, 1994-1996
(Million Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996		
				September	August	July
Alabama	151,631	152,275	133,671	17,183	16,496	16,794
Alaska	55,711	52,137	43,797	6,288	6,961	6,577
Arizona	18,506	20,871	19,177	2,279	2,172	2,220
Arkansas	86,448	102,685	99,143	7,896	8,990	7,390
California	497,426	514,992	494,928	59,349	64,670	60,431
Colorado	NA	57,691	52,406	NA	NA	NA
Connecticut	23,319	24,381	22,434	2,548	2,781	2,286
Delaware	10,498	14,760	11,966	1,138	1,117	1,122
District of Columbia	0	0	0	0	0	0
Florida	102,727	96,510	92,162	11,770	11,813	11,552
Georgia	132,107	133,142	126,616	14,813	15,983	14,011
Hawaii	0	0	0	0	0	0
Idaho	25,913	24,842	21,229	2,802	2,408	2,697
Illinois	240,019	228,316	222,771	20,140	21,041	19,178
Indiana	NA	202,833	197,459	NA	19,676	20,037
Iowa	81,496	82,871	78,981	7,552	8,875	8,305
Kansas	101,280	97,457	134,226	9,960	11,693	11,254
Kentucky	68,230	66,313	60,293	6,743	6,430	6,045
Louisiana	788,830	787,933	740,216	92,337	89,426	87,374
Maine	1,391	1,383	1,260	165	156	128
Maryland	NA	37,281	34,647	NA	NA	4,262
Massachusetts	71,494	81,459	69,174	8,116	8,889	7,274
Michigan	264,443	241,444	240,895	25,020	24,539	24,946
Minnesota	78,166	77,463	68,174	7,792	7,566	7,989
Mississippi	61,353	63,191	64,012	6,642	6,532	6,839
Missouri	52,683	50,185	49,325	4,469	5,765	4,070
Montana	12,464	12,916	9,697	1,335	1,380	1,224
Nebraska	20,723	34,417	26,940	1,857	1,928	1,976
Nevada	24,369	22,955	21,437	2,714	2,773	2,847
New Hampshire	3,274	3,392	3,260	354	352	324
New Jersey	139,561	156,047	142,966	14,258	15,593	14,236
New Mexico	15,148	15,538	13,483	1,570	1,563	1,600
New York	197,402	205,077	154,725	20,727	22,197	21,237
North Carolina	75,859	79,438	68,721	9,211	8,952	8,169
North Dakota	4,757	4,728	4,302	561	409	434
Ohio	257,049	243,449	227,281	23,475	23,938	22,619
Oklahoma	150,159	146,340	146,586	16,821	17,167	16,923
Oregon	63,157	50,491	45,497	7,933	7,887	7,327
Pennsylvania	196,374	184,211	172,663	17,633	19,207	17,214
Rhode Island	NA	25,910	29,553	NA	2,362	1,914
South Carolina	68,069	74,852	71,145	7,925	7,991	7,710
South Dakota	NA	4,960	3,759	NA	496	489
Tennessee	91,334	93,159	87,817	10,558	10,115	9,710
Texas	NA	1,412,624	1,401,811	170,430	NA	165,822
Utah	31,353	31,794	25,492	3,445	3,382	3,261
Vermont	1,358	1,502	1,476	149	153	106
Virginia	61,344	73,234	65,880	5,368	7,286	7,089
Washington	83,222	80,875	77,551	10,209	9,965	8,949
West Virginia	37,901	38,253	34,818	4,781	4,033	4,033
Wisconsin	107,847	104,181	100,980	9,591	9,206	8,540
Wyoming	NA	NA	42,292	NA	NA	NA
Total	6,519,897	6,347,907	6,059,094	695,777	713,619	678,101

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Industrial Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1996					
	June	May	April	March	February	January
Alabama	15,727	16,863	17,310	17,354	16,957	16,946
Alaska	6,268	5,808	6,123	6,764	6,115	4,807
Arizona	2,180	1,453	2,042	2,112	1,897	2,152
Arkansas	7,565	7,760	9,395	12,224	12,109	13,120
California	53,941	53,833	52,449	49,361	51,616	51,774
Colorado	6,309	6,597	8,185	7,182	9,397	7,112
Connecticut	2,457	2,467	2,809	3,036	2,777	2,159
Delaware	1,303	1,207	1,046	1,314	1,082	1,170
District of Columbia	0	0	0	0	0	0
Florida	10,988	12,826	11,552	11,679	10,963	9,584
Georgia	14,632	15,449	15,477	15,227	12,024	14,490
Hawaii	0	0	0	0	0	0
Idaho ^a	2,698	2,850	2,856	3,206	3,062	3,335
Illinois	21,336	25,635	27,988	32,566	33,454	38,681
Indiana	42,147	9,883	22,984	26,207	25,615	29,228
Iowa	8,419	7,462	9,701	10,401	9,701	11,082
Kansas	11,669	9,541	10,308	10,938	11,844	14,074
Kentucky	8,704	6,403	7,246	8,414	8,194	10,051
Louisiana	90,176	87,567	91,694	88,725	82,114	79,416
Maine	167	148	134	159	164	171
Maryland	3,970	4,064	4,983	4,673	3,251	3,579
Massachusetts	7,212	7,165	8,260	8,835	6,963	8,780
Michigan	26,087	28,405	30,792	35,200	35,214	34,241
Minnesota	8,586	8,510	9,983	10,346	7,846	9,548
Mississippi	6,590	6,733	7,012	7,373	7,151	6,481
Missouri	4,644	5,311	6,382	6,973	7,163	7,906
Montana	1,174	1,286	1,311	1,435	1,512	1,807
Nebraska	1,922	2,114	2,576	2,857	2,666	2,828
Nevada	2,710	2,858	2,524	2,649	2,545	2,750
New Hampshire	344	424	400	390	330	357
New Jersey	13,725	14,226	17,426	15,442	16,487	18,169
New Mexico	1,632	1,420	1,749	1,609	1,960	2,044
New York	21,379	19,349	22,857	19,921	22,936	26,799
North Carolina	8,361	9,110	8,777	9,025	6,955	7,299
North Dakota	353	605	608	630	577	581
Ohio	29,133	26,206	28,680	31,069	33,410	38,520
Oklahoma	14,670	15,962	15,052	17,717	16,794	19,054
Oregon	6,795	7,792	5,970	6,376	6,164	6,913
Pennsylvania	18,560	19,897	21,123	23,168	22,258	37,314
Rhode Island	2,114	2,210	2,087	1,833	1,647	3,499
South Carolina	7,826	8,236	8,275	7,668	6,330	6,107
South Dakota	478	509	550	1,684	698	629
Tennessee	9,995	9,460	9,591	9,912	10,208	11,785
Texas	170,788	179,149	178,591	183,201	176,101	179,155
Utah	3,171	3,374	3,435	3,636	3,721	3,928
Vermont	152	175	133	223	148	119
Virginia	4,478	6,649	5,953	9,957	7,239	7,326
Washington	7,684	8,630	8,821	9,105	9,810	10,049
West Virginia	3,815	4,020	4,070	4,458	4,176	4,516
Wisconsin	9,186	10,790	13,184	15,050	15,019	17,283
Wyoming	NA	NA	NA	NA	NA	NA
Total	708,317	692,389	734,626	763,301	740,962	792,806

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Industrial Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	Total	December	November	October	September	August
Alabama	204,060	17,790	17,076	16,919	16,065	17,446
Alaska	64,977	4,714	3,999	4,128	6,889	10,375
Arizona	27,663	2,296	2,248	2,248	2,131	2,127
Arkansas	138,803	11,998	12,094	12,026	10,697	11,524
California	687,921	56,444	54,388	62,097	59,153	59,907
Colorado	72,439	5,739	5,243	3,766	6,262	5,931
Connecticut	33,106	3,028	3,158	2,538	2,179	2,220
Delaware	19,399	1,287	1,669	1,683	1,619	1,656
District of Columbia	0	0	0	0	0	0
Florida	133,477	15,661	10,973	10,332	9,602	10,242
Georgia	183,692	16,401	16,694	17,455	12,994	14,253
Hawaii	0	0	0	0	0	0
Idaho *	34,024	3,129	2,943	3,109	2,468	2,291
Illinois	321,465	35,704	32,284	25,162	21,899	21,509
Indiana	275,487	26,872	24,695	21,086	19,205	19,212
Iowa	115,080	12,216	9,887	10,106	8,625	8,816
Kansas	129,515	12,193	10,508	9,357	10,203	13,141
Kentucky	90,764	8,834	8,071	7,545	6,461	6,285
Louisiana	1,044,136	85,024	83,880	87,298	85,727	87,079
Maine	1,993	169	242	199	155	161
Maryland	48,963	3,106	3,881	4,694	3,377	4,443
Massachusetts	107,730	9,656	9,132	7,483	7,740	8,532
Michigan	326,551	32,701	27,912	24,493	22,997	23,632
Minnesota	106,189	10,889	9,114	8,724	7,894	8,426
Mississippi	84,526	7,352	7,334	6,649	5,840	6,856
Missouri	68,924	7,185	6,164	5,389	4,862	4,719
Montana	18,135	1,821	1,753	1,645	1,315	1,331
Nebraska	44,767	3,141	4,125	3,084	4,337	3,915
Nevada	30,641	2,702	2,612	2,371	2,643	2,692
New Hampshire	4,607	348	450	416	350	353
New Jersey	209,014	19,886	18,318	14,764	15,953	16,057
New Mexico	21,095	2,469	2,100	989	1,716	1,999
New York	278,576	26,167	24,647	22,686	19,886	22,529
North Carolina	106,731	8,684	9,303	9,306	8,824	9,087
North Dakota	6,505	627	600	549	411	391
Ohio	336,552	35,635	30,953	26,516	23,938	23,159
Oklahoma	194,101	15,082	16,493	16,186	15,262	17,580
Oregon	66,904	6,418	5,836	6,158	5,246	5,941
Pennsylvania	249,928	22,158	24,198	19,361	17,922	18,075
Rhode Island	35,109	4,305	3,048	1,846	2,563	2,944
South Carolina	98,332	6,928	8,251	8,301	8,081	8,460
South Dakota	6,933	702	730	542	474	531
Tennessee	125,814	11,360	10,937	10,358	10,680	9,378
Texas	1,923,763	179,078	163,975	168,086	156,909	147,607
Utah	42,373	3,805	3,378	3,396	3,116	2,995
Vermont	2,159	254	221	181	115	150
Virginia	97,499	9,819	7,113	7,333	8,569	11,546
Washington	109,997	9,389	9,594	10,139	9,314	9,447
West Virginia	52,239	4,576	4,834	4,576	4,043	4,111
Wisconsin	146,070	15,931	14,483	11,474	9,663	9,313
Wyoming	NA	NA	NA	NA	NA	3,738
Total	8,579,585	786,266	736,229	709,183	670,153	684,111

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Industrial Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	July	June	May	April	March	February
Alabama	17,003	16,661	16,508	16,252	17,788	16,837
Alaska	6,994	7,688	3,660	4,121	4,458	3,559
Arizona	1,989	2,202	2,454	2,513	2,855	2,317
Arkansas	10,995	10,731	11,307	10,842	12,156	11,572
California	58,181	57,915	59,543	60,714	52,912	48,862
Colorado	5,530	6,613	6,365	6,496	6,443	6,468
Connecticut	2,700	2,267	2,518	3,036	3,455	2,993
Delaware	1,483	1,741	2,099	1,815	1,573	1,315
District of Columbia	0	0	0	0	0	0
Florida	10,470	9,977	11,178	11,206	11,644	10,599
Georgia	14,123	14,480	15,202	16,709	15,897	13,343
Hawaii	0	0	0	0	0	0
Idaho *	2,348	2,822	2,796	2,834	3,030	2,926
Illinois	19,734	21,215	23,683	25,306	28,577	32,794
Indiana	18,141	18,794	20,837	22,824	25,755	25,509
Iowa	8,405	8,633	9,160	9,482	9,920	9,456
Kansas	10,958	8,352	11,659	10,255	10,805	8,142
Kentucky	5,886	6,462	6,960	7,461	8,428	9,135
Louisiana	88,168	83,825	93,065	88,016	85,667	83,605
Maine	136	155	171	182	150	137
Maryland	4,243	4,080	4,623	4,363	5,177	3,577
Massachusetts	8,616	9,484	7,703	9,280	10,304	10,016
Michigan	22,010	24,185	26,055	29,765	31,514	31,563
Minnesota	8,111	7,492	7,814	8,668	8,797	9,154
Mississippi	6,644	6,748	7,283	6,652	7,716	7,348
Missouri	4,256	4,474	4,997	5,429	6,712	6,982
Montana	1,307	1,307	1,509	1,579	1,685	1,296
Nebraska	4,526	3,269	3,553	3,626	3,755	3,507
Nevada	2,613	2,553	2,761	2,292	2,319	2,312
New Hampshire	364	367	411	506	443	283
New Jersey	15,519	15,346	16,166	18,107	20,011	18,744
New Mexico	1,403	1,334	1,337	1,548	1,663	1,502
New York	22,633	20,332	20,568	23,355	25,250	24,956
North Carolina	8,117	9,007	8,652	8,488	9,598	8,354
North Dakota	470	475	528	558	646	623
Ohio	21,212	22,325	24,718	27,547	31,440	34,423
Oklahoma	14,072	16,299	15,407	14,639	16,904	15,311
Oregon	5,371	5,236	5,617	5,543	5,875	5,550
Pennsylvania	17,785	18,127	18,912	21,463	23,679	23,577
Rhode Island	2,890	2,720	3,240	3,295	2,879	2,529
South Carolina	7,481	9,212	8,912	8,664	10,029	6,992
South Dakota	499	553	567	581	537	629
Tennessee	9,050	10,275	8,269	11,944	11,132	10,850
Texas	168,106	152,278	174,700	161,166	156,485	143,975
Utah	2,891	2,997	3,450	3,500	3,442	3,955
Vermont	151	157	172	193	186	175
Virginia	10,330	7,703	7,767	7,015	6,307	6,287
Washington	7,674	7,590	7,812	9,408	9,752	9,258
West Virginia	3,753	3,920	4,306	4,207	4,723	4,445
Wisconsin	8,377	8,810	10,329	12,596	13,932	15,117
Wyoming	3,452	3,967	3,914	4,166	3,633	3,967
Total	677,167	663,154	711,216	720,208	738,039	706,828

* 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 1995 in Idaho do not equal the sum of the twelve months.

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 17. Natural Gas Deliveries to Electric Utility* Consumers,
by State, 1994-1996**
(Million Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996		
				September	August	July
Alabama	4,993	6,784	2,758	593	708	1,457
Alaska	23,375	22,495	20,539	2,449	2,595	2,514
Arizona	16,271	17,459	20,287	2,145	4,797	3,286
Arkansas	32,276	29,256	21,798	4,215	5,421	7,029
California	245,779	305,573	446,776	35,565	54,986	42,047
Colorado	3,599	2,967	3,746	622	677	494
Connecticut	7,772	17,339	4,169	2,168	2,269	1,409
Delaware	17,867	20,212	11,857	2,562	2,416	2,342
District of Columbia	0	0	0	0	0	0
Florida	224,028	245,455	135,130	33,596	33,376	29,468
Georgia	4,545	7,571	877	243	588	1,514
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	22,417	31,689	25,189	2,309	4,289	4,369
Indiana	3,695	6,809	7,459	197	570	483
Iowa	2,813	3,125	2,208	277	298	355
Kansas	20,563	25,175	22,564	1,959	4,148	4,884
Kentucky	1,586	542	278	83	281	249
Louisiana	207,235	258,291	217,829	21,485	32,455	35,959
Maine	0	0	0	0	0	0
Maryland	7,498	17,625	11,153	1,521	1,920	1,273
Massachusetts	31,686	53,802	26,897	9,010	7,153	3,477
Michigan	23,822	26,507	12,813	3,320	2,746	2,767
Minnesota	4,011	7,019	4,234	602	624	690
Mississippi	67,652	93,247	55,804	9,812	12,074	10,509
Missouri	4,840	11,679	3,441	403	896	1,152
Montana	271	314	493	35	23	45
Nebraska	2,053	2,278	2,612	161	213	348
Nevada	37,742	31,848	26,811	4,900	6,394	6,552
New Hampshire	2	2,237	1,051	0	0	0
New Jersey	22,869	38,991	35,894	3,576	4,064	4,441
New Mexico	22,521	26,140	24,583	2,491	3,455	3,481
New York	112,443	201,284	130,192	21,421	24,086	18,789
North Carolina	2,268	2,771	866	75	196	766
North Dakota	3	1	2	1	1	0
Ohio	2,447	6,562	2,604	257	593	312
Oklahoma	112,404	128,600	119,556	13,201	19,056	19,748
Oregon	9,342	14,042	17,006	3,801	3,202	2,339
Pennsylvania	5,655	22,522	7,753	1,151	1,778	676
Rhode Island	18,036	944	546	2,236	2,417	2,031
South Carolina	1,148	5,530	634	350	64	239
South Dakota	605	838	102	76	178	155
Tennessee	571	2,055	970	79	240	130
Texas	856,340	855,019	829,028	90,561	120,040	136,076
Utah	3,024	7,202	5,917	554	870	810
Vermont	15	75	157	3	2	3
Virginia	9,166	13,253	13,979	1,677	1,578	1,704
Washington	5,410	4,942	2,166	2,251	2,558	451
West Virginia	158	302	180	26	15	11
Wisconsin	5,227	7,970	3,056	739	1,198	532
Wyoming	12	102	99	0	0	0
Total	2,208,046	2,586,445	2,284,061	284,756	367,510	357,368

See footnotes at end of table.

**Table 17. Natural Gas Deliveries to Electric Utility^a Consumers,
by State, 1994-1996**
(Million Cubic Feet) — Continued

State	1996					
	June	May	April	March	February	January
Alabama	932	841	112	134	125	92
Alaska	2,613	2,595	2,434	2,763	2,573	2,839
Arizona	1,942	1,048	828	649	550	1,025
Arkansas	5,729	4,348	3,663	1,181	433	258
California	23,710	18,674	18,202	13,728	15,742	23,123
Colorado	319	427	246	317	305	193
Connecticut	952	596	298	28	27	26
Delaware	2,727	1,191	1,291	1,742	939	2,657
District of Columbia	0	0	0	0	0	0
Florida	28,343	31,478	21,801	15,876	13,992	16,097
Georgia	1,011	1,001	61	98	15	13
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	4,210	2,565	2,103	856	421	1,296
Indiana	746	507	248	233	337	373
Iowa	546	436	289	274	162	176
Kansas	4,179	1,669	728	726	701	1,568
Kentucky	236	237	139	119	56	186
Louisiana	32,610	27,082	13,556	15,080	14,146	14,863
Maine	0	0	0	0	0	0
Maryland	1,279	981	220	126	69	109
Massachusetts	3,620	2,446	2,108	1,485	1,435	952
Michigan	3,066	2,617	2,011	2,100	2,214	2,981
Minnesota	699	273	342	351	200	229
Mississippi	12,011	8,495	4,734	3,311	2,838	3,868
Missouri	1,012	803	184	111	134	146
Montana	52	8	4	37	23	43
Nebraska	466	321	202	139	80	123
Nevada	4,807	4,277	2,737	2,474	2,488	3,113
New Hampshire	0	0	0	0	0	0
New Jersey	4,211	1,987	647	483	1,291	2,171
New Mexico	2,899	3,071	1,997	2,383	861	1,883
New York	16,792	13,150	5,595	5,703	3,392	3,514
North Carolina	803	378	3	3	9	35
North Dakota	1	0	0	0	0	0
Ohio	477	427	46	58	90	187
Oklahoma	17,720	12,330	7,340	7,490	6,910	8,610
Oregon	0	0	0	0	0	0
Pennsylvania	592	507	262	225	120	344
Rhode Island	2,047	2,013	1,700	2,395	1,523	1,674
South Carolina	279	189	9	9	5	4
South Dakota	174	2	3	6	10	1
Tennessee	78	15	0	29	0	0
Texas	115,308	116,249	72,922	72,619	61,382	71,184
Utah	228	8	128	137	151	138
Vermont	4	0	2	0	0	1
Virginia	1,534	861	107	201	505	998
Washington	0	1	0	57	26	65
West Virginia	21	9	16	13	16	33
Wisconsin	773	697	229	353	271	436
Wyoming	0	0	0	0	5	7
Total	301,759	266,809	169,547	156,102	136,567	167,628

See footnotes at end of table.

**Table 17. Natural Gas Deliveries to Electric Utility Consumers,
by State, 1994-1996**
(Million Cubic Feet) — Continued

State	1995					
	Total	December	November	October	September	August
Alabama	7,377	107	226	260	418	2,562
Alaska	29,809	2,528	2,436	2,350	2,536	2,706
Arizona	18,846	510	502	375	2,738	5,286
Arkansas	32,750	813	622	2,059	4,391	7,508
California	394,698	23,944	30,266	34,916	50,120	58,660
Colorado	3,798	259	230	341	377	358
Connecticut	19,310	44	928	1,000	1,077	2,352
Delaware	27,010	1,964	2,478	2,356	2,341	3,165
District of Columbia	0	0	0	0	0	0
Florida	318,854	17,056	25,857	30,486	33,168	32,954
Georgia	7,834	17	63	184	235	3,049
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	39,143	2,782	3,216	1,456	1,228	8,989
Indiana	8,349	671	623	246	166	2,386
Iowa	3,614	145	129	215	278	1,196
Kansas	27,945	1,090	1,050	629	2,281	8,016
Kentucky	866	170	124	30	23	87
Louisiana	322,923	16,716	21,614	26,302	31,977	41,725
Maine	0	0	0	0	0	0
Maryland	18,833	140	435	632	2,163	5,936
Massachusetts	64,623	1,732	3,431	5,658	7,340	9,537
Michigan	35,784	3,540	3,217	2,521	2,961	5,909
Minnesota	8,292	255	456	562	719	1,700
Mississippi	111,229	6,426	5,181	6,374	10,892	16,129
Missouri	12,830	234	500	416	808	3,949
Montana	388	27	32	16	26	141
Nebraska	3,059	265	269	246	198	782
Nevada	40,134	2,686	2,463	3,138	4,522	5,977
New Hampshire	2,248	0	9	2	122	547
New Jersey	45,897	2,199	2,576	2,133	3,362	10,598
New Mexico	31,924	1,842	2,025	1,917	2,286	3,692
New York	246,265	8,774	16,690	19,517	22,888	35,249
North Carolina	3,146	66	114	194	123	1,509
North Dakota	1	0	0	0	0	0
Ohio	7,459	315	402	179	555	2,794
Oklahoma	154,114	9,251	7,826	8,438	13,154	25,658
Oregon	19,136	455	1,700	2,940	2,940	2,932
Pennsylvania	24,697	267	380	1,527	2,953	5,002
Rhode Island	5,002	2,061	1,571	426	545	284
South Carolina	6,615	12	10	1,064	1,441	1,897
South Dakota	931	26	35	32	26	449
Tennessee	2,055	0	0	0	49	1,251
Texas	1,047,274	61,416	55,785	75,055	97,312	137,556
Utah	8,707	188	452	865	1,245	1,270
Vermont	138	48	13	3	2	2
Virginia	16,414	761	1,209	1,191	1,223	2,171
Washington	6,356	12	268	1,134	2,554	1,062
West Virginia	410	23	40	45	18	29
Wisconsin	9,289	610	465	243	304	3,004
Wyoming	128	8	11	8	10	8
Total	3,196,507	172,457	197,926	239,680	316,096	468,021

See footnotes at end of table.

**Table 17. Natural Gas Deliveries to Electric Utility* Consumers,
by State, 1994-1996**
(Million Cubic Feet) — Continued

State	1995					
	July	June	May	April	March	February
Alabama	1,830	623	293	209	321	244
Alaska	2,333	2,319	2,615	2,335	2,580	2,170
Arizona	3,821	1,027	707	1,002	969	783
Arkansas	5,596	4,070	3,167	2,243	1,738	239
California	39,441	18,651	18,187	25,880	30,550	26,826
Colorado	326	447	220	282	419	209
Connecticut	2,810	2,202	2,414	1,645	1,969	1,353
Delaware	3,692	1,730	1,236	2,145	2,358	1,782
District of Columbia	0	0	0	0	0	0
Florida	32,565	33,287	31,358	29,875	26,012	12,634
Georgia	2,478	706	629	231	82	82
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	5,877	4,308	1,406	1,759	4,034	2,472
Indiana	1,581	616	432	167	362	547
Iowa	609	355	123	246	126	78
Kansas	6,111	2,590	1,212	1,307	1,209	1,214
Kentucky	66	33	95	26	54	79
Louisiana	40,415	35,649	28,330	22,135	21,518	16,135
Maine	0	0	0	0	0	0
Maryland	4,585	1,568	538	535	448	1,191
Massachusetts	9,270	8,232	7,090	6,731	3,824	871
Michigan	3,120	3,035	2,465	2,752	2,895	1,736
Minnesota	1,070	931	729	464	356	577
Mississippi	14,618	12,311	10,347	6,102	7,581	7,331
Missouri	2,974	1,150	689	749	803	390
Montana	60	47	14	3	9	4
Nebraska	483	211	113	134	205	68
Nevada	5,316	3,222	3,051	1,928	2,922	3,000
New Hampshire	627	528	395	0	0	0
New Jersey	10,649	3,563	2,112	1,194	3,007	2,224
New Mexico	3,727	2,839	2,986	3,044	2,450	2,660
New York	34,476	25,784	20,520	16,880	18,594	12,171
North Carolina	532	158	195	168	74	13
North Dakota	0	0	0	0	0	0
Ohio	1,745	504	178	251	225	246
Oklahoma	22,707	15,774	12,758	12,326	10,292	6,975
Oregon	1,132	0	230	842	1,582	1,536
Pennsylvania	4,538	3,276	1,161	1,122	1,579	1,535
Rhode Island	108	7	0	0	0	0
South Carolina	825	471	185	7	695	3
South Dakota	230	98	7	6	1	19
Tennessee	682	73	0	0	0	0
Texas	129,947	103,034	97,077	79,847	90,229	55,302
Utah	146	175	848	900	904	771
Vermont	5	4	3	2	19	13
Virginia	1,408	213	1,248	1,093	1,639	2,128
Washington	88	21	8	8	108	228
West Virginia	23	36	39	80	20	23
Wisconsin	2,084	1,123	204	228	336	404
Wyoming	32	4	7	7	14	6
Total	406,758	297,007	257,620	228,889	245,111	168,274

* 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 18. Natural Gas Deliveries to All Consumers, by State, 1994-1996
(Million Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996		
				September	August	July
Alabama	223,971	214,849	197,172	20,332	19,593	20,743
Alaska	107,834	102,773	89,047	10,694	11,277	10,709
Arizona	77,012	81,139	82,844	7,031	9,584	8,229
Arkansas	177,136	180,847	174,276	14,489	16,427	16,407
California	1,249,098	1,391,459	1,496,570	138,510	158,895	138,210
Colorado	NA	188,263	177,036	NA	13,636	NA
Connecticut	92,974	99,957	89,330	7,524	7,714	6,750
Delaware	41,188	45,680	35,132	4,108	3,913	3,865
District of Columbia	25,108	24,344	23,862	1,173	1,129	1,216
Florida	371,348	383,538	268,820	48,884	48,550	44,583
Georgia	269,006	252,387	242,325	20,839	22,140	21,421
Hawaii	2,026	2,106	2,086	211	204	216
Idaho	44,602	41,577	35,986	3,587	3,040	3,344
Illinois	772,883	727,068	733,203	42,724	40,201	40,334
Indiana	NA	375,032	378,598	NA	25,801	26,095
Iowa	182,130	172,142	172,924	11,705	11,855	11,529
Kansas	231,898	210,976	248,828	15,609	22,086	20,443
Kentucky	147,150	133,872	133,049	9,468	9,138	8,482
Louisiana	1,061,638	1,102,950	1,018,808	117,049	125,048	126,442
Maine	3,879	3,654	3,638	271	253	226
Maryland	NA	140,505	136,940	NA	11,577	9,317
Massachusetts	256,031	271,128	255,769	24,605	22,795	17,329
Michigan	726,185	664,110	667,655	43,754	40,163	41,232
Minnesota	246,065	230,641	221,142	14,049	12,873	13,574
Mississippi	NA	190,800	156,261	NA	20,596	19,342
Missouri	211,957	198,578	202,007	9,872	11,484	10,217
Montana	38,350	35,787	31,250	2,517	2,217	2,125
Nebraska	NA	NA	93,098	NA	8,551	NA
Nevada	92,937	85,203	76,458	9,434	10,882	11,277
New Hampshire	13,533	14,962	14,349	719	694	656
New Jersey	427,825	431,616	445,534	27,969	29,780	28,687
New Mexico	82,351	78,988	74,655	6,098	7,364	8,322
New York	NA	844,035	752,387	NA	63,917	NA
North Carolina	153,806	144,241	135,202	11,915	11,647	11,294
North Dakota	22,395	20,887	20,142	1,135	925	942
Ohio	661,808	610,587	612,891	35,016	35,443	34,936
Oklahoma	352,409	355,937	347,675	33,312	39,242	39,919
Oregon	114,357	101,309	97,611	13,575	12,666	11,471
Pennsylvania	512,793	480,601	488,765	28,704	31,894	27,758
Rhode Island	NA	48,300	52,941	NA	5,671	4,849
South Carolina	106,569	111,942	103,428	9,779	9,420	9,297
South Dakota	NA	21,993	19,848	NA	1,188	1,171
Tennessee	186,352	172,674	172,257	14,241	13,443	12,963
Texas	NA	2,573,739	2,532,050	NA	315,797	324,470
Utah	90,601	90,806	78,199	7,821	6,544	6,510
Vermont	5,343	5,150	5,570	299	272	227
Virginia	167,990	173,351	167,611	10,930	12,381	12,873
Washington	166,725	153,781	144,335	15,951	15,489	12,883
West Virginia	86,589	81,044	80,702	6,749	5,913	6,024
Wisconsin	NA	256,827	253,584	NA	15,625	NA
Wyoming	NA	NA	56,872	NA	NA	NA
Total	14,866,885	14,465,507	14,100,722	1,256,207	1,331,703	1,289,534

See footnotes at end of table.

Table 18. Natural Gas Deliveries to All Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1996					
	June	May	April	March	February	January
Alabama	19,389	22,385	26,632	29,281	33,118	32,499
Alaska	10,776	10,926	12,065	14,222	14,370	12,796
Arizona	7,239	5,975	7,607	9,180	9,858	12,308
Arkansas	15,550	15,597	20,877	23,458	26,518	27,813
California	119,352	118,794	124,638	136,932	148,523	165,245
Colorado	14,006	18,364	26,966	31,107	37,595	35,307
Connecticut	6,428	7,613	11,035	14,152	15,422	16,336
Delaware	4,590	3,286	4,160	5,467	5,148	6,651
District of Columbia	1,412	2,050	3,623	3,939	5,070	5,495
Florida	43,133	48,641	38,893	33,759	31,778	33,126
Georgia	21,246	23,976	30,727	40,569	39,687	48,401
Hawaii	220	215	238	234	241	247
Idaho	3,719	4,536	5,166	6,416	7,356	7,439
Illinois	43,687	65,030	90,570	131,207	147,434	171,695
Indiana	50,193	23,801	48,030	63,320	68,685	78,793
Iowa	12,930	14,643	21,463	29,517	31,838	36,652
Kansas	19,938	18,320	23,583	31,619	36,257	44,044
Kentucky	11,543	10,461	16,338	24,378	25,967	31,376
Louisiana	126,278	118,910	112,844	114,401	110,488	110,179
Maine	278	339	423	652	693	743
Maryland	9,723	11,652	16,352	22,396	24,298	27,557
Massachusetts	18,989	22,456	30,966	38,096	39,621	41,174
Michigan	46,321	68,152	93,033	123,153	131,901	138,475
Minnesota	15,968	21,334	31,147	42,365	44,184	50,570
Mississippi	20,530	17,872	16,940	17,137	19,284	20,073
Missouri	11,455	15,948	26,353	35,478	43,511	47,640
Montana	2,487	3,594	4,732	5,934	7,379	7,365
Nebraska	NA	NA	NA	NA	NA	NA
Nevada	9,784	9,818	8,913	10,245	10,560	12,024
New Hampshire	814	1,252	1,752	2,350	2,595	2,701
New Jersey	29,465	34,945	52,628	64,143	76,135	84,073
New Mexico	8,064	6,694	9,079	9,909	11,189	15,632
New York	NA	NA	NA	NA	NA	NA
North Carolina	12,025	13,678	18,923	21,512	25,453	27,358
North Dakota	1,281	2,170	3,212	3,769	4,599	4,362
Ohio	47,571	53,242	80,030	111,938	121,775	141,857
Oklahoma	36,034	33,643	34,163	40,561	45,614	49,920
Oregon	9,482	11,872	10,846	13,312	15,649	15,484
Pennsylvania	32,374	41,927	60,662	83,838	91,367	114,269
Rhode Island	5,299	6,195	6,613	8,498	8,208	9,559
South Carolina	9,916	10,794	13,110	13,543	14,966	15,743
South Dakota	NA	1,932	2,978	5,043	4,614	4,795
Tennessee	13,556	14,505	21,844	26,568	33,026	36,206
Texas	309,789	323,402	292,110	310,615	293,918	323,159
Utah	5,643	6,988	10,578	12,315	17,039	17,162
Vermont	339	497	685	962	1,015	1,049
Virginia	11,110	13,467	17,731	28,670	29,425	31,401
Washington	12,980	16,524	18,409	22,245	26,815	25,428
West Virginia	5,790	7,267	10,514	13,456	14,859	16,018
Wisconsin	NA	24,609	34,119	48,084	51,803	59,172
Wyoming	NA	NA	NA	NA	NA	NA
Total	1,315,762	1,420,676	1,674,863	2,027,453	2,163,024	2,387,662

See footnotes at end of table.

Table 18. Natural Gas Deliveries to All Consumers, by State, 1994-1996
(Million Cubic Feet) — Continued

State	1995					
	Total	December	November	October	September	August
Alabama	287,239	28,963	23,381	20,043	18,901	22,417
Alaska	134,996	12,726	10,307	9,190	11,378	14,831
Arizona	101,731	8,762	6,361	5,351	7,399	10,089
Arkansas	240,071	24,157	18,503	16,563	17,190	20,983
California	1,839,721	163,271	141,117	143,028	150,812	158,235
Colorado	247,180	25,542	20,007	13,350	11,621	11,284
Connecticut	131,130	13,952	10,343	6,867	6,053	7,325
Delaware	60,658	5,333	5,165	4,478	4,341	5,167
District of Columbia	32,735	4,773	2,362	1,247	1,166	1,123
Florida	507,329	38,384	41,005	44,326	46,317	46,589
Georgia	362,734	45,832	37,428	27,085	18,998	23,083
Hawaii	2,773	223	221	223	224	221
Idaho	57,407	6,178	5,305	4,328	3,164	2,891
Illinois	1,065,238	150,677	122,315	65,148	43,840	47,059
Indiana	527,719	67,428	52,765	32,397	25,643	26,751
Iowa	251,262	34,779	27,190	17,145	12,417	12,414
Kansas	286,430	36,741	22,381	16,329	17,252	26,376
Kentucky	196,392	27,754	22,164	12,598	9,069	8,591
Louisiana	1,443,515	111,753	111,708	117,082	120,846	131,803
Maine	5,333	709	593	376	272	256
Maryland	191,272	23,769	16,788	10,160	9,699	13,982
Massachusetts	360,429	38,915	29,250	21,124	21,269	23,772
Michigan	936,466	127,454	90,578	54,297	42,277	42,421
Minnesota	333,900	46,101	35,421	21,711	14,748	14,677
Mississippi	242,887	20,617	16,534	14,668	18,231	24,998
Missouri	271,956	36,814	23,737	12,821	10,631	13,080
Montana	51,660	6,443	5,486	3,935	2,527	2,295
Nebraska	NA	NA	NA	NA	NA	8,600
Nevada	110,273	9,616	7,869	7,477	8,850	10,303
New Hampshire	19,877	2,329	1,629	957	844	1,201
New Jersey	588,315	76,194	50,145	30,355	30,005	36,339
New Mexico	105,796	11,879	9,301	5,555	6,008	7,625
New York	1,131,325	122,091	98,317	68,756	62,723	76,209
North Carolina	196,626	22,610	17,125	12,641	11,481	12,870
North Dakota	29,371	4,046	2,905	1,522	996	898
Ohio	877,112	123,470	90,931	51,937	36,514	36,657
Oklahoma	456,674	39,265	32,367	28,987	32,034	46,313
Oregon	138,545	13,661	12,166	11,392	9,853	10,405
Pennsylvania	680,495	89,477	72,297	38,110	30,890	32,096
Rhode Island	69,520	10,522	7,171	3,525	3,877	4,258
South Carolina	148,980	13,776	12,196	11,065	11,040	11,710
South Dakota	31,164	4,008	3,215	1,943	1,164	1,448
Tennessee	239,100	28,212	23,469	14,742	13,796	13,761
Texas	3,387,065	293,668	253,956	265,673	272,935	308,457
Utah	126,981	14,931	11,120	10,024	7,419	6,586
Vermont	7,268	1,065	653	400	266	267
Virginia	239,616	31,620	21,147	13,455	13,321	17,649
Washington	211,791	22,286	19,597	16,021	15,141	13,415
West Virginia	113,908	13,999	11,239	7,619	5,952	5,757
Wisconsin	376,291	53,338	42,409	23,685	16,609	17,229
Wyoming	NA	NA	NA	NA	NA	4,275
Total	19,660,161	2,136,187	1,719,670	1,336,124	1,249,730	1,397,041

See footnotes at end of table.

Table 18. Natural Gas Deliveries to All Consumers, by State, 1994-1996

(Million Cubic Feet) — Continued

State	1995					
	July	June	May	April	March	February
Alabama	21,383	20,091	20,461	22,115	29,126	30,309
Alaska	11,185	12,175	8,820	10,392	11,846	10,379
Arizona	8,619	6,491	7,236	8,499	9,373	10,856
Arkansas	18,603	17,200	17,692	18,085	23,062	22,881
California	144,757	124,518	141,051	154,312	159,323	151,996
Colorado	12,080	17,218	21,503	23,069	27,486	30,281
Connecticut	8,234	7,779	9,964	12,362	16,222	16,171
Delaware	5,554	3,959	4,177	5,352	6,203	5,519
District of Columbia	1,250	1,356	1,971	2,907	4,328	5,460
Florida	46,721	46,941	46,431	45,636	43,150	30,047
Georgia	22,122	21,007	22,710	26,704	32,421	40,597
Hawaii	234	238	234	232	237	233
Idaho	3,047	3,849	4,419	5,059	5,688	6,005
Illinois	43,351	43,714	54,427	85,099	110,727	140,306
Indiana	25,035	25,553	32,681	42,586	55,192	66,452
Iowa	11,704	11,806	15,908	21,295	23,620	29,145
Kansas	21,191	14,863	19,685	21,030	26,940	27,102
Kentucky	8,291	8,683	11,145	13,232	20,377	26,318
Louisiana	131,556	123,249	125,404	115,722	116,571	111,810
Maine	231	260	347	474	550	649
Maryland	12,385	9,871	11,213	14,731	19,639	25,825
Massachusetts	23,915	25,252	26,306	34,707	39,193	39,671
Michigan	38,748	44,061	61,001	86,986	107,935	122,881
Minnesota	13,977	14,446	18,879	28,283	35,314	42,781
Mississippi	23,005	21,026	19,878	15,818	21,349	22,485
Missouri	12,149	11,608	16,026	20,383	31,647	40,585
Montana	2,303	2,545	3,659	4,624	5,789	5,290
Nebraska	8,481	6,070	7,953	9,786	12,441	13,709
Nevada	9,813	8,130	8,938	8,161	9,297	10,553
New Hampshire	1,338	1,347	1,551	1,827	2,224	2,307
New Jersey	36,550	29,961	35,930	48,990	66,380	75,167
New Mexico	6,960	6,953	8,162	8,881	9,092	10,526
New York	78,400	71,433	78,882	99,302	124,621	127,189
North Carolina	11,112	11,840	12,495	15,366	20,829	24,030
North Dakota	1,045	1,273	1,906	2,893	3,634	3,997
Ohio	34,751	36,383	49,791	72,777	97,184	123,379
Oklahoma	40,170	36,169	34,551	35,227	42,581	39,783
Oregon	8,270	7,480	9,474	11,232	13,542	13,430
Pennsylvania	31,890	32,426	39,436	58,069	76,056	91,689
Rhode Island	3,859	4,000	5,335	6,483	7,396	7,111
South Carolina	9,728	11,205	10,887	11,636	16,439	14,748
South Dakota	1,312	1,460	2,000	2,891	3,475	4,006
Tennessee	12,798	13,722	12,624	18,435	24,929	30,986
Texas	322,408	275,621	298,149	274,195	295,265	249,620
Utah	5,285	6,249	8,937	11,165	12,701	14,059
Vermont	274	328	451	739	891	967
Virginia	15,572	12,074	15,174	17,515	23,366	29,222
Washington	10,872	11,716	13,765	18,396	21,749	21,793
West Virginia	5,347	5,713	7,514	9,480	12,129	14,932
Wisconsin	15,075	15,254	20,587	32,181	39,823	48,542
Wyoming	4,203	5,246	5,800	6,361	6,316	6,716
Total	1,347,142	1,251,815	1,413,521	1,621,680	1,925,667	2,040,493

NA = Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. 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.

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

Table 19. Average City Gate Price, by State, 1994-1996
(Dollars per Thousand Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996				
				September	August	July	June	May
Alabama	3.38	2.87	3.52	3.62	4.11	4.04	3.78	3.52
Alaska	1.58	1.68	1.63	1.57	1.54	1.54	1.57	1.56
Arizona	2.39	2.13	2.71	3.02	3.58	2.94	2.57	2.46
Arkansas	2.55	2.30	2.63	2.29	2.59	2.76	2.82	2.59
California	2.37	2.02	2.66	2.35	2.78	2.43	2.56	2.14
Colorado	NA	2.72	3.53	NA	NA	NA	2.40	2.50
Connecticut	5.07	4.84	4.02	4.65	4.42	4.75	5.03	4.94
Delaware	3.58	2.62	3.06	3.03	3.80	4.22	3.44	3.18
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.62	2.59	2.90	3.03	3.57	3.58	3.31	3.39
Georgia	3.66	2.99	3.64	3.32	4.00	4.20	3.66	3.74
Hawaii	5.91	5.16	4.80	6.00	6.05	6.34	6.27	6.32
Idaho	2.26	2.29	2.62	2.72	2.48	5.26	3.39	2.28
Illinois	3.17	2.64	3.14	2.80	3.25	3.69	3.12	2.83
Indiana	NA	2.87	3.02	NA	2.70	3.30	3.10	2.56
Iowa	3.37	2.87	3.32	4.28	7.96	7.45	4.61	4.19
Kansas	2.90	2.29	3.01	2.65	3.08	3.57	3.51	3.22
Kentucky	3.23	2.87	3.19	3.16	3.04	3.07	3.08	3.83
Louisiana	3.03	2.09	2.65	2.26	2.69	3.01	2.71	2.65
Maine	4.40	3.54	3.13	3.91	4.35	5.04	5.51	5.32
Maryland	NA	2.90	3.55	NA	NA	6.04	5.63	4.35
Massachusetts	3.97	3.57	4.21	5.36	5.68	5.53	6.05	4.40
Michigan	2.84	2.59	2.70	2.31	2.98	2.87	2.64	2.69
Minnesota	2.91	2.51	2.91	2.91	3.32	4.13	2.88	2.81
Mississippi	3.19	2.35	2.91	2.99	2.89	3.10	2.90	2.70
Missouri	3.05	2.77	3.24	4.14	5.12	4.82	4.51	3.86
Montana	2.92	3.18	3.65	3.24	4.11	3.60	3.05	2.81
Nebraska	2.87	2.51	3.12	2.69	4.83	3.30	3.50	3.41
Nevada	2.98	2.86	3.45	3.22	3.80	3.44	3.37	3.68
New Hampshire	4.16	3.39	3.59	3.86	4.47	5.03	4.64	4.09
New Jersey	3.72	3.28	3.52	3.51	3.71	3.77	3.82	4.61
New Mexico	1.51	1.45	2.09	1.66	2.07	1.60	1.40	1.22
New York	3.27	2.36	3.13	3.00	3.15	3.13	3.17	3.18
North Carolina	3.71	2.98	3.40	3.67	3.94	3.75	3.75	3.69
North Dakota	2.75	2.66	3.30	2.54	3.44	2.90	2.78	2.64
Ohio	4.16	4.02	3.50	6.11	5.58	4.53	8.17	4.87
Oklahoma	2.55	2.61	2.49	2.53	2.65	2.51	2.40	2.61
Oregon	2.33	2.59	2.79	2.98	3.15	3.89	2.11	2.40
Pennsylvania	3.85	3.20	3.53	4.25	5.07	5.40	4.96	3.94
Rhode Island	NA	3.61	4.44	NA	6.51	7.46	0.53	5.06
South Carolina	3.86	3.29	3.78	3.53	3.87	4.01	3.49	3.96
South Dakota	NA	2.99	3.52	NA	6.37	4.74	3.96	2.92
Tennessee	3.87	2.65	2.73	3.39	3.67	3.48	3.67	3.72
Texas	3.07	2.93	2.99	2.95	3.06	3.04	2.91	2.81
Utah	2.16	3.18	3.20	2.22	2.08	2.15	2.12	1.93
Vermont	2.88	2.71	3.24	2.36	2.69	3.68	3.01	2.66
Virginia	3.74	2.91	3.51	3.40	4.42	4.52	4.93	4.00
Washington	2.33	2.23	2.40	2.71	3.21	3.57	3.39	2.30
West Virginia	3.30	2.85	3.37	3.77	4.29	3.66	3.28	3.89
Wisconsin	3.19	2.90	3.62	3.87	4.71	4.65	4.81	3.42
Wyoming	NA	NA	3.17	NA	NA	NA	NA	NA
Total	3.21	2.79	3.16	3.07	3.50	3.51	3.33	3.18

See footnotes at end of table.

Table 19. Average City Gate Price, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1996				1995			
	April	March	February	January	Total	December	November	October
Alabama	3.27	3.15	3.35	3.13	2.89	2.83	2.84	3.52
Alaska	1.58	1.60	1.60	1.56	1.67	1.67	1.66	1.63
Arizona	2.05	1.97	2.36	2.08	2.10	1.86	2.19	2.24
Arkansas	2.50	2.57	2.52	2.52	2.32	2.46	2.28	2.19
California	2.22	2.42	2.25	2.29	2.03	1.90	2.15	2.14
Colorado	2.93	2.16	2.18	2.08	2.65	2.60	2.56	2.41
Connecticut	5.22	4.66	5.37	5.55	4.70	4.60	4.13	4.27
Delaware	3.75	4.20	3.43	3.27	2.70	3.01	2.89	2.81
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.97	3.83	3.60	3.84	2.74	3.32	3.05	2.75
Georgia	3.51	3.82	3.36	3.71	2.96	2.95	2.80	3.00
Hawaii	5.74	5.53	5.49	5.60	5.20	4.65	5.43	5.90
Idaho	2.21	2.12	2.08	1.98	2.18	1.98	2.14	1.83
Illinois	2.93	3.49	3.73	2.66	2.59	2.53	2.32	2.94
Indiana	2.90	3.06	3.32	3.11	2.84	2.82	2.67	2.96
Iowa	3.13	2.82	3.03	2.62	2.82	2.73	2.63	2.84
Kansas	3.23	2.70	2.67	2.66	2.36	2.44	2.38	2.82
Kentucky	3.50	3.29	3.05	3.19	2.80	2.87	2.45	2.61
Louisiana	3.06	3.29	3.24	3.58	2.21	2.78	2.44	2.23
Maine	5.34	4.01	3.89	3.95	3.35	3.08	3.03	2.72
Maryland	4.01	3.70	3.23	3.82	2.87	2.68	2.71	3.44
Massachusetts	3.97	3.32	3.17	3.65	3.53	3.35	3.14	4.13
Michigan	2.80	3.11	2.91	3.14	2.61	2.81	2.56	2.54
Minnesota	2.72	2.79	2.78	2.90	2.52	2.65	2.50	2.43
Mississippi	3.37	3.36	3.07	3.49	2.53	3.23	2.71	2.77
Missouri	3.20	2.61	2.59	2.52	2.73	2.57	2.55	3.21
Montana	3.18	2.52	2.98	2.83	3.01	2.72	2.65	2.68
Nebraska	3.04	2.71	2.45	2.66	2.49	2.34	2.43	2.80
Nevada	3.32	2.64	2.75	2.51	2.73	2.20	2.62	2.64
New Hampshire	4.09	4.06	3.99	4.14	3.39	3.60	3.44	2.89
New Jersey	3.75	3.15	3.49	4.09	3.34	3.40	3.45	3.74
New Mexico	1.18	1.40	1.69	1.53	1.46	1.44	1.58	1.42
New York	3.40	3.34	3.19	3.42	2.47	2.98	2.61	2.53
North Carolina	3.95	3.60	3.66	3.65	2.95	2.95	2.77	2.98
North Dakota	2.62	2.45	2.82	2.94	2.58	2.55	2.25	2.31
Ohio	4.06	3.90	3.80	3.81	3.84	3.46	3.34	4.01
Oklahoma	2.53	2.58	2.60	2.46	2.52	2.27	2.24	1.97
Oregon	2.27	2.19	1.96	2.06	2.42	1.71	2.36	2.41
Pennsylvania	4.66	3.62	3.28	3.26	3.09	2.95	2.63	3.22
Rhode Island	3.53	3.85	3.92	3.28	3.57	3.34	3.13	4.54
South Carolina	3.96	3.94	3.77	4.01	3.25	3.27	3.16	3.04
South Dakota	2.63	2.84	2.79	2.54	2.88	2.68	2.62	2.73
Tennessee	3.28	3.29	4.56	4.50	2.71	3.01	2.68	2.69
Texas	3.13	3.05	3.13	3.20	2.95	3.06	2.97	2.75
Utah	1.98	2.34	2.10	2.27	2.88	2.43	2.46	2.18
Vermont	3.10	2.83	2.82	2.93	2.61	2.38	2.19	2.89
Virginia	3.38	3.58	3.36	3.88	2.92	3.10	2.57	3.40
Washington	2.23	1.99	2.12	1.98	2.18	2.07	2.14	2.02
West Virginia	3.26	3.24	3.48	2.60	2.85	3.04	2.26	3.48
Wisconsin	3.48	2.88	2.78	2.87	2.83	2.75	2.48	2.99
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	3.22	3.17	3.16	3.13	2.78	2.83	2.67	2.83

See footnotes at end of table.

Table 19. Average City Gate Price, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1995							
	September	August	July	June	May	April	March	February
Alabama	3.50	3.20	3.83	3.58	3.34	2.90	2.45	2.60
Alaska	1.64	1.57	1.63	1.60	1.70	1.79	1.66	1.67
Arizona	2.44	2.36	2.20	2.17	2.00	1.78	1.82	2.39
Arkansas	2.01	1.91	2.33	2.25	2.36	2.41	2.29	2.34
California	2.06	2.25	2.18	1.84	2.03	2.12	1.89	1.95
Colorado	2.89	3.84	3.70	2.96	2.41	3.04	2.56	2.70
Connecticut	4.80	5.30	5.54	5.11	5.28	4.74	4.88	4.73
Delaware	2.85	2.48	1.73	3.38	3.20	3.11	2.47	2.45
District of Columbia	—	—	—	—	—	—	—	—
Florida	2.75	2.47	2.50	2.75	2.53	2.92	2.71	2.39
Georgia	3.49	2.81	2.88	3.16	3.17	2.84	3.45	2.54
Hawaii	5.78	4.25	6.12	5.98	4.38	4.52	5.42	5.14
Idaho	2.79	2.72	2.89	2.43	2.28	2.21	2.23	2.29
Illinois	3.58	3.02	3.45	3.14	3.16	2.40	2.33	2.28
Indiana	3.57	3.18	3.26	3.63	3.11	2.81	2.95	2.35
Iowa	3.41	3.48	3.55	3.39	3.10	2.97	2.78	2.44
Kansas	2.80	2.52	2.19	3.09	2.25	2.18	2.06	2.18
Kentucky	2.51	2.80	2.92	3.18	3.32	3.14	2.95	2.72
Louisiana	2.05	1.90	2.00	2.04	2.10	2.12	2.14	2.05
Maine	3.54	5.13	5.99	5.81	2.72	3.41	2.43	3.50
Maryland	3.95	3.25	3.34	3.88	3.51	2.82	2.68	2.47
Massachusetts	4.78	4.57	4.64	4.58	4.71	3.22	2.98	3.02
Michigan	2.61	2.50	2.41	2.43	2.49	2.46	2.92	2.83
Minnesota	2.63	2.84	2.79	2.91	2.56	2.27	2.49	2.38
Mississippi	2.43	2.21	2.34	2.50	2.46	2.39	2.37	2.24
Missouri	3.85	3.97	4.06	3.99	3.08	2.83	2.48	2.28
Montana	3.01	2.06	2.92	3.38	2.99	2.94	3.10	3.31
Nebraska	2.97	3.11	3.42	2.69	2.68	2.18	2.47	2.20
Nevada	3.23	3.06	3.46	2.92	2.86	2.35	2.62	3.15
New Hampshire	3.33	3.70	4.56	4.40	2.93	2.81	3.19	3.44
New Jersey	3.40	3.72	4.02	3.60	3.21	3.25	3.11	3.09
New Mexico	1.40	1.11	1.50	1.33	1.34	1.53	1.50	1.14
New York	2.32	2.12	2.20	2.40	2.42	2.30	2.31	2.44
North Carolina	3.59	3.24	3.48	3.15	3.06	3.06	2.79	2.77
North Dakota	2.49	1.95	2.25	2.45	2.45	2.43	2.66	2.78
Ohio	3.85	4.87	4.63	4.19	4.12	3.95	3.91	3.76
Oklahoma	1.93	2.39	2.33	2.35	2.46	2.57	2.72	2.72
Oregon	2.96	2.82	3.16	2.69	2.77	2.38	2.41	2.55
Pennsylvania	3.34	3.97	4.04	3.73	3.21	2.94	2.89	2.92
Rhode Island	5.28	5.85	6.46	5.53	4.20	3.25	2.76	2.71
South Carolina	3.63	3.43	3.71	3.74	3.47	3.04	3.07	3.17
South Dakota	3.51	3.93	3.86	3.84	2.99	2.64	2.80	2.80
Tennessee	2.72	2.64	3.10	3.25	2.68	2.69	2.36	2.70
Texas	2.74	2.62	2.63	2.81	2.72	3.19	3.15	3.05
Utah	3.16	2.40	2.56	3.41	2.55	2.48	3.33	4.06
Vermont	3.16	3.04	3.20	3.37	3.56	2.68	2.35	2.40
Virginia	2.22	3.08	3.00	3.46	3.36	2.78	2.81	2.88
Washington	2.06	1.98	1.79	1.93	1.92	2.21	2.44	2.46
West Virginia	3.46	3.13	3.40	2.83	2.99	2.63	2.87	2.56
Wisconsin	3.37	3.71	3.81	4.15	2.81	2.64	2.75	2.61
Wyoming	NA	2.67	2.49	2.64	2.80	2.63	2.84	2.75
Total	2.89	2.87	2.89	2.89	2.80	2.72	2.74	2.71

NA = Not Available.

— = 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 20. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996				
				September	August	July	June	May
Alabama	7.04	6.99	7.25	10.60	10.95	10.74	10.53	8.08
Alaska	3.44	3.65	3.63	3.77	3.82	3.87	3.71	3.53
Arizona	7.55	7.84	7.50	10.03	10.37	9.99	9.32	8.67
Arkansas	5.71	5.64	5.71	7.64	8.27	8.41	7.85	6.72
California	6.46	6.55	6.32	5.93	6.84	8.27	6.98	6.38
Colorado	NA	4.88	4.94	NA	NA	NA	5.10	4.42
Connecticut	9.96	10.06	10.04	10.65	10.69	10.34	9.94	9.62
Delaware	6.86	6.61	7.35	10.51	10.12	10.20	8.86	7.78
District of Columbia	8.61	8.17	8.26	10.37	7.52	7.80	9.02	9.83
Florida	11.20	9.75	9.86	14.22	14.49	13.77	13.63	12.55
Georgia	6.67	6.77	7.30	10.28	10.46	10.93	11.34	10.43
Hawaii	19.75	17.34	16.61	20.57	20.60	20.91	20.22	20.54
Idaho	5.22	5.65	5.37	6.09	6.45	6.33	5.70	5.38
Illinois	5.29	4.88	5.74	8.13	9.25	8.42	8.20	6.76
Indiana	NA	5.67	6.46	NA	8.71	8.45	7.83	6.52
Iowa	5.47	5.23	5.52	9.26	12.82	8.98	7.96	6.26
Kansas	5.60	4.78	5.37	7.15	8.46	7.28	7.70	6.87
Kentucky	5.34	5.32	5.47	7.88	8.43	8.14	7.53	7.24
Louisiana	6.53	5.85	6.20	8.33	8.70	9.29	8.52	8.18
Maine	7.82	7.42	7.95	8.23	8.90	8.57	8.06	8.27
Maryland	NA	6.68	7.07	NA	NA	10.63	9.69	8.38
Massachusetts	8.87	9.06	8.85	9.24	9.50	9.04	7.84	6.95
Michigan	4.82	4.75	5.02	6.45	7.21	7.07	6.45	5.12
Minnesota	5.29	4.76	5.27	6.65	7.66	7.49	6.69	5.76
Mississippi	NA	5.25	5.47	NA	6.19	6.26	6.15	5.96
Missouri	5.89	5.07	5.53	9.53	10.20	9.53	8.45	6.87
Montana	4.88	5.22	5.25	6.22	6.67	6.34	5.32	4.94
Nebraska	5.19	4.79	5.09	7.33	7.56	7.24	6.36	5.65
Nevada	6.24	6.79	6.68	7.91	8.13	7.66	7.04	6.68
New Hampshire	7.04	7.08	7.99	8.19	8.51	8.38	7.23	6.29
New Jersey	7.36	7.28	7.13	8.80	8.95	9.01	8.81	7.16
New Mexico	4.50	5.54	6.53	8.21	7.08	4.44	4.21	11.39
New York	NA	8.40	8.66	NA	NA	10.86	9.83	8.64
North Carolina	7.36	7.07	7.19	12.48	12.77	11.10	11.45	9.04
North Dakota	4.58	4.68	5.31	6.88	7.33	7.10	5.78	4.46
Ohio	5.62	5.61	5.83	8.38	8.94	8.07	7.04	6.31
Oklahoma	5.50	5.55	5.40	9.06	9.46	9.18	8.43	6.87
Oregon	6.29	6.78	7.11	7.78	8.20	7.74	6.93	6.50
Pennsylvania	7.22	7.61	7.40	10.72	10.31	10.24	9.08	8.21
Rhode Island	NA	7.90	9.14	NA	11.29	11.05	9.82	8.39
South Carolina	7.49	7.79	7.51	9.52	9.99	9.84	9.09	8.12
South Dakota	NA	5.09	5.50	NA	11.79	8.33	6.65	5.65
Tennessee	6.36	5.88	6.14	8.54	8.87	8.54	8.40	7.34
Texas	5.71	6.01	5.98	7.73	8.24	7.87	7.21	6.81
Utah	4.43	4.79	5.22	4.15	5.19	4.99	5.40	4.59
Vermont	6.38	6.92	6.91	8.41	8.92	8.73	7.49	6.59
Virginia	7.69	7.53	7.57	11.94	12.50	12.40	10.73	8.78
Washington	5.65	5.96	5.68	6.86	7.17	6.71	6.06	5.71
West Virginia	7.06	7.11	6.52	9.26	10.28	9.77	9.21	7.55
Wisconsin	NA	5.87	6.43	5.76	NA	NA	NA	5.56
Wyoming	NA	NA	5.17	NA	NA	NA	NA	NA
Total	6.23	6.21	6.45	7.87	8.56	8.51	7.75	6.80

See footnotes at end of table.

Table 20. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1996				1995			
	April	March	February	January	Total	December	November	October
Alabama	6.87	6.82	6.33	5.97	6.86	5.97	6.61	8.86
Alaska	3.40	3.34	3.30	3.32	3.63	3.51	3.60	3.76
Arizona	7.57	6.97	6.80	6.60	7.82	7.04	8.18	9.33
Arkansas	5.44	5.40	5.25	5.22	5.48	4.46	5.65	6.99
California	6.00	6.20	6.32	6.47	6.42	5.92	5.78	6.66
Colorado	4.20	4.10	4.02	4.02	4.80	4.29	4.52	5.24
Connecticut	10.06	9.80	9.85	10.00	10.00	9.46	9.96	11.06
Delaware	6.70	6.38	6.25	6.32	6.60	6.09	6.83	8.27
District of Columbia	10.18	8.96	8.42	7.37	8.03	7.26	7.74	9.62
Florida	10.95	10.55	9.93	9.61	9.85	9.19	10.60	12.16
Georgia	7.30	5.54	5.97	5.06	6.18	4.98	4.79	6.72
Hawaii	19.29	19.21	18.82	18.20	17.55	18.80	17.92	17.89
Idaho	5.28	5.06	4.98	4.97	5.59	5.29	5.46	5.77
Illinois	5.51	4.91	4.55	4.24	4.66	4.18	4.10	4.82
Indiana	5.73	5.07	4.85	4.68	5.37	4.55	4.67	5.67
Iowa	5.13	4.82	4.86	4.51	5.09	4.89	4.56	5.53
Kansas	5.77	5.31	5.17	4.99	4.91	5.04	5.22	5.73
Kentucky	5.13	5.11	4.71	4.82	5.05	4.52	4.27	5.94
Louisiana	7.00	5.64	5.44	6.11	6.01	6.14	6.33	7.68
Maine	8.27	7.88	7.78	7.02	7.32	7.01	7.21	7.17
Maryland	7.19	6.99	6.83	6.47	6.62	6.19	6.50	7.72
Massachusetts	9.42	9.02	9.01	9.00	9.04	8.86	9.53	8.24
Michigan	4.72	4.37	4.53	4.45	4.72	4.49	4.64	5.23
Minnesota	5.37	4.96	4.87	4.94	4.80	4.80	4.82	5.28
Mississippi	5.46	5.36	4.75	5.26	5.28	5.18	5.47	6.43
Missouri	5.71	5.47	5.31	5.11	5.16	5.10	5.45	6.71
Montana	4.71	4.65	4.59	4.66	5.15	4.80	4.93	5.48
Nebraska	5.12	4.94	4.73	4.78	4.83	4.74	4.96	5.84
Nevada	6.22	5.86	5.76	5.64	6.76	5.97	6.92	8.05
New Hampshire	5.89	7.31	7.19	7.03	7.16	7.18	7.77	7.24
New Jersey	7.58	7.12	7.06	7.01	7.27	7.03	7.20	8.29
New Mexico	4.60	4.54	4.16	3.42	5.04	3.55	3.86	5.51
New York	8.22	7.93	8.01	7.73	8.42	7.77	8.70	11.09
North Carolina	7.29	7.52	6.81	6.13	6.93	6.21	6.50	8.94
North Dakota	4.43	4.31	4.20	4.28	4.66	4.29	4.50	6.32
Ohio	5.37	5.33	5.38	4.92	5.46	4.97	5.01	6.10
Oklahoma	5.21	5.09	4.76	4.74	5.56	5.04	5.84	7.32
Oregon	6.34	6.17	5.67	6.05	6.74	6.32	6.75	7.57
Pennsylvania	7.38	6.73	6.68	6.42	7.16	5.60	6.42	8.00
Rhode Island	7.92	8.06	7.88	7.97	8.02	7.89	8.70	9.41
South Carolina	6.97	7.68	7.40	7.02	7.54	6.76	6.84	8.27
South Dakota	5.21	4.36	4.67	4.43	5.05	4.86	5.07	5.05
Tennessee	6.70	6.51	6.04	5.53	5.77	6.26	4.31	6.92
Texas	5.98	5.32	5.06	4.84	5.92	5.23	5.77	7.08
Utah	3.90	4.94	3.97	4.51	4.74	4.72	4.99	4.09
Vermont	6.24	6.09	6.02	5.98	6.82	6.09	6.88	7.92
Virginia	7.53	6.88	7.23	6.83	7.18	6.44	5.55	9.33
Washington	5.59	5.44	5.38	5.41	5.89	5.57	5.68	6.26
West Virginia	6.94	6.74	6.69	6.67	7.05	6.67	6.91	7.77
Wisconsin	5.90	5.87	5.75	5.90	5.82	5.88	5.74	5.14
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	6.22	5.89	5.78	5.60	6.06	5.54	5.61	6.62

See footnotes at end of table.

Table 20. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1995							
	September	August	July	June	May	April	March	February
Alabama	9.41	9.34	9.06	8.81	8.16	7.67	6.18	6.22
Alaska	3.96	4.14	4.02	3.87	3.72	3.57	3.53	3.53
Arizona	10.04	10.51	9.72	9.12	8.30	7.81	7.61	7.18
Arkansas	7.51	8.01	7.66	7.20	6.46	5.70	5.18	5.02
California	6.90	6.76	6.88	7.11	6.58	6.22	6.28	6.39
Colorado	6.62	6.71	5.96	5.12	4.86	4.78	4.60	4.56
Connecticut	11.11	11.34	11.12	10.65	10.28	9.81	9.81	9.81
Delaware	8.95	8.86	8.64	8.09	7.04	6.53	6.18	6.15
District of Columbia	10.18	7.48	7.22	7.05	9.58	9.19	8.05	7.85
Florida	11.61	12.22	11.89	11.78	11.30	10.29	9.07	8.16
Georgia	7.95	8.70	8.55	8.34	7.54	7.39	7.12	5.76
Hawaii	17.84	17.91	18.04	17.44	17.39	17.30	16.97	16.69
Idaho	6.42	6.69	6.46	6.20	5.25	5.76	5.62	5.54
Illinois	6.07	6.97	6.05	6.57	5.72	4.60	4.44	4.64
Indiana	7.09	7.89	7.63	7.37	6.47	5.63	5.23	5.39
Iowa	7.46	8.85	8.71	9.00	6.04	5.01	4.89	4.69
Kansas	6.46	6.96	6.24	5.94	5.17	4.74	4.32	4.38
Kentucky	7.78	8.30	7.95	8.26	6.06	5.85	4.71	4.68
Louisiana	7.70	7.61	7.88	7.05	6.99	5.95	5.36	5.03
Maine	7.78	8.37	8.23	7.75	6.60	7.70	7.43	7.23
Maryland	8.64	9.23	9.17	8.73	7.23	6.48	6.09	6.11
Massachusetts	9.33	9.85	9.33	8.31	7.20	9.53	9.30	9.08
Michigan	6.16	7.08	6.69	6.04	5.06	4.53	4.43	4.36
Minnesota	6.07	6.57	4.54	6.00	5.11	4.46	4.48	4.49
Mississippi	6.74	6.15	6.31	6.36	6.27	5.65	4.92	4.74
Missouri	8.20	9.03	8.20	7.33	5.29	4.99	4.40	4.45
Montana	6.13	6.57	6.04	5.59	5.28	5.14	5.04	5.01
Nebraska	6.32	6.59	6.35	5.94	5.09	4.71	4.43	4.43
Nevada	8.53	8.57	8.06	7.46	6.89	6.60	6.64	6.38
New Hampshire	7.96	8.73	8.16	7.27	6.12	5.65	7.38	7.33
New Jersey	9.84	9.55	9.28	8.92	7.66	7.01	6.76	6.60
New Mexico	7.26	7.43	8.63	5.76	6.13	5.45	5.61	4.96
New York	11.81	12.00	11.64	10.20	8.70	7.88	7.66	7.66
North Carolina	10.65	11.61	10.54	9.89	8.00	7.12	6.65	6.13
North Dakota	6.69	7.55	6.93	5.86	5.02	4.42	4.29	4.27
Ohio	7.15	7.64	7.41	6.98	5.70	5.39	5.24	5.08
Oklahoma	8.46	8.80	8.20	7.44	6.12	5.72	4.99	4.88
Oregon	8.37	8.57	8.11	7.66	6.40	6.75	6.59	6.56
Pennsylvania	10.11	10.63	10.21	9.43	8.15	7.24	7.06	7.11
Rhode Island	10.45	10.65	11.15	8.33	8.27	7.87	5.46	8.27
South Carolina	8.96	9.48	8.99	8.77	7.87	7.97	7.60	7.48
South Dakota	7.09	8.57	7.62	6.96	5.49	4.75	4.71	4.64
Tennessee	8.26	8.10	7.73	7.44	6.45	6.16	5.57	5.37
Texas	7.71	8.04	7.52	7.36	6.78	6.23	5.65	5.32
Utah	4.68	5.28	5.36	4.96	4.52	4.25	4.94	4.90
Vermont	9.03	9.81	9.35	8.12	7.25	6.67	6.54	6.49
Virginia	10.86	10.94	10.81	10.59	8.47	7.35	6.66	6.93
Washington	7.04	7.26	7.08	6.56	6.19	5.89	5.75	5.72
West Virginia	9.11	10.02	9.95	9.31	7.55	7.02	6.78	6.66
Wisconsin	5.83	6.36	6.39	5.99	5.73	5.81	5.81	5.82
Wyoming	NA	6.16	5.73	5.06	4.82	4.78	4.70	4.62
Total	7.73	8.13	7.82	7.49	6.54	6.06	5.84	5.76

NA = Not Available.

Notes: Data for 1995 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 21. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996				
				September	August	July	June	May
Alabama	6.10	5.88	6.36	6.80	6.87	6.81	6.98	6.40
Alaska	2.28	2.27	2.47	2.00	1.87	2.13	2.19	2.24
Arizona	4.98	5.33	5.23	5.15	5.11	5.06	4.96	4.92
Arkansas	4.50	4.10	4.67	4.86	4.85	4.97	5.11	4.84
California	6.05	6.28	7.52	5.52	5.31	5.56	5.48	5.61
Colorado	NA	4.34	4.36	NA	NA	NA	3.69	3.54
Connecticut	7.34	7.48	7.42	5.90	5.67	5.86	6.45	7.25
Delaware	5.67	5.30	6.18	6.40	6.83	6.88	6.77	6.02
District of Columbia	6.92	6.03	6.21	7.07	5.65	5.60	6.08	6.04
Florida	6.47	5.28	5.60	6.39	6.40	6.46	6.54	6.63
Georgia	5.75	5.48	6.18	5.80	5.81	6.50	6.99	7.00
Hawaii	14.25	12.91	12.35	14.74	15.06	15.46	14.76	14.53
Idaho	4.57	4.85	5.08	4.90	4.91	4.92	4.77	4.77
Illinois	4.83	4.59	5.32	6.24	7.64	7.07	6.66	6.18
Indiana	NA	4.62	5.57	NA	5.84	5.84	5.69	5.27
Iowa	4.38	4.18	4.67	5.65	8.76	6.02	5.15	4.48
Kansas	4.62	3.90	4.29	5.06	6.28	4.00	4.55	4.74
Kentucky	4.80	4.74	4.97	5.89	6.28	5.76	5.57	5.72
Louisiana	5.94	4.98	5.44	5.88	6.10	6.62	6.09	6.53
Maine	7.04	6.56	7.06	6.55	6.57	7.96	6.44	7.22
Maryland	NA	5.03	5.65	NA	NA	6.16	6.16	5.95
Massachusetts	6.69	6.59	6.91	4.84	4.83	5.02	4.74	4.89
Michigan	4.61	4.46	4.71	5.45	6.02	5.85	5.52	4.72
Minnesota	4.45	3.93	4.49	4.26	4.95	4.88	4.67	4.52
Mississippi	NA	4.29	4.63	NA	4.05	4.23	4.24	12.58
Missouri	5.25	4.27	4.99	5.92	6.35	6.00	5.61	5.39
Montana	4.71	4.98	4.93	5.36	5.41	5.26	4.83	4.74
Nebraska	NA	NA	4.29	NA	NA	NA	NA	NA
Nevada	4.90	5.46	5.33	5.14	5.10	4.92	4.92	4.93
New Hampshire	6.52	6.42	7.25	6.14	6.23	6.29	5.91	5.76
New Jersey	7.16	5.59	6.00	4.90	5.12	5.16	5.24	5.59
New Mexico	3.20	4.00	4.92	3.96	3.24	2.67	2.60	3.93
New York	NA	6.21	6.65	NA	NA	NA	NA	NA
North Carolina	6.00	5.27	5.56	6.37	6.35	7.11	5.65	6.22
North Dakota	3.99	3.93	4.65	4.22	4.93	6.39	4.49	3.88
Ohio	5.13	5.01	5.35	6.66	6.87	6.28	5.94	5.60
Oklahoma	4.57	4.51	4.71	5.06	5.07	4.65	4.95	4.93
Oregon	4.89	5.25	5.58	5.13	5.11	5.11	4.85	4.83
Pennsylvania	6.29	6.53	6.51	7.39	7.26	7.24	6.91	6.62
Rhode Island	NA	6.39	7.83	NA	7.76	7.92	7.53	7.12
South Carolina	6.07	6.22	6.05	5.76	5.74	5.69	5.27	5.38
South Dakota	NA	4.05	4.57	NA	8.54	5.68	5.55	4.72
Tennessee	5.81	5.26	5.61	6.10	6.45	5.96	6.13	6.03
Texas	NA	4.06	4.30	NA	NA	3.92	3.90	3.90
Utah	3.28	3.59	3.93	3.07	3.32	3.25	3.34	3.01
Vermont	5.27	5.52	5.67	5.18	5.43	5.44	5.55	5.37
Virginia	5.70	5.19	5.73	6.38	6.56	6.64	6.17	5.10
Washington	4.80	5.04	4.86	5.01	5.08	5.14	4.75	4.76
West Virginia	6.04	6.10	5.83	6.25	4.84	4.66	8.05	6.81
Wisconsin	NA	4.51	5.06	NA	NA	NA	NA	4.12
Wyoming	NA	NA	4.47	NA	NA	NA	NA	NA
Total	5.27	5.12	5.52	5.34	5.47	5.38	5.31	5.30

See footnotes at end of table.

Table 21. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1996				1995			
	April	March	February	January	Total	December	November	October
Alabama	6.07	6.20	5.77	5.62	5.80	5.48	5.53	5.90
Alaska	2.37	2.34	2.43	2.33	2.27	2.34	2.23	2.08
Arizona	4.97	4.94	4.95	4.90	5.25	4.91	5.10	5.09
Arkansas	4.47	4.34	4.37	4.31	4.09	3.89	4.27	4.32
California	6.05	6.68	6.26	6.82	6.21	7.01	4.67	6.04
Colorado	3.59	3.73	3.59	3.61	4.23	3.78	3.87	4.27
Connecticut	7.72	7.69	8.29	7.37	7.57	8.53	7.48	6.37
Delaware	5.48	5.60	5.30	5.29	5.28	4.97	5.64	5.38
District of Columbia	6.63	8.41	7.83	6.57	6.04	6.01	6.40	5.96
Florida	6.62	6.68	6.39	6.20	5.33	5.66	5.43	5.35
Georgia	5.90	5.41	5.62	5.16	5.20	4.72	4.21	4.96
Hawaii	13.69	13.95	13.50	12.92	13.00	13.46	13.19	13.17
Idaho	4.66	4.42	4.41	4.45	4.87	4.69	5.22	4.96
Illinois	4.99	4.74	4.30	4.06	4.42	4.00	4.11	4.23
Indiana	4.94	4.36	4.18	4.04	4.39	3.93	3.75	4.08
Iowa	3.87	4.13	4.07	4.01	4.14	4.05	4.10	4.04
Kansas	4.46	4.65	4.60	4.44	3.93	4.12	4.07	3.56
Kentucky	4.87	4.54	4.49	4.45	4.60	4.38	4.13	4.55
Louisiana	6.39	5.45	5.33	6.07	5.14	5.85	5.50	5.45
Maine	7.22	7.32	7.32	6.51	6.51	6.48	6.58	5.92
Maryland	5.54	5.97	6.03	5.57	5.06	5.16	5.00	5.18
Massachusetts	7.35	7.39	7.50	7.51	6.59	7.25	6.57	4.73
Michigan	4.51	4.46	4.46	4.41	4.46	4.39	4.49	4.71
Minnesota	4.43	4.37	4.37	4.44	3.98	4.24	3.95	3.94
Mississippi	4.74	4.73	4.43	4.87	4.25	4.68	4.50	2.83
Missouri	5.13	5.26	5.17	4.96	4.39	4.76	4.69	4.52
Montana	4.60	4.61	4.58	4.63	4.92	4.65	4.78	5.09
Nebraska	NA	NA	NA	NA	NA	NA	NA	NA
Nevada	4.90	4.86	4.84	4.80	5.39	4.88	5.31	5.59
New Hampshire	5.79	7.00	6.94	6.67	6.44	6.70	6.48	5.66
New Jersey	6.19	6.75	6.67	10.42	5.76	6.12	6.81	5.57
New Mexico	3.19	3.38	3.40	2.99	3.74	2.94	3.00	3.39
New York	NA	NA	NA	NA	6.09	6.16	5.51	5.46
North Carolina	5.83	6.34	6.10	5.39	5.24	5.19	5.18	5.11
North Dakota	3.89	3.78	3.87	3.84	3.90	3.77	3.74	4.42
Ohio	5.00	5.02	5.07	4.68	4.92	4.69	4.66	5.05
Oklahoma	4.24	4.60	4.46	4.48	4.47	4.47	4.33	4.25
Oregon	4.94	4.83	4.82	4.83	5.23	4.98	5.34	5.42
Pennsylvania	6.62	6.07	6.05	5.89	6.28	5.60	5.62	6.22
Rhode Island	6.07	7.29	7.26	7.04	6.41	6.94	5.94	6.35
South Carolina	6.05	6.49	6.66	6.22	6.09	5.78	5.77	5.67
South Dakota	4.36	3.47	4.04	3.54	3.99	3.91	3.85	3.68
Tennessee	6.02	5.99	5.81	5.26	5.18	5.02	4.88	5.16
Texas	3.98	4.32	4.32	4.45	4.09	4.31	4.17	3.99
Utah	2.86	3.69	3.06	3.59	3.65	3.92	3.91	3.24
Vermont	5.23	5.18	5.23	5.27	5.43	5.13	5.23	5.39
Virginia	5.58	5.37	5.86	5.46	5.08	4.92	4.52	5.24
Washington	4.78	4.74	4.74	4.73	5.00	4.89	4.89	4.95
West Virginia	6.32	6.09	6.02	6.00	6.08	6.09	6.04	5.98
Wisconsin	4.79	4.73	4.65	4.78	4.50	4.72	4.43	3.75
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	5.24	5.26	5.19	5.25	5.05	5.00	4.77	4.82

See footnotes at end of table.

Table 21. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1995							
	September	August	July	June	May	April	March	February
Alabama	5.93	5.96	5.90	5.94	5.98	6.16	5.62	5.78
Alaska	2.13	2.04	2.09	2.18	2.23	2.32	2.33	2.35
Arizona	5.04	5.23	5.26	5.28	5.37	5.41	5.42	5.40
Arkansas	4.24	4.18	4.17	4.17	4.29	3.94	4.01	3.95
California	6.00	6.20	5.68	5.98	5.56	5.98	6.41	6.74
Colorado	4.76	4.70	4.56	4.42	4.34	4.29	4.28	4.24
Connecticut	6.50	6.20	7.07	7.05	7.10	7.83	7.64	7.78
Delaware	5.64	5.86	5.32	5.64	5.39	5.31	5.15	5.18
District of Columbia	6.03	5.47	5.35	5.53	6.10	6.38	6.32	6.16
Florida	5.30	5.34	5.32	5.35	5.30	5.29	5.18	5.15
Georgia	4.97	4.98	5.07	5.17	5.00	5.87	5.92	5.39
Hawaii	13.22	12.99	13.37	13.07	12.90	12.96	12.66	12.55
Idaho	5.01	5.06	5.15	5.15	4.52	5.14	4.79	4.83
Illinois	5.23	5.01	5.35	5.16	5.16	4.42	4.53	4.44
Indiana	4.60	4.90	4.98	5.07	4.84	4.50	4.47	4.62
Iowa	4.84	5.56	5.41	5.16	4.67	4.01	4.05	3.93
Kansas	3.61	3.70	3.81	3.98	4.07	3.91	3.83	3.88
Kentucky	4.69	5.25	4.70	5.26	4.78	4.77	4.60	4.65
Louisiana	5.21	4.82	5.16	4.58	5.32	4.94	4.98	4.82
Maine	6.05	6.17	6.11	6.00	5.91	6.90	6.77	6.68
Maryland	4.85	5.23	5.83	5.30	4.89	4.94	5.00	4.95
Massachusetts	5.08	5.09	5.19	4.85	4.83	7.13	7.39	7.32
Michigan	5.26	5.59	5.62	5.26	4.62	4.30	4.28	4.28
Minnesota	3.91	3.98	2.68	4.18	4.05	3.70	3.91	3.94
Mississippi	2.61	3.80	4.27	4.41	4.54	4.54	4.42	4.42
Missouri	4.75	4.87	4.88	4.76	4.02	4.10	3.98	4.22
Montana	5.45	5.50	5.29	5.15	4.94	4.91	4.93	4.94
Nebraska	NA	3.74	3.75	3.89	5.16	4.02	4.09	4.09
Nevada	5.63	5.70	5.65	5.56	5.45	5.42	5.42	5.38
New Hampshire	5.95	6.21	6.03	6.04	5.38	5.47	6.89	6.85
New Jersey	4.86	5.22	5.33	5.18	5.18	5.26	5.73	5.61
New Mexico	3.54	3.46	4.11	3.61	4.13	3.96	4.17	4.13
New York	5.73	5.74	5.86	6.43	6.45	6.34	6.10	6.38
North Carolina	5.11	5.15	5.19	5.10	5.06	5.15	5.57	5.14
North Dakota	4.49	4.72	4.66	4.49	4.11	3.80	3.76	3.79
Ohio	5.33	5.27	5.36	5.34	4.86	4.91	4.78	4.79
Oklahoma	4.31	4.44	4.52	4.45	4.51	4.55	4.58	4.44
Oregon	5.55	5.55	5.46	5.04	5.09	5.24	5.22	5.23
Pennsylvania	6.98	7.07	7.03	7.05	6.71	6.49	6.33	6.49
Rhode Island	5.99	6.32	6.02	6.51	6.07	7.23	4.88	7.79
South Carolina	5.60	5.64	5.73	5.97	5.79	6.41	6.45	6.49
South Dakota	5.01	6.24	5.84	5.17	4.27	3.69	3.75	3.74
Tennessee	5.30	5.21	5.50	5.19	4.96	5.39	5.30	5.20
Texas	3.94	3.51	3.62	3.88	3.99	3.95	4.24	4.41
Utah	3.40	3.52	3.49	3.42	3.26	3.16	3.88	3.77
Vermont	5.45	5.70	5.23	5.81	5.68	5.51	5.51	5.53
Virginia	5.18	5.08	5.43	5.40	5.08	4.94	4.96	5.39
Washington	4.91	4.95	5.05	4.85	5.04	5.06	5.17	5.02
West Virginia	6.07	6.08	6.39	6.51	6.54	5.93	6.03	6.06
Wisconsin	3.56	4.13	4.28	4.24	4.27	4.53	4.55	4.63
Wyoming	NA	4.34	4.28	4.22	4.27	4.27	4.28	4.24
Total	4.98	4.99	5.03	5.16	5.04	5.08	5.12	5.14

NA = Not Available.

Notes: Data for 1995 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 24 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries.

Source: Form EIA-857.

**Table 22. Average Price of Natural Gas Sold to Industrial Consumers, by State,
1994-1996**
(Dollars per Thousand Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996				
				September	August	July	June	May
Alabama	3.66	2.94	3.36	3.12	3.62	3.57	3.44	3.38
Alaska	1.52	1.45	1.41	1.48	1.54	1.55	1.54	1.52
Arizona	3.86	3.69	3.53	3.82	3.74	3.64	3.90	3.90
Arkansas	2.94	2.78	3.27	2.74	2.77	3.03	2.92	2.93
California	3.64	3.68	3.09	3.53	3.48	3.54	3.29	3.28
Colorado	NA	NA	1.27	NA	NA	NA	1.71	1.75
Connecticut	4.75	4.31	4.57	3.98	3.83	4.02	4.07	4.21
Delaware	4.25	2.90	3.59	4.64	4.77	4.73	4.35	4.85
District of Columbia	—	—	—	—	—	—	—	—
Florida	4.15	3.23	3.62	3.96	3.00	4.22	4.24	4.17
Georgia	4.62	3.70	3.98	2.86	4.24	6.99	5.67	4.68
Hawaii	—	—	—	—	—	—	—	—
Idaho ^a	3.12	3.65	3.90	2.99	2.98	3.18	3.04	3.09
Illinois	4.12	3.70	4.67	5.07	5.01	4.84	5.37	4.58
Indiana	NA	3.41	4.85	NA	3.94	3.68	3.85	2.49
Iowa	3.51	3.33	4.24	3.91	3.54	4.41	4.26	3.55
Kansas	2.14	2.17	3.03	2.86	2.51	2.56	2.65	2.52
Kentucky	3.79	3.25	3.69	3.61	3.85	3.71	3.59	3.73
Louisiana	2.67	1.77	2.31	2.20	2.35	2.76	2.69	2.54
Maine	5.13	4.43	4.91	4.03	4.03	4.22	4.02	5.11
Maryland	NA	3.31	4.28	NA	NA	6.45	6.17	6.15
Massachusetts	5.38	4.38	5.36	3.81	3.77	4.05	3.80	4.15
Michigan	4.06	3.62	3.93	4.30	4.47	4.57	4.12	3.93
Minnesota	2.79	2.43	2.89	2.35	2.96	2.72	2.55	2.77
Mississippi	3.31	2.71	3.06	2.98	3.15	3.37	3.17	3.09
Missouri	4.34	3.40	4.35	4.14	4.29	4.25	3.89	3.98
Montana	4.85	4.86	4.89	5.04	5.16	5.09	5.01	4.65
Nebraska	3.14	2.85	3.23	2.87	3.41	3.21	3.09	2.93
Nevada	4.95	5.42	5.65	5.10	5.15	4.80	4.86	4.90
New Hampshire	4.26	3.78	4.61	3.53	3.39	3.51	3.43	3.62
New Jersey	3.83	3.06	3.67	3.39	3.09	3.49	3.42	3.70
New Mexico	2.82	3.57	3.53	3.36	2.55	1.66	2.06	7.53
New York	4.97	4.58	5.32	4.31	4.61	4.64	4.54	4.81
North Carolina	4.20	3.48	3.74	4.02	3.81	3.86	3.63	3.83
North Dakota	3.22	2.85	3.39	2.75	3.02	3.38	3.05	3.22
Ohio	4.67	3.96	4.47	5.06	5.33	5.56	4.55	4.73
Oklahoma	3.04	2.25	2.11	3.32	3.10	3.21	3.37	2.90
Oregon	3.22	3.44	3.58	3.18	3.23	3.32	3.25	3.21
Pennsylvania	4.20	4.04	4.10	4.08	3.98	3.93	4.08	4.05
Rhode Island	NA	4.18	4.67	NA	3.79	4.26	3.86	4.08
South Carolina	3.67	3.05	3.31	3.26	3.44	3.53	3.35	3.39
South Dakota	NA	3.55	3.86	NA	3.85	3.52	3.98	3.39
Tennessee	3.82	3.39	3.94	3.77	3.90	3.58	3.69	3.76
Texas	NA	1.64	2.06	2.09	NA	2.77	2.63	2.40
Utah	2.01	2.38	2.99	1.93	1.96	1.90	1.95	1.98
Vermont	3.50	3.48	3.51	3.16	3.30	3.36	3.54	3.73
Virginia	4.36	3.34	3.09	4.33	4.42	3.96	4.13	3.81
Washington	2.56	2.72	2.95	1.95	3.88	2.38	2.82	2.50
West Virginia	2.81	2.53	3.02	2.92	2.50	2.70	2.82	2.75
Wisconsin	3.58	2.90	3.45	3.02	3.36	3.52	3.34	3.29
Wyoming	NA	NA	3.49	NA	NA	NA	NA	NA
Total	3.26	2.60	3.05	2.84	3.06	3.19	3.12	3.07

See footnotes at end of table.

Table 22. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1996				1995			
	April	March	February	January	Total	December	November	October
Alabama	3.68	3.84	4.10	3.90	2.96	3.16	3.05	2.83
Alaska	1.51	1.52	1.50	1.50	1.45	1.42	1.43	1.44
Arizona	3.90	3.92	3.94	3.91	3.81	4.68	3.99	3.95
Arkansas	2.95	3.04	2.95	3.09	2.78	2.99	2.84	2.52
California	3.61	3.69	3.89	4.35	3.70	3.89	2.71	3.94
Colorado	1.70	1.91	1.72	1.80	NA	NA	NA	NA
Connecticut	4.69	5.21	5.68	6.52	4.39	5.41	4.41	3.79
Delaware	4.04	3.93	4.15	3.79	2.94	3.78	2.88	2.85
District of Columbia	—	—	—	—	—	—	—	—
Florida	4.62	4.26	4.57	4.16	3.28	2.94	3.44	3.37
Georgia	4.28	4.72	4.79	4.84	3.55	3.73	3.27	2.60
Hawaii	—	—	—	—	—	—	—	—
Idaho	3.00	3.18	3.17	3.47	3.67	3.93	3.82	3.34
Illinois	3.27	4.66	3.84	3.59	3.57	3.32	3.22	3.39
Indiana	3.66	3.37	3.53	3.04	3.41	3.54	3.28	3.32
Iowa	3.08	3.35	3.39	3.20	3.23	1.77	3.12	3.25
Kansas	2.27	2.82	2.49	0.78	2.23	2.55	2.39	2.21
Kentucky	3.75	3.82	3.85	3.93	3.26	3.51	3.18	3.11
Louisiana	2.82	3.01	2.75	2.77	1.82	2.27	1.90	1.82
Maine	6.27	6.38	6.50	5.60	4.46	5.43	4.54	3.74
Maryland	5.47	5.19	5.89	4.17	3.21	1.24	4.83	2.61
Massachusetts	5.91	6.52	7.00	6.89	4.43	5.05	4.70	3.80
Michigan	3.92	4.06	4.05	4.04	3.62	3.58	3.63	3.71
Minnesota	2.72	2.90	3.11	2.98	2.45	2.55	2.48	2.41
Mississippi	3.41	3.51	3.20	3.75	2.71	3.46	3.01	1.50
Missouri	4.22	4.92	4.58	4.31	3.48	4.19	3.58	3.02
Montana	4.84	4.74	4.72	4.94	4.87	4.86	4.88	4.98
Nebraska	3.14	3.11	3.20	3.20	2.79	2.91	2.38	2.54
Nevada	4.91	4.96	4.98	4.93	5.34	4.92	5.15	5.23
New Hampshire	4.27	5.43	6.08	5.23	3.80	4.97	3.79	2.99
New Jersey	4.13	4.19	4.83	4.11	3.11	3.53	3.22	2.78
New Mexico	3.30	5.53	3.74	2.30	2.83	1.71	2.21	2.05
New York	5.29	5.14	5.54	5.07	4.69	4.94	4.62	4.08
North Carolina	3.89	4.60	5.02	4.40	3.56	4.03	3.66	3.11
North Dakota	3.34	3.14	3.34	3.44	2.90	3.18	2.94	2.79
Ohio	4.78	4.70	4.38	4.51	3.93	3.91	3.99	3.36
Oklahoma	3.21	2.90	2.87	2.82	2.27	2.67	2.50	1.91
Oregon	3.14	3.27	3.25	3.19	3.41	3.25	3.46	3.31
Pennsylvania	4.24	4.24	4.37	4.41	3.90	3.56	3.44	3.56
Rhode Island	4.42	5.58	5.40	4.68	4.09	4.83	3.33	3.85
South Carolina	3.74	3.97	4.20	4.35	3.11	3.64	3.26	2.96
South Dakota	3.33	1.48	3.28	3.08	3.44	3.20	2.76	4.05
Tennessee	3.98	3.93	4.29	3.48	3.34	3.38	3.16	3.08
Texas	2.54	2.36	2.60	2.45	1.89	2.17	1.81	1.72
Utah	2.00	2.27	1.75	2.26	2.34	2.07	2.20	2.04
Vermont	3.74	3.53	3.62	3.45	3.39	2.98	3.27	3.34
Virginia	5.13	4.31	4.61	4.52	3.35	3.50	2.83	4.00
Washington	2.49	2.56	2.66	2.41	2.74	2.98	2.84	2.57
West Virginia	2.97	2.99	2.93	2.70	2.60	2.77	2.92	2.60
Wisconsin	3.74	3.69	3.64	3.83	2.96	3.57	3.16	2.40
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	3.35	3.50	3.54	3.38	2.71	3.07	2.68	2.44

See footnotes at end of table.

Table 22. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1994-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1995							
	September	August	July	June	May	April	March	February
Alabama	2.99	2.72	2.55	2.91	3.02	2.89	2.99	3.11
Alaska	1.43	1.45	1.48	1.47	1.45	1.46	1.44	1.44
Arizona	3.97	4.17	3.98	3.36	3.36	3.15	3.40	4.27
Arkansas	2.38	2.47	2.78	2.75	2.76	2.79	2.78	2.87
California	3.59	3.63	2.99	3.39	3.40	3.50	3.88	3.95
Colorado	NA	NA	NA	NA	NA	NA	NA	NA
Connecticut	3.62	3.72	3.66	3.76	3.94	4.47	4.40	5.23
Delaware	2.74	2.60	2.76	2.81	2.70	2.83	3.19	3.49
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.34	3.16	3.32	3.33	3.29	3.22	3.13	3.15
Georgia	3.71	4.94	3.97	3.54	3.49	3.35	3.53	3.77
Hawaii	—	—	—	—	—	—	—	—
Idaho *	2.79	3.51	3.68	3.79	3.65	3.79	3.84	3.91
Illinois	3.60	3.80	3.99	2.68	2.99	3.49	3.88	4.04
Indiana	3.54	3.43	3.81	3.99	4.22	3.97	4.35	4.52
Iowa	3.57	3.84	3.90	3.18	3.31	2.95	3.41	3.04
Kansas	2.21	2.05	2.04	2.20	2.22	2.10	2.12	2.25
Kentucky	3.03	2.85	3.16	3.14	3.24	3.12	3.29	3.43
Louisiana	1.69	1.66	1.85	1.88	1.82	1.71	1.66	1.75
Maine	3.70	3.79	3.80	3.77	3.62	4.49	5.58	5.74
Maryland	2.97	2.97	3.31	3.00	3.59	3.57	4.07	2.40
Massachusetts	3.52	3.12	3.23	2.03	4.12	5.45	5.68	5.77
Michigan	3.75	3.99	4.02	3.84	3.69	3.49	3.50	3.59
Minnesota	2.13	2.21	2.11	2.07	2.23	2.32	2.86	2.83
Mississippi	1.47	2.64	2.78	2.99	2.80	2.88	2.78	2.86
Missouri	3.07	3.14	3.29	3.31	3.10	3.30	3.41	3.63
Montana	4.99	5.06	5.02	4.98	4.85	4.82	4.79	4.78
Nebraska	2.79	2.96	2.68	2.63	2.72	2.72	2.96	2.94
Nevada	5.29	5.30	5.33	5.41	5.51	5.42	5.43	5.59
New Hampshire	2.94	2.82	2.92	3.22	3.11	3.52	4.13	6.52
New Jersey	2.60	2.45	2.72	2.66	2.79	3.03	3.51	3.40
New Mexico	2.34	2.46	3.47	4.40	7.82	3.70	4.79	5.31
New York	3.95	3.80	3.97	4.26	4.37	4.77	5.04	4.86
North Carolina	3.29	3.16	3.19	3.13	3.12	3.16	3.63	4.09
North Dakota	2.69	2.68	2.79	2.76	2.80	2.78	2.78	2.91
Ohio	3.80	3.79	3.61	3.56	3.44	3.95	3.82	4.14
Oklahoma	1.81	2.04	1.81	1.98	2.13	2.56	2.56	2.14
Oregon	3.43	3.39	3.50	3.44	3.46	3.38	3.41	3.48
Pennsylvania	9.31	3.29	3.48	3.54	3.56	3.31	3.49	4.09
Rhode Island	3.54	3.39	3.63	3.49	3.65	4.68	5.38	5.25
South Carolina	2.87	2.87	2.98	2.91	2.93	2.92	3.04	2.81
South Dakota	4.26	5.45	5.07	3.84	3.28	2.92	3.20	3.15
Tennessee	3.01	3.13	3.03	3.08	2.97	3.46	3.42	3.89
Texas	1.67	1.43	1.60	1.75	1.74	1.65	1.61	1.56
Utah	2.08	2.03	2.06	2.36	2.39	2.49	2.55	2.57
Vermont	3.72	3.42	3.68	3.39	3.33	3.40	3.49	3.59
Virginia	2.43	1.89	2.65	3.69	3.56	3.61	3.84	4.34
Washington	2.79	2.33	2.60	2.72	2.89	2.66	2.68	2.81
West Virginia	2.43	2.32	2.44	2.56	2.48	2.54	2.51	2.65
Wisconsin	2.24	2.34	2.20	2.65	3.72	2.80	3.00	3.15
Wyoming	NA	2.96	2.95	3.14	3.16	3.40	3.48	3.34
Total	2.42	2.26	2.34	2.44	2.54	2.57	2.74	2.85

NA = Not Available.

— = Not Applicable.

Notes: Data for 1995 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 24 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries.

Source: Form EIA-857.

Table 23. Average Price of Natural Gas Delivered to Electric Utility^a Consumers, by State, 1995-1996

(Dollars per Thousand Cubic Feet)

State	YTD 1996	YTD 1995	YTD 1994	1996				
				August	July	June	May	April
Alabama	2.84	1.87	2.49	2.66	3.04	2.71	2.59	3.10
Alaska	1.34	1.30	0.73	1.66	1.58	1.47	1.04	1.16
Arizona	2.95	1.71	2.28	2.61	3.09	3.33	4.43	2.30
Arkansas	2.54	1.70	2.00	2.47	2.57	2.40	2.30	2.54
California	2.58	2.28	2.65	2.67	2.35	2.44	2.60	2.53
Colorado	1.86	1.70	2.42	1.72	2.32	1.52	1.85	2.06
Connecticut	2.81	2.03	2.27	2.78	3.01	2.69	2.62	2.79
Delaware	3.44	2.22	2.67	2.35	3.39	3.01	3.19	4.14
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.16	2.18	2.30	2.99	3.28	3.09	2.91	3.18
Georgia	3.01	2.81	3.39	2.51	2.23	3.25	3.80	5.05
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	2.64	1.58	2.25	2.25	2.70	2.60	2.43	3.03
Indiana	3.33	2.38	2.89	2.95	3.14	3.32	3.21	3.40
Iowa	3.21	2.60	3.21	2.87	2.83	2.55	2.64	3.82
Kansas	2.24	1.55	1.96	2.35	2.19	2.16	2.13	2.45
Kentucky	3.45	2.92	3.06	3.05	3.36	3.15	3.78	3.40
Louisiana	2.98	1.80	2.34	2.64	2.96	2.72	2.63	2.99
Maine	—	—	—	—	—	—	—	—
Maryland	3.12	2.24	2.71	2.49	3.25	3.12	3.13	3.97
Massachusetts	3.30	1.98	2.53	2.71	3.37	3.03	3.08	3.62
Michigan	0.79	0.78	1.12	0.72	0.73	0.88	0.90	0.71
Minnesota	2.22	1.75	2.23	2.10	2.14	2.09	2.36	2.63
Mississippi	3.07	1.70	2.27	2.52	2.85	2.64	2.49	2.95
Missouri	2.55	1.64	2.10	2.41	2.63	2.50	2.42	2.20
Montana	6.57	4.35	1.52	6.79	3.49	4.69	5.95	8.98
Nebraska	1.96	1.67	2.10	2.16	2.27	1.74	1.58	1.94
Nevada	2.02	1.64	2.11	2.20	1.83	1.98	1.90	2.08
New Hampshire	—	1.85	2.26	—	—	—	—	—
New Jersey	3.06	2.07	2.33	2.79	3.15	3.14	3.37	3.50
New Mexico	2.12	1.52	2.10	2.33	2.01	1.99	2.04	2.17
New York	3.03	2.08	2.42	2.74	3.06	2.89	2.80	3.35
North Carolina	3.12	2.43	3.14	3.31	3.51	2.93	2.66	3.23
North Dakota	3.06	3.74	4.24	3.32	2.71	2.81	2.91	—
Ohio	3.19	2.28	4.16	2.70	3.18	3.51	2.99	3.48
Oklahoma	2.94	2.25	2.87	2.64	2.70	2.72	2.95	3.15
Oregon	1.24	1.24	1.99	1.24	1.25	—	—	—
Pennsylvania	3.13	2.07	2.79	2.63	3.52	2.74	3.38	2.64
Rhode Island	2.29	2.00	2.28	2.32	2.27	2.13	2.10	2.36
South Carolina	4.12	1.70	3.67	4.67	3.94	3.69	4.75	4.44
South Dakota	2.36	1.48	2.65	—	2.36	—	—	—
Tennessee	—	0.79	1.20	—	—	—	—	—
Texas	2.48	1.88	2.30	2.45	2.63	2.46	2.35	2.48
Utah	3.07	2.54	2.50	1.67	1.57	2.39	—	—
Vermont	3.16	1.95	2.49	3.15	3.45	3.17	—	2.72
Virginia	2.98	2.72	2.92	2.83	3.36	3.14	3.61	1.51
Washington	5.15	4.59	9.73	4.98	6.14	5.52	4.05	4.22
West Virginia	3.53	3.66	4.31	3.28	3.35	3.31	2.82	3.00
Wisconsin	2.89	2.07	2.82	2.87	2.97	2.56	2.71	3.01
Wyoming	—	7.89	4.72	—	—	—	—	—
Total	2.67	1.96	2.40	2.58	2.69	2.59	2.52	2.68

See footnotes at end of table.

**Table 23. Average Price of Natural Gas Delivered to Electric Utility^a Consumers,
by State, 1995-1996**
(Dollars per Thousand Cubic Feet) — Continued

State	1996			1995				
	March	February	January	Total	December	November	October	September
Alabama	3.29	2.82	3.71	2.01	2.68	2.19	2.02	1.94
Alaska	1.22	1.29	1.32	1.29	1.24	1.30	1.28	1.29
Arizona	2.31	3.19	2.71	1.77	2.35	1.94	1.84	1.92
Arkansas	2.71	7.11	2.02	1.74	2.68	1.80	1.83	1.68
California	2.58	3.03	2.69	2.28	2.57	2.32	2.37	2.08
Colorado	1.79	1.75	1.80	1.74	1.90	1.73	1.82	1.90
Connecticut	—	—	—	2.01	—	2.10	1.85	1.80
Delaware	2.89	4.63	4.63	2.34	3.70	2.64	2.13	2.06
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.50	2.83	3.87	2.26	3.07	2.43	2.29	2.22
Georgia	5.18	4.90	7.30	2.79	4.55	3.67	3.14	3.06
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	3.12	3.24	3.19	1.71	2.48	2.04	1.78	1.68
Indiana	3.85	3.98	3.39	2.49	3.01	2.72	2.78	2.49
Iowa	5.45	3.44	3.36	2.72	2.94	3.02	2.73	2.71
Kansas	2.18	2.46	2.28	1.58	2.06	1.58	1.50	1.57
Kentucky	3.72	3.57	3.96	3.01	3.14	2.57	2.87	2.50
Louisiana	3.25	4.04	3.72	1.88	2.72	2.08	1.93	1.85
Maine	—	—	—	—	—	—	—	—
Maryland	5.72	6.54	6.01	2.24	5.16	2.80	2.51	2.03
Massachusetts	4.17	3.70	6.47	2.06	3.92	2.59	2.02	1.93
Michigan	0.83	0.90	0.65	0.73	0.61	0.71	0.43	0.77
Minnesota	2.43	2.13	2.10	1.77	2.11	2.19	1.60	1.67
Mississippi	3.50	8.16	4.08	1.78	2.76	1.96	1.90	1.73
Missouri	3.37	3.12	3.11	1.69	2.38	2.10	1.88	1.91
Montana	20.05	3.68	1.86	3.84	3.84	1.40	7.42	2.07
Nebraska	2.39	2.19	1.96	1.65	1.91	1.67	1.50	1.51
Nevada	2.14	2.22	1.99	1.71	2.02	1.80	1.82	1.75
New Hampshire	—	—	—	1.86	—	—	1.93	1.81
New Jersey	3.67	2.85	2.76	2.18	3.12	2.63	2.26	2.12
New Mexico	2.23	2.16	2.07	1.57	1.83	1.74	1.65	1.64
New York	3.32	3.91	4.49	2.13	3.10	2.58	2.03	1.93
North Carolina	—	—	3.07	2.40	—	3.04	2.07	2.00
North Dakota	—	—	3.58	3.71	3.58	3.59	—	4.07
Ohio	3.74	3.54	3.94	2.34	3.04	2.28	2.66	2.16
Oklahoma	3.35	4.13	3.13	2.34	2.88	2.78	2.95	2.16
Oregon	—	—	—	1.31	1.53	1.73	1.42	1.01
Pennsylvania	3.61	5.41	4.57	2.04	2.63	2.72	1.90	1.80
Rhode Island	2.37	2.45	2.38	1.90	2.06	1.70	1.76	2.05
South Carolina	4.72	4.35	4.23	1.64	3.70	3.55	1.55	1.59
South Dakota	—	—	—	1.58	2.39	2.02	—	1.64
Tennessee	—	—	—	—	—	—	—	—
Texas	2.35	2.60	2.48	1.93	2.42	2.09	1.96	1.89
Utah	—	20.25	—	2.26	—	2.40	1.80	1.52
Vermont	—	—	3.06	1.95	1.96	1.85	2.13	2.31
Virginia	3.09	1.99	2.41	2.67	3.32	2.44	2.58	2.36
Washington	5.51	4.90	4.98	4.60	4.21	3.99	5.97	3.54
West Virginia	2.70	2.75	5.00	3.58	3.09	4.92	2.57	3.30
Wisconsin	4.19	2.88	2.64	2.23	2.65	2.51	2.30	2.37
Wyoming	—	—	—	8.32	16.25	12.28	4.15	4.56
Total	2.70	3.06	2.88	2.02	2.58	2.22	2.09	1.95

See footnotes at end of table.

Table 23. Average Price of Natural Gas Delivered to Electric Utility^a Consumers, by State, 1995-1996

(Dollars per Thousand Cubic Feet) — Continued

State	1995							
	August	July	June	May	April	March	February	January
Alabama	1.75	1.86	2.07	2.05	1.95	1.84	1.97	2.19
Alaska	1.13	1.22	1.33	1.43	1.28	1.39	1.29	1.32
Arizona	1.59	1.63	2.31	2.48	1.56	1.71	1.68	1.67
Arkansas	1.63	1.62	2.01	1.88	1.63	1.41	1.41	1.52
California	2.02	2.18	2.56	2.45	2.28	2.36	2.37	2.43
Colorado	1.72	1.48	1.91	1.79	1.68	1.61	1.60	1.76
Connecticut	1.82	1.95	2.11	2.10	2.07	1.99	2.04	2.31
Delaware	2.00	2.00	2.40	2.42	2.18	2.19	2.52	2.55
District of Columbia	—	—	—	—	—	—	—	—
Florida	2.11	2.20	2.39	2.36	2.16	1.96	2.00	1.94
Georgia	2.76	2.62	2.78	2.92	2.99	3.00	3.80	7.97
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	1.59	1.53	1.64	1.71	1.64	1.51	1.55	1.64
Indiana	2.31	2.36	2.38	2.33	2.88	2.31	2.48	2.52
Iowa	2.52	2.38	2.61	3.31	2.73	3.01	3.04	2.89
Kansas	1.49	1.43	1.70	1.85	1.64	1.51	1.62	1.82
Kentucky	2.42	2.54	2.90	4.08	3.89	2.95	2.37	2.63
Louisiana	1.67	1.78	1.95	1.91	1.78	1.69	1.76	1.88
Maine	—	—	—	—	—	—	—	—
Maryland	2.10	2.16	2.38	2.64	2.64	2.54	2.35	2.76
Massachusetts	1.81	1.88	1.97	2.09	2.07	2.00	2.27	2.74
Michigan	1.09	0.79	0.48	0.48	0.55	0.86	0.99	0.64
Minnesota	1.69	1.65	1.72	1.78	1.62	1.74	1.97	2.10
Mississippi	1.60	1.64	1.85	1.84	1.74	1.59	1.60	1.78
Missouri	1.71	1.64	1.62	1.62	1.56	1.43	1.48	1.85
Montana	1.55	7.37	2.30	4.66	25.80	12.45	37.93	6.70
Nebraska	1.54	1.50	1.96	1.94	1.60	1.90	1.90	2.09
Nevada	1.53	1.56	1.77	1.80	1.85	1.51	1.57	1.89
New Hampshire	1.71	1.79	1.98	1.98	1.98	—	—	1.85
New Jersey	2.09	2.03	2.54	2.44	1.90	1.74	1.72	1.96
New Mexico	1.44	1.41	1.53	1.57	1.50	1.44	1.48	1.84
New York	1.89	1.94	2.12	2.20	2.14	2.08	2.20	2.40
North Carolina	2.45	2.43	2.16	2.17	2.50	2.89	3.42	—
North Dakota	—	3.95	3.89	—	3.77	3.68	3.68	3.64
Ohio	2.38	2.09	2.13	2.18	2.47	2.28	2.16	4.03
Oklahoma	2.07	2.09	2.42	2.46	2.28	2.27	2.34	2.46
Oregon	0.94	0.93	—	1.13	1.25	1.15	1.60	1.54
Pennsylvania	1.77	1.99	2.05	2.29	1.86	2.38	2.54	2.52
Rhode Island	2.00	—	1.93	—	—	—	—	—
South Carolina	1.56	1.90	1.96	2.50	2.73	1.43	3.83	3.42
South Dakota	1.37	1.43	2.13	—	—	—	—	—
Tennessee	—	—	—	—	—	—	—	—
Texas	1.79	1.85	1.93	1.92	1.86	1.85	1.92	2.06
Utah	1.43	3.65	6.27	2.69	2.70	2.63	2.71	2.66
Vermont	2.29	2.33	2.31	2.31	2.23	1.86	1.90	1.82
Virginia	2.24	3.12	7.84	2.41	2.60	2.57	2.70	2.83
Washington	4.37	4.37	3.87	5.83	29.07	6.51	4.28	4.49
West Virginia	1.86	3.68	3.89	4.08	4.09	3.52	3.51	3.63
Wisconsin	2.06	1.89	2.17	2.25	2.22	2.18	2.42	2.30
Wyoming	14.93	3.25	15.69	11.58	10.51	5.93	16.27	7.69
Total	1.84	1.90	2.06	2.06	1.97	1.92	2.00	2.13

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

— = Not Applicable.

Notes: Data for 1995 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 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996

State	YTD 1996		YTD 1995		YTD 1994		1996	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	September	
							Commercial	Industrial
Alabama	79.1	15.3	81.4	23.4	81.9	27.2	68.5	12.8
Alaska	71.5	95.7	82.4	50.0	100.0	53.3	60.8	100.0
Arizona	85.6	21.3	88.6	25.7	90.7	29.2	83.5	19.1
Arkansas	95.0	16.8	95.7	13.9	94.6	13.6	88.9	21.3
California	54.8	11.2	53.5	13.0	44.6	19.3	44.9	9.6
Colorado	NA	NA	94.7	25.6	95.1	27.7	NA	NA
Connecticut	87.7	86.9	79.9	84.5	81.7	94.7	69.2	73.5
Delaware	100.0	39.3	100.0	68.5	100.0	66.0	100.0	27.5
District of Columbia	76.1	—	77.6	—	94.9	—	47.8	—
Florida	97.6	10.4	97.7	15.9	97.9	16.4	97.7	7.2
Georgia	94.1	25.0	92.8	33.8	92.3	37.4	85.4	26.7
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	87.3	1.4	86.8	2.6	86.3	3.0	80.0	1.3
Illinois	54.8	10.9	49.8	10.4	53.8	12.6	42.8	5.5
Indiana	NA	NA	86.5	13.6	93.0	13.6	NA	NA
Iowa	88.8	7.4	89.0	7.4	90.6	10.9	76.3	5.6
Kansas	66.4	14.8	72.5	12.1	77.7	5.7	77.5	10.2
Kentucky	89.6	24.1	88.2	26.3	92.3	33.7	81.8	15.4
Louisiana	98.1	11.9	98.1	29.8	98.0	23.7	98.8	9.0
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
*Maryland	NA	NA	97.2	14.6	97.1	18.2	NA	NA
Massachusetts	77.3	26.2	86.6	31.6	73.6	26.7	55.0	30.2
Michigan	65.3	6.4	65.4	9.0	65.9	11.1	42.7	3.1
Minnesota	96.4	37.9	94.1	33.5	96.6	48.2	93.8	34.4
Mississippi	NA	37.1	97.2	42.7	96.8	44.1	NA	34.4
Missouri	82.6	23.6	84.0	23.0	84.5	22.9	67.0	17.8
Montana	91.4	3.4	91.8	3.0	91.8	3.7	85.6	2.2
Nebraska	NA	24.9	NA	15.3	82.0	22.3	NA	22.0
Nevada	76.2	1.6	77.8	1.8	84.1	1.9	68.4	5.5
New Hampshire	99.1	64.6	99.3	63.3	100.0	100.0	98.2	63.8
New Jersey	73.6	52.9	88.3	53.2	92.0	59.0	60.3	36.1
New Mexico	61.0	1.2	59.7	3.8	61.1	9.0	59.4	1.6
New York	NA	13.4	75.7	13.1	79.6	16.4	NA	11.1
North Carolina	97.2	56.6	91.1	41.8	97.1	61.1	85.9	21.4
North Dakota	86.3	20.9	80.9	17.3	80.7	26.8	72.4	21.7
Ohio	71.4	5.4	75.8	7.4	82.2	10.4	65.0	3.1
Oklahoma	88.7	7.0	86.2	17.5	88.8	25.4	78.3	5.2
Oregon	98.4	20.7	98.2	25.9	98.2	32.2	97.5	14.0
Pennsylvania	72.7	17.6	72.1	16.2	76.2	21.4	66.3	13.7
Rhode Island	NA	NA	100.0	11.4	100.0	8.5	NA	NA
South Carolina	99.1	81.9	95.9	81.0	98.8	74.4	96.6	80.6
South Dakota	NA	NA	87.1	26.7	88.9	36.9	NA	NA
Tennessee	92.6	36.3	93.1	45.0	94.7	46.2	75.9	23.6
Texas	NA	NA	69.5	27.9	82.5	27.9	NA	16.7
Utah	81.7	9.1	82.0	11.2	82.4	10.5	78.4	8.6
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	85.1	13.2	83.4	14.5	88.6	23.0	62.4	7.7
Washington	86.0	24.4	92.8	34.7	95.8	42.9	81.5	19.9
West Virginia	52.5	13.9	50.6	14.0	57.0	13.2	32.5	11.6
Wisconsin	NA	35.0	91.7	47.8	95.4	48.1	NA	24.9
Wyoming	NA	NA	NA	NA	96.0	2.3	NA	NA
Total	75.7	18.9	76.9	24.2	79.4	25.5	59.3	14.5

See footnotes at end of table.

Table 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996 — Continued

State	1996							
	August		July		June		May	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	67.8	12.4	69.2	13.3	71.0	13.6	76.4	15.0
Alaska	64.1	91.0	61.8	88.7	65.2	93.7	68.9	98.5
Arizona	78.4	20.5	82.1	19.6	83.6	21.1	84.8	29.2
Arkansas	91.5	16.3	88.5	18.3	94.2	19.1	92.4	18.8
California	44.3	8.8	48.0	11.5	53.0	10.4	52.2	11.6
Colorado	NA	NA	NA	NA	93.6	20.4	93.6	18.5
Connecticut	77.8	73.0	81.3	82.0	79.2	90.3	78.6	92.4
Delaware	100.0	26.1	100.0	26.2	100.0	38.2	100.0	31.7
District of Columbia	53.0	—	62.6	—	71.2	—	71.1	—
Florida	97.3	10.1	97.6	8.2	97.7	9.1	97.8	10.8
Georgia	87.0	21.2	87.6	13.5	87.8	17.4	91.4	23.5
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	82.0	1.7	82.4	1.1	86.0	1.7	85.7	1.3
Illinois	42.7	5.0	39.3	4.9	43.8	4.4	49.3	7.9
Indiana	74.3	9.1	79.1	8.6	78.0	4.9	86.8	40.5
Iowa	91.9	8.2	76.5	4.8	87.6	5.4	90.4	6.8
Kansas	33.6	10.3	66.2	10.0	61.3	12.1	51.3	17.9
Kentucky	82.9	15.2	83.2	21.4	88.6	13.8	81.6	19.4
Louisiana	97.4	10.5	99.1	10.2	96.7	10.5	94.4	9.6
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	NA	NA	77.4	6.0	87.4	8.1	93.0	10.7
Massachusetts	61.1	34.8	68.0	36.8	70.6	39.4	77.4	38.2
Michigan	39.5	3.4	42.3	3.3	44.2	4.6	62.6	7.1
Minnesota	93.3	37.6	94.4	38.3	95.6	33.8	97.2	32.4
Mississippi	97.5	35.9	96.9	33.0	96.3	34.9	97.0	35.1
Missouri	57.7	13.0	61.7	19.4	72.0	23.4	78.5	24.6
Montana	86.9	1.5	87.4	1.8	90.5	1.8	90.5	2.8
Nebraska	NA	21.7	NA	21.7	NA	19.8	NA	23.4
Nevada	67.6	5.8	71.1	6.0	73.7	6.8	75.1	6.7
New Hampshire	98.2	61.6	98.0	64.7	98.5	66.2	98.9	66.9
New Jersey	60.3	38.8	61.3	37.0	64.4	32.0	67.6	41.1
New Mexico	61.1	1.8	64.2	0.7	64.1	1.7	45.8	0.3
New York	NA	11.0	NA	11.1	NA	12.4	NA	13.2
North Carolina	88.3	30.6	95.9	61.4	90.5	44.7	91.2	35.9
North Dakota	73.1	9.2	72.2	8.5	62.2	12.5	88.4	20.1
Ohio	53.8	2.7	56.3	2.1	42.0	2.8	63.1	4.3
Oklahoma	74.5	5.9	76.4	5.3	78.7	5.2	82.8	3.7
Oregon	98.0	13.6	98.1	13.6	98.3	16.3	98.1	18.1
Pennsylvania	49.0	14.4	63.8	15.8	63.6	14.4	68.2	15.9
Rhode Island	87.1	50.4	84.4	42.2	92.1	57.0	97.9	62.0
South Carolina	96.6	80.7	100.0	87.2	97.1	77.3	97.5	78.0
South Dakota	66.9	13.5	67.1	15.1	74.5	11.9	78.7	18.3
Tennessee	83.6	30.4	91.1	39.5	86.9	35.0	89.1	32.8
Texas	NA	NA	65.0	24.7	60.4	20.8	61.7	20.5
Utah	71.9	7.7	73.3	7.4	72.9	9.5	77.7	9.0
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	72.2	6.6	65.8	7.2	63.9	9.6	78.0	15.4
Washington	80.1	11.7	80.0	21.1	82.0	21.8	84.5	23.2
West Virginia	41.9	12.5	41.5	12.8	25.2	12.2	42.9	12.6
Wisconsin	NA	25.0	NA	25.9	NA	26.2	93.3	31.0
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	58.6	14.8	66.1	18.2	66.3	16.6	71.7	18.5

See footnotes at end of table.

Table 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996 — Continued

State	1996							
	April		March		February		January	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	80.5	16.6	80.8	17.3	85.6	18.5	81.5	17.7
Alaska	71.9	98.5	76.3	97.7	79.1	98.4	73.7	96.3
Arizona	83.7	22.5	86.9	24.2	90.2	27.0	89.5	24.4
Arkansas	96.3	17.9	95.6	15.0	96.9	16.5	96.4	15.6
California	63.7	12.4	63.3	12.5	58.7	15.3	59.5	13.9
Colorado	94.2	17.9	94.8	16.8	96.2	17.6	95.3	24.9
Connecticut	89.9	94.5	93.1	96.6	93.2	98.2	93.4	95.1
Delaware	100.0	28.5	100.0	56.9	100.0	57.6	100.0	58.3
District of Columbia	87.8	—	84.6	—	83.8	—	80.5	—
Florida	97.7	11.6	96.9	11.5	97.1	11.7	98.8	17.4
Georgia	94.3	26.8	96.5	30.4	97.9	33.0	97.4	34.0
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	87.2	1.3	88.2	1.4	90.1	1.3	88.8	1.1
Illinois	53.4	12.4	59.3	16.5	59.3	16.3	58.0	15.2
Indiana	94.4	19.6	95.4	24.0	96.8	25.6	95.7	24.5
Iowa	89.4	7.3	88.2	8.2	91.6	8.1	90.2	10.9
Kansas	63.7	15.8	70.0	14.4	78.9	14.7	72.2	25.7
Kentucky	88.8	27.9	91.2	32.3	90.8	32.9	92.7	32.6
Louisiana	98.9	10.0	97.6	9.4	98.4	10.1	99.7	29.7
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	90.9	17.5	91.1	21.8	96.9	19.0	94.7	20.7
Massachusetts	80.0	43.3	82.2	37.3	83.2	49.6	83.9	44.0
Michigan	66.8	11.1	71.6	11.7	70.6	13.7	72.2	13.7
Minnesota	97.0	50.0	96.9	36.8	97.6	37.6	95.9	38.0
Mississippi	96.9	36.9	96.6	38.2	97.8	38.8	97.9	47.8
Missouri	84.4	25.8	85.4	23.9	89.7	32.9	87.4	26.1
Montana	92.4	4.0	91.6	5.0	93.5	5.6	92.0	4.5
Nebraska	NA	24.3	NA	25.9	NA	29.5	NA	31.2
Nevada	77.3	8.5	78.9	8.7	81.1	10.0	79.7	10.0
New Hampshire	99.1	68.1	99.2	63.6	99.3	61.1	99.3	64.0
New Jersey	72.2	34.8	77.3	41.8	79.1	35.1	79.9	36.8
New Mexico	56.4	0.9	57.9	0.4	60.2	0.5	70.2	2.8
New York	NA	14.5	NA	23.8	NA	18.4	NA	18.3
North Carolina	99.7	77.1	99.9	88.4	99.8	66.9	99.9	93.4
North Dakota	84.6	27.0	90.5	21.9	92.9	25.0	90.4	31.7
Ohio	72.2	5.9	76.0	7.2	76.0	9.8	77.3	8.3
Oklahoma	93.0	8.9	91.4	9.0	93.2	11.1	91.5	8.7
Oregon	98.1	23.7	98.6	25.5	98.8	26.6	98.4	26.5
Pennsylvania	72.2	18.5	76.5	25.5	77.8	23.6	76.4	15.5
Rhode Island	97.8	59.4	98.5	90.7	99.3	84.1	100.0	39.4
South Carolina	100.0	86.4	100.0	83.6	100.0	81.4	100.0	81.9
South Dakota	85.0	25.0	84.7	71.4	87.9	32.6	89.9	31.0
Tennessee	94.9	43.8	91.6	44.5	96.8	38.2	96.7	39.8
Texas	66.6	19.5	63.1	17.7	75.9	23.7	71.4	21.5
Utah	82.3	10.2	82.8	9.4	85.6	10.0	84.0	9.4
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	83.7	14.6	90.8	13.0	96.5	13.8	96.9	14.8
Washington	84.4	26.0	87.6	31.3	89.8	31.2	89.1	33.0
West Virginia	51.4	12.8	60.7	14.7	62.3	16.6	60.3	19.2
Wisconsin	93.7	35.6	95.6	46.1	96.1	42.8	95.4	40.8
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	76.7	20.1	79.8	21.0	82.1	22.1	81.5	23.6

See footnotes at end of table.

Table 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996 — Continued

State	1995							
	Total		December		November		October	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	80.1	23.4	81.1	25.8	72.8	21.6	72.0	22.2
Alaska	79.9	52.1	77.9	60.6	72.9	64.3	69.2	57.8
Arizona	88.4	24.7	87.2	25.1	87.9	21.3	88.4	19.2
Arkansas	96.0	14.2	100.0	9.7	92.6	15.5	91.8	15.3
California	52.1	13.2	50.9	11.2	48.7	11.1	43.4	9.4
Colorado	94.2	8.5	93.8	9.0	93.5	11.3	89.8	11.2
Connecticut	82.0	90.1	91.7	96.1	87.7	99.5	81.6	94.7
Delaware	100.0	67.6	100.0	57.4	100.0	66.6	100.0	69.2
District of Columbia	76.8	—	77.4	—	74.6	—	64.8	—
Florida	97.6	16.2	96.7	17.7	97.4	18.0	97.8	15.2
Georgia	93.5	35.7	97.2	46.2	94.8	37.8	91.1	38.4
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	86.0	2.2	85.5	1.1	85.9	1.3	77.1	0.6
Illinois	50.4	11.0	53.3	14.5	51.8	13.3	46.6	8.4
Indiana	87.8	14.2	93.4	18.2	90.7	16.8	80.9	11.3
Iowa	89.3	8.2	91.2	9.9	89.6	12.0	86.9	10.0
Kansas	73.6	12.9	70.7	15.6	88.7	14.9	76.3	16.1
Kentucky	89.2	27.7	92.7	34.6	91.0	30.6	85.7	28.3
Louisiana	98.1	31.0	97.6	30.7	97.3	32.6	98.6	29.8
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	96.9	13.3	97.0	12.0	95.6	6.5	94.7	8.7
Massachusetts	84.9	53.4	79.5	48.1	81.6	53.7	81.0	54.4
Michigan	66.4	12.2	72.5	16.2	68.0	12.1	57.1	7.3
Minnesota	93.7	34.6	94.6	36.3	90.4	40.2	93.8	36.7
Mississippi	97.0	42.4	95.5	40.3	95.6	41.9	98.0	42.8
Missouri	83.3	22.4	85.7	24.3	78.7	20.1	71.8	17.2
Montana	91.6	3.1	91.9	4.6	91.8	3.4	88.8	2.5
Nebraska	NA	16.5	NA	25.7	NA	17.2	NA	19.5
Nevada	76.5	7.7	75.2	8.1	70.8	7.5	67.8	6.2
New Hampshire	99.2	64.4	99.1	64.6	98.9	69.8	98.5	67.8
New Jersey	86.3	52.9	82.9	55.0	81.9	49.7	72.6	51.2
New Mexico	60.3	6.6	64.4	14.2	62.3	16.2	54.6	12.9
New York	76.2	17.4	79.9	22.2	77.2	20.4	72.3	15.8
North Carolina	92.4	46.9	99.9	94.2	93.6	51.4	88.2	41.4
North Dakota	80.9	18.2	86.5	26.4	80.3	21.8	64.2	12.8
Ohio	76.3	7.4	79.2	8.8	77.9	7.1	69.9	5.2
Oklahoma	85.2	15.2	86.0	9.5	79.8	7.6	74.6	7.0
Oregon	98.1	25.5	98.4	25.2	97.9	24.3	96.7	23.5
Pennsylvania	68.4	16.3	70.6	23.0	48.3	14.0	66.9	12.2
Rhode Island	100.0	11.1	100.0	4.9	100.0	13.7	100.0	17.9
South Carolina	96.4	81.4	100.0	90.0	95.9	78.5	95.3	79.8
South Dakota	86.9	27.6	88.5	31.4	85.8	35.0	82.3	21.4
Tennessee	93.8	47.6	97.2	56.2	96.5	61.0	89.1	47.6
Texas	68.6	25.5	67.9	22.7	70.7	24.9	55.8	23.1
Utah	81.8	11.0	82.8	8.9	80.2	10.4	79.4	11.1
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	84.1	14.8	91.4	17.0	84.4	19.1	71.5	11.0
Washington	91.8	32.9	89.7	29.2	88.7	28.1	87.9	26.4
West Virginia	51.6	14.4	60.8	16.3	51.6	16.0	42.0	14.2
Wisconsin	92.0	46.6	93.6	42.9	93.4	43.7	88.9	44.2
Wyoming	NA	NA	NA	NA	NA	NA	NA	NA
Total	76.7	24.5	79.2	25.0	75.6	24.7	69.7	22.5

See footnotes at end of table.

Table 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996 — Continued

State	1995							
	September		August		July		June	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	73.1	20.6	74.2	20.1	75.1	19.6	75.7	21.5
Alaska	72.1	31.0	71.3	26.6	72.0	39.6	76.4	40.7
Arizona	86.5	19.5	84.8	19.8	84.5	24.9	87.9	32.5
Arkansas	92.3	13.7	93.4	12.9	91.5	12.5	93.1	13.6
California	39.9	9.8	44.1	11.0	44.7	12.2	53.1	14.4
Colorado	89.3	8.9	89.7	7.0	92.3	7.2	95.5	5.3
Connecticut	72.1	93.0	63.7	85.2	61.8	94.4	66.1	88.5
Delaware	100.0	67.8	100.0	65.3	100.0	62.6	100.0	68.1
District of Columbia	61.6	—	66.2	—	68.0	—	69.6	—
Florida	98.1	14.3	97.8	13.6	98.2	13.3	98.1	15.1
Georgia	87.9	26.9	88.4	20.2	87.4	29.7	88.4	32.7
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	80.4	2.8	82.5	2.5	83.7	3.0	85.3	3.2
Illinois	39.6	6.3	38.2	4.6	38.6	5.9	42.9	8.8
Indiana	77.9	8.9	72.7	9.1	73.5	7.5	76.1	8.2
Iowa	80.7	6.2	77.7	5.7	80.0	5.9	81.9	5.5
Kansas	62.5	14.6	51.3	12.5	66.0	13.1	64.8	15.2
Kentucky	81.7	31.7	81.5	24.5	76.5	22.3	80.6	27.1
Louisiana	98.3	29.9	98.4	27.5	98.1	27.7	98.0	32.3
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	95.6	9.8	94.9	8.8	94.4	10.5	96.2	11.2
Massachusetts	77.5	46.1	77.3	51.4	74.6	47.1	82.7	67.6
Michigan	46.9	7.8	39.0	5.9	41.6	5.9	45.8	6.2
Minnesota	93.8	37.6	92.7	27.7	91.4	30.9	93.0	38.4
Mississippi	98.3	44.9	98.9	41.0	98.4	38.0	90.4	39.2
Missouri	71.4	19.7	71.6	17.8	72.3	20.1	75.0	19.9
Montana	88.2	2.1	88.9	1.4	89.6	1.7	90.1	1.4
Nebraska	NA	10.9	68.4	12.8	70.4	10.1	71.8	13.9
Nevada	71.3	6.5	70.0	6.7	72.8	7.3	76.5	7.0
New Hampshire	98.3	66.2	98.1	64.9	98.4	57.1	98.5	59.3
New Jersey	83.8	45.6	75.1	47.9	78.7	47.5	80.0	49.0
New Mexico	51.2	7.5	57.9	5.2	60.7	3.8	60.9	3.4
New York	68.1	14.5	64.1	13.0	66.5	13.4	66.5	14.0
North Carolina	87.5	31.0	87.1	28.6	88.0	30.4	86.4	43.5
North Dakota	70.9	11.6	58.9	10.9	61.7	7.1	70.7	13.4
Ohio	58.3	4.3	59.0	4.2	62.9	3.7	61.4	5.4
Oklahoma	76.7	12.6	74.1	7.4	77.0	17.5	79.3	15.8
Oregon	98.1	24.1	97.9	22.8	98.1	22.2	97.8	23.8
Pennsylvania	62.8	12.8	64.1	12.7	65.3	13.4	66.6	12.5
Rhode Island	100.0	12.7	100.0	12.0	100.0	9.0	100.0	14.2
South Carolina	95.3	82.5	95.1	81.0	95.0	85.4	88.4	83.5
South Dakota	75.8	20.0	75.5	14.4	76.5	15.0	77.1	17.3
Tennessee	87.7	39.3	87.2	39.2	89.9	41.4	93.0	48.8
Texas	71.2	24.1	69.1	27.3	68.1	25.1	72.7	26.1
Utah	75.2	10.9	71.3	11.2	73.9	10.6	79.3	10.8
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	70.9	13.9	73.5	13.0	72.0	10.4	74.7	13.2
Washington	87.4	24.8	90.7	29.5	90.8	33.2	91.3	33.8
West Virginia	38.9	13.0	38.1	13.4	36.6	14.8	34.8	14.0
Wisconsin	87.3	44.1	84.8	42.3	82.3	43.0	81.8	43.3
Wyoming	NA	NA	98.4	3.0	85.2	3.5	90.5	3.0
Total	67.9	22.0	66.6	21.8	67.3	22.2	71.4	24.5

See footnotes at end of table.

Table 24. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1994-1996 — Continued

State	1995							
	May		April		March		February	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	77.5	21.9	81.4	24.0	85.8	25.4	85.7	28.2
Alaska	81.9	79.1	83.8	74.7	83.2	78.2	83.9	75.2
Arizona	87.8	24.7	86.9	30.4	88.7	30.4	92.8	22.7
Arkansas	93.3	13.7	95.1	15.1	96.3	14.9	98.0	17.2
California	50.3	14.4	56.8	14.5	64.7	16.7	58.6	18.2
Colorado	95.1	7.2	94.3	9.2	95.1	9.5	96.0	8.3
Connecticut	75.5	89.2	81.6	78.2	85.7	85.6	88.1	91.5
Delaware	100.0	79.1	100.0	75.7	100.0	63.1	100.0	65.1
District of Columbia	73.3	—	76.5	—	82.7	—	86.4	—
Florida	97.9	16.5	97.9	17.2	97.5	17.3	97.3	17.0
Georgia	89.7	32.2	90.7	29.7	93.3	37.7	97.1	45.1
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	86.0	2.5	85.5	3.1	86.5	1.8	89.1	2.8
Illinois	40.2	9.2	49.3	11.7	52.9	11.1	53.2	15.3
Indiana	83.4	9.4	87.0	12.9	89.5	12.7	89.9	15.4
Iowa	86.1	5.0	88.8	7.5	91.1	8.0	92.0	10.6
Kansas	62.9	11.1	69.5	12.3	83.2	10.9	73.6	13.0
Kentucky	87.4	25.5	86.3	26.3	89.9	23.5	91.2	27.9
Louisiana	98.2	31.0	98.6	30.5	98.1	31.8	98.2	36.1
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	95.9	14.7	96.7	7.7	97.8	27.2	98.5	24.8
Massachusetts	88.0	56.9	88.3	53.8	92.0	54.5	89.4	54.6
Michigan	61.5	8.1	68.0	13.9	71.2	15.9	72.2	17.8
Minnesota	95.5	38.7	96.2	39.5	95.0	25.7	93.6	29.2
Mississippi	98.8	44.5	98.5	41.8	98.2	43.5	97.4	46.2
Missouri	80.9	20.8	83.3	21.7	87.2	24.5	88.9	29.2
Montana	92.0	2.4	91.9	8.3	92.5	1.7	92.5	2.2
Nebraska	76.0	13.3	79.8	14.9	79.2	17.6	80.6	22.5
Nevada	77.1	7.0	78.9	8.4	77.4	7.7	83.2	9.5
New Hampshire	98.8	61.8	99.3	66.4	99.3	70.3	99.6	53.2
New Jersey	84.5	56.6	87.4	53.9	91.3	58.9	92.4	57.3
New Mexico	47.7	2.0	57.6	2.9	60.3	2.4	75.1	1.7
New York	71.7	15.9	76.3	16.9	79.3	17.4	82.8	19.4
North Carolina	90.6	44.3	76.0	47.6	94.5	51.1	96.0	50.0
North Dakota	80.0	14.2	83.2	18.5	84.3	21.0	85.9	25.5
Ohio	67.8	5.7	76.8	8.1	78.6	9.3	80.0	11.5
Oklahoma	84.9	18.8	85.3	23.9	89.7	20.7	89.8	25.6
Oregon	97.9	24.0	98.2	28.2	98.2	29.5	98.5	29.5
Pennsylvania	68.7	14.6	71.4	17.8	74.9	20.2	74.4	19.0
Rhode Island	100.0	12.2	100.0	11.9	100.0	11.1	100.0	8.2
South Carolina	95.6	83.0	95.0	79.6	96.7	80.7	97.5	76.1
South Dakota	82.8	21.8	87.2	31.5	89.7	39.3	90.8	38.1
Tennessee	89.6	58.0	90.8	36.7	93.4	49.9	95.8	46.8
Texas	55.0	22.7	70.2	28.0	73.6	27.9	71.3	26.8
Utah	80.0	9.1	83.1	9.9	82.5	15.3	85.5	12.9
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	76.2	11.6	77.6	14.8	88.7	17.7	90.0	20.2
Washington	91.8	33.4	92.6	37.9	94.2	41.3	94.0	39.3
West Virginia	42.2	14.0	50.6	13.8	56.1	14.0	59.5	14.7
Wisconsin	90.0	46.6	92.4	51.0	93.2	49.8	94.0	52.1
Wyoming	89.2	2.5	92.4	2.4	93.6	3.1	98.2	2.7
Total	71.8	23.6	77.2	25.4	81.2	26.5	81.7	27.4

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, 1992-1996

Source: Form EIA-857.

Table 25. Gas Home Customer-Weighted Heating Degree Days

Census Divisions	November 1 through November 30				
	Normal ^a	1995	1996	Percent Change	
				Normal to 1996	1995 to 1996
New England					
CT, ME, MA, NH, RI, VT	693	789	820	18.3	3.9
Middle Atlantic					
NJ, NY, PA	646	750	775	20.0	3.3
East North Central					
IL, IN, MI, OH, WI	730	913	917	25.6	0.4
West North Central					
IA, KS, MN, MO, ND, NE, SD	788	910	982	24.6	7.9
South Atlantic					
DE, FL, GA, MD and DC, NC, SC, VA, WV	421	550	538	27.8	-2.2
East South Central					
AL, KY, MS, TN	431	576	524	21.6	-9.0
West South Central					
AR, LA, OK, TX	280	301	309	10.4	2.7
Mountain					
AZ, CO, ID, MT, NV, NM, UT, WY	715	599	711	-0.6	18.7
Pacific ^b					
CA, OR, WA	341	247	325	-4.7	31.6
U.S. Average ^b	559	630	660	18.1	4.8

^a Normal is based on calculations of data from 1961 through 1990.

^b Excludes Alaska and Hawaii.

Note: See Appendix A, Explanatory Note 11 for discussion of Heating Degree-Days computations.

Sources: National Oceanic and Atmospheric Administration.

 

Appendix A

Explanatory Notes

THE JOURNAL

The Journal is a quarterly publication of the American Psychological Association, published by the American Psychological Association, 750 First Street, N.E., Washington, D.C. 20002. The Journal is a peer-reviewed journal of research and theory in psychology. It is the primary source of information for psychologists and other mental health professionals. The Journal is published by the American Psychological Association, 750 First Street, N.E., Washington, D.C. 20002. The Journal is a peer-reviewed journal of research and theory in psychology. It is the primary source of information for psychologists and other mental health professionals.

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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. The latest two months of data are estimates taken from the Short-Term Integrated Forecasting System (STIFS). For consumption data by sector, the latest three months are estimates taken from the STIFS.

For the first month that data are estimated or reported from submitted reports, the table below lists the methodologies for deriving the monthly data to be published. For the components of supply and disposition, this is two months earlier than the current month. For consumption by sector, this is three months earlier than the current month. For example, in the November issue, the September supply and disposition data and the August consumption by sector data are derived from the methodologies described in the table.

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

Components	Reporting Methodology
Supply and Disposition	
Marketed Production	Reported on Form EIA-895 and 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
Consumption by Sector	
Lease and Plant Fuel	Derived from Marketed Production
Pipeline Fuel	Derived from Estimates for Lease and Plant Fuel and 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 1995, of the 33 producing States, 22 reported data on nonhydrocarbon gases removed. The 22 States accounted for 60 percent of total 1995 gross withdrawals. Of the 22 States reporting nonhydrocarbon gases removed, 11 reported zero values: Alaska, Arizona, Arkansas, Colorado, Illinois, Maryland, Missouri, Nevada, New York, South Dakota, and Virginia. The ten States reporting volumes greater than zero are Alabama, California, Florida, Kentucky, Mississippi, Nebraska, New Mexico, North Dakota, Texas, and Wyoming. In addition, Kansas, Louisiana, Montana, and Oklahoma, which together accounted for 40 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 non-hydrocarbon gas removed, gas used for repressuring, and gas vented and flared are based on the ratio of the 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 non-hydrocarbon 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 Form EIA-895 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 1993, 1994, and 1995 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 Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*, which requires data to be reported each quarter 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 Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*, 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.

Average Price of Deliveries to Consumers

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 plant fuel 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 plant fuel consumption estimates. Final monthly lease data are collected on the Form EIA-627 and estimates from the Form EIA-176. See the *Natural Gas Annual* for a complete discussion of this process.

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 1994. 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 1990 through 1995 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 five States: Kansas, Mississippi, New Mexico, Oklahoma, and Texas. Gas prices for these five 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 five 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 Kansas, 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 five States and adjusted to match the U.S. gas price published in the *Natural Gas Annual*.

Note 9. 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.

Note 10. Heating Degree-Days

Degree-days are relative measurements of outdoor air temperature. Heating degree-days are deviations of the mean daily temperature below 65 degrees Fahrenheit. A weather station recording a mean daily temper-

ature of 40 degrees Fahrenheit would report 25 heating degree-days. There are several degree-day data bases maintained by the National Oceanic and Atmospheric Administration. The information published in the *Natural Gas Monthly* is developed by the National Weather Service Climate Analysis Center, Camp Springs, Maryland.

The data are available weekly with monthly summaries and are based on mean daily temperatures recorded at about 200 major weather stations around the country. The temperature information recorded at these weather stations is used to calculate Statewide degree-day averages weighted by gas home customers. The State figures are then aggregated into Census Divisions and into the national average.

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 four monthly surveys.

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 two 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, 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 four 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.

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.

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. The 1982 version of the Form EIA-176 continues to be the basis for the current version of this form.

In 1988, the Form EIA-176 was revised to include data collection for deliveries of natural gas to commercial and industrial consumers for the account of others. 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, the Form EIA-176 was revised to include more detailed information for gas withdrawn from storage facilities, gas added to storage facilities, deliveries of company-owned natural gas and natural gas transported for the account of others. The revised form was approved for use beginning with report year 1990.

Upon the Office of Management and Budget's approval in 1993, the Form EIA-176 was again revised. All deliveries to consumers are now categorized as firm or interruptible. Commercial and industrial consumers are further categorized as nonutility power producers or as those excluding nonutility power producers.

Data reported on this form are no longer considered proprietary. Response to the form continues to be mandatory.

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 1996 for report year 1995 totaled 1,991 questionnaire packages. To this original mailing, 11 names were added and 61 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 1,941 responses from approximately 1,800 companies.

Following the original mailing, second request mailing, and nonrespondents followup, 1,911 responses were entered into the data base, and there were 30 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*.

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. In 1993, value and associated volume of marketed production by month was added to the EIA-627.

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 1995, data on the quantities of nonhydrocarbon gases removed were reported by the appropriate agencies of 22 of the 33 States. These 22 States accounted for 63 percent of total 1995 gross withdrawals. In addition, gross withdrawal data from Kansas, Louisiana, Montana, and Oklahoma, which together accounted for 40 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*.

Form EIA-895, "Monthly Quantity of Natural Gas Report"

Survey Design

Data collection on the Form EIA-895 began in January 1995. This form was designed to replace the Interstate Oil and Gas Compact Commission (IOGCC) form, "Monthly Report of Natural Gas Production." In 1994, the IOGCC decided to discontinue collection of their form. All gas producing States are requested to report on the Form EIA-895; a voluntary report. Data are reported by State agencies. The form was designed to provide a standard reporting system, to the extent possible, for the natural gas data reported by the States. Data are not considered proprietary.

Survey Universe and Response Statistics

Reports on State production are due 20 days after the end of the report month. (In most cases, the data are not available to the States until after this time period. Therefore, States are requested to send the report within 80 days after the end of the report month.)

Summary of Data Requirements

The Form EIA-895 consists of seven questions on one page, and requires volumetric information on gross production (gas and oil wells individually), gas used for repressuring, gas vented and flared, non-hydrocarbon gases removed, natural gas used as fuel on leases, and marketed production.

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

The Form EIA-191, "Underground Natural Gas Storage Report," was revised effective January 1994. Among the changes from the form used from 1991 through 1993 are a distinction between a monthly and annual survey. Prior to 1991, data on the storage of natural gas were 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 form was previously revised in 1991 to include storage data by State, field, and reservoir.

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. In September 1995, the FERC discontinued the reporting requirements of Form FERC-8. FERC jurisdictional firms will continue to file Form EIA-191.

Survey Universe and Response Statistics

The 103 companies that operate underground facilities will file the Form EIA-191. Of these companies, 42 are subject to the jurisdiction of FERC and are required to report data on Form EIA-191.

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 monthly schedule contains current month and prior month's data on the total quantities of gas in storage, injections and withdrawals, the location (including State and county, field, reservoir) and peak day withdrawals during the reporting period. Prior month's data are required only when data are revised. Information on co-owners of storage fields has been eliminated. The annual schedule contains type of facility, storage field capacity, maximum deliverability and pipelines to which each field is connected. The annual schedule is filed with the January submission.

Collection of the survey is on a custody basis. Information requested must be provided within 20 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. For most of the estimated filings, the actual data or necessary revisions are reflected in the prior month section of the monthly form. 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, 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* and *Winter Fuels Report* contain data from the EIA-191 survey.

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

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). From 1979 to 1994, the Energy Information Administration (EIA) has had the responsibility for collecting Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Data are not considered proprietary. The Form FPC-14 was discontinued in 1995.

Beginning in 1995, import and export data are taken from the "Quarterly Natural Gas Import and Export Sales and Price Report." This report is prepared by the Office of Fossil Energy, U.S. Department of Energy, based on information submitted by all firms having authorization to import or export natural gas.

Survey Universe and Response Statistics

All companies are required, as a condition of their authorizations to import or export natural gas, to file quarterly reports with the Office of Fossil Energy. These data are collected as part of its regulatory responsibilities. The data are reported at a monthly level of detail. Data reported on the Form FPC-14 represented physical movements of natural gas. Data collected by the Office of Fossil Energy are reported on an equity (sales) basis. For 1994 and earlier years, comparisons of the data from the two sources may show differences because reporting requirements were different.

Prior to 1995, the Form FPC-14 was filed annually by each organization or individual having authority to import and export natural gas regardless of whether any activity took place during the reporting year. Authorizations to import and export was originally granted by the FPC. In 1977, the authority to grant authorizations transferred to the Economic Regulatory Administration (ERA). It now resides with the Office of Fossil Energy, U.S. Department of Energy.

Routine Edit Checks

Respondents are required to certify the accuracy of all data reported. The data are checked for reasonableness and accuracy. If errors are found, the companies are required to file corrected data. The data are compared with data reported by the National Energy Board of Canada and are published quarterly. 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 import and export prices are in U.S. dollars and, except for LNG exports, are those paid at the U.S. border. LNG export prices are those paid at the point of sale and delivery in Yokohama, Japan.

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 382 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 from a frame consisting of all respondents to Form EIA-176 who reported deliveries of natural gas to consumers in the residential, commercial, or industrial sectors. 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 50 percent, and responses received after follow-up, 100 percent. Virtually all are received in time for incorporation in the current

month's processing cycle. When a response is extremely late, and the company represents less than 25 percent of the natural gas volumes delivered by all sampled companies in the State, values are imputed as described in Appendix C. When the company's submission is eventually received, the submitted data are used for future processing and revisions.

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.

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 inter- and intrastate companies, and producers, as well as local distribution companies. The survey provides data that are used each month to estimate the volume of natural gas delivered and the price for onsystem sales of natural gas 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 1,563 companies. These companies were respondents to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," for reporting year 1994 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 1994. 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 390 respondent companies. Unlike previous years, no mergers or acquisitions were uncovered as a result of the initial mail-out. Therefore there was no need for either substitution of respondent companies or a reduction in the total number of respondents.

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 cumulative 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.

Iowa: 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).

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

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 ,

R_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 28 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.

See the section on consumer price calculations in this Appendix for further price information.

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:

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

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:

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

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.

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:

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

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.

Table C-1. Standard Error for Natural Gas Deliveries and Price to Consumers by State, September 1996

State	Volume Million Cubic Feet				Price Dollars per Thousand Cubic Feet		
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial
Alabama	111	368	1,300	1,356	0.37	2.32	0.57
Alaska	0	0	0	0	—	—	—
Arizona	3	88	0	88	0.05	0.06	—
Arkansas	11	6	6	14	0.02	0.01	0.01
California	276	142	533	617	0.08	0.08	0.05
Colorado	NA	NA	NA	NA	NA	NA	NA
Connecticut	0	0	0	0	—	—	—
Delaware	0	0	0	0	—	—	—
District of Columbia	0	0	0	0	—	—	—
Florida	334	467	1,021	1,172	0.26	0.25	2.02
Georgia	237	130	770	816	0.24	0.14	0.60
Hawaii	0	0	0	0	—	—	—
Idaho	0	0	0	0	—	—	—
Illinois	148	128	102	220	0.02	0.10	1.19
Indiana	NA	NA	NA	NA	NA	NA	NA
Iowa	38	43	56	80	0.26	0.09	0.27
Kansas	339	409	25,341	25,347	0.52	1.00	7.26
Kentucky	1,850	1,545	2,934	3,797	8.97	1.70	6.29
Louisiana	613	28	4,362	4,405	2.63	0.07	0.04
Maine	0	0	0	0	—	—	—
Maryland	NA	NA	NA	NA	NA	NA	NA
Massachusetts	83	287	177	347	0.49	0.22	0.33
Michigan	276	193	4,052	4,066	0.93	1.38	0.22
Minnesota	226	145	741	788	0.08	0.04	0.18
Mississippi	NA	NA	348	NA	NA	NA	0.26
Missouri	137	389	1,370	1,430	0.35	0.09	0.06
Montana	3	2	0	3	0.01	0.01	—
Nebraska	0	NA	0	NA	—	NA	—
Nevada	0	0	0	0	—	—	—
New Hampshire	0	0	0	0	—	—	—
New Jersey	0	0	0	0	—	—	—
New Mexico	99	461	0	471	0.51	0.72	—
New York	NA	NA	8,522	NA	NA	NA	1.30
North Carolina	12	148	79	168	0.19	0.07	0.06
North Dakota	0	0	0	0	—	—	—
Ohio	625	431	1,381	1,576	0.27	0.27	0.53
Oklahoma	46	551	506	749	0.13	0.17	1.23
Oregon	0	0	0	0	—	—	—
Pennsylvania	37	401	492	636	0.12	0.27	1.04
Rhode Island	NA	NA	NA	NA	NA	NA	NA
South Carolina	50	114	234	265	0.96	1.02	0.08
South Dakota	NA	NA	NA	NA	NA	NA	NA
Tennessee	95	240	473	538	0.25	0.69	0.24
Texas	0	NA	612	NA	—	NA	—
Utah	0	0	0	0	—	—	—
Vermont	0	0	0	0	—	—	—
Virginia	64	102	2,578	2,581	0.69	0.91	4.68
Washington	0	0	0	0	—	—	—
West Virginia	61	1,613	94	1,617	1.30	18.68	0.40
Wisconsin	54	NA	1,007	NA	0.60	NA	0.11
Wyoming	NA	NA	NA	NA	NA	NA	NA
Total	2,831	2,925	27,859	28,155	0.11	0.11	0.39

NA = Not Available.

— = Not Applicable.

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

Appendix D

Natural Gas Reports and Feature Articles

1. *Staphylococcus aureus*

2. *Staphylococcus aureus*

3. *Staphylococcus aureus*

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Natural Gas Reports and Feature Articles

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

- *Natural Gas Annual 1995*, DOE/EIA-0131(95), November 1996.
- *Natural Gas Annual 1993 Supplement: Company Profiles*, DOE/EIA-0131(93/S), February 1995.

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

- *Monthly Energy Review*, DOE/EIA-0035. Published monthly. Provides national aggregate data for natural gas, natural gas liquids, and other energy sources.
- *Short-Term Energy Outlook*, DOE/EIA-0202. Published quarterly. Provides forecasts for next six quarters for natural gas and other energy sources.
- *Natural Gas 1995: Issues and Trends*, DOE/EIA-0560(95), November 1995.
- *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves - 1995 Annual Report*, DOE/EIA-0216(95)/Advance Summary, October 1996.
- *Annual Energy Review 1995*, DOE/EIA-0384(95), July 1996. Published annually.
- *Annual Report to Congress 1995* DOE/EIA-01733(95), July 1996. Published annually.

- *Annual Energy Outlook 1996*, DOE/EIA-0383(96), January 1996. Published annually.

Selected One-Time Natural Gas and Related Reports

- *The Value of Underground Storage in Today's Natural Gas Industry*, DOE/EIA-0591, March 1995.
- *Natural Gas Productive Capacity for the Lower 48 States, 1980 through 1995*, DOE/EIA-0542(95), July 1994.
- *Largest U.S. Oil and Gas Fields*, DOE/EIA-TR-0567, August 1993.
- *Energy Policy Act Transportation Rate Study*, DOE/EIA-0571, October 1993.
- *Energy Policy Act Transportation Study: Interim Report of Natural Gas Flows and Rates*, DOE/EIA-0602, October 1995.

Selected and Recurring Natural Gas and Related Data Reference Reports

- *Directory of Energy Data Collection Forms*, DOE/EIA-0249(95), January 1996.
- *Oil and Gas Field Code Master List, 1995*, EIA-0370(95), December 1996.

NGM Feature Articles

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 1992 data on all U.S. imports and exports of natural gas.)

October 1993

U.S. Production of Natural Gas from Tight Reservoirs

(Discusses the economic incentives offered to induce operators to explore for and develop gas reservoirs from unconventional sources.)

The Expanding Role of Underground Storage

(Discusses the expanded role of underground natural gas storage in the restructured natural gas industry.)

January 1994

U.S. Coalbed Methane Production

(Updates the Energy Information Administration's coalbed methane production information through 1992 and presents it by geologic basin and by State.)

February 1994

Contracting for Natural Gas Supplies

(Addresses the contractual relationships of producers with end users and distributors for the natural gas that is shipped along the interstate pipeline systems.)

May 1994

Opportunities with Fuel Cells

(Discusses the uses of fuel cells in today's market.)

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

June 1994

Natural Gas 1994: Issues and Trends - Executive Summary

(Provides an overview of the natural gas industry in 1993 focusing on trends in production, consumption, and pricing of natural gas.)

August 1994

U.S. Natural Gas Imports and Exports - 1993

(Contains final 1993 data on all U.S. imports and exports of natural gas.)

March 1995

The Comparability of Resource and Reserve Data for Crude Oil, Natural Gas, Coal, and Uranium

(Clarifies which terms are equivalent among the four major energy minerals in the United States.)

July 1995

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

June 1996

Natural Gas Industry Restructuring and Data Collection

(Discusses how restructuring of the natural gas industry has impacted the natural gas data collection efforts.)

July 1996

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

November 1996

U.S. Natural Gas Imports and Exports - 1995

(Contains final 1995 data on all U.S. imports and exports of natural gas.)

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Appendix E

Technical Contacts

Appendix E

Technical Contacts

Section	Tables		Principal Data Sources	Technical Contact
Summary Statistics: Natural Gas Production	1, 2, 3	Monthly:	EIA-895, "Monthly Quantity of Natural Gas Report"	Donna Guerrina (202) 586-6135
		Annual:	EIA-627, "Annual Quantity and Value of Natural Gas Report"	
		Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 426-1318
Extraction Loss	1	Monthly:	EIA computations	Margo Natof (202) 586-6303
		Annual:	Form EIA-816, "Monthly Natural Gas Liquids Report" and Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"	
Supplemental Gaseous Fuels	2	Monthly:	EIA computations	Donna Guerrina (202) 586-6135
		Annual:	Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"	Margo Natof (202) 586-6303
Imports and Exports	2	Monthly:	EIA computations	Norman Crabtree (202) 586-6180
		Annual:	Office of Fossil Energy, U.S. Department of Energy, "Natural Gas Import and Exports"	
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) 426-1318
Wellhead	4	Monthly:	EIA computations	Donna Guerrina (202) 586-6135
		Annual:	Form EIA-627, "Annual Quantity and Value of Natural Gas Report"	
Electric Utility	4	Monthly:	Form FPC-423, "Cost and Quality of Fuels for Electric Power Plants"	Roy Kass (202) 426-1318
Summary of Natural Gas Imports and Exports	5,6	Monthly:	Quarterly Natural Gas Import and Export Sales and Price Report	Norman Crabtree (202) 586-6180
Producer Related Activities: Natural Gas Production	7,8	Monthly:	EIA-895, "Monthly Quantity of Natural Gas Report"	Audrey Corley (202) 426-1159

Underground Storage:	9, 10, 11 12, 13	Monthly:	Forms FERC-8 and EIA-191, "Underground Gas Storage Report"	Rosemary Jameson (202) 426-1086
Distribution and Consumption: Deliveries to:				
Residential,	14	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 426-1318
Commercial,	15			
Industrial,	16			
Electric Utility,	17		Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	
All Consumers	18			
Average Price to:				
City Gate,	19	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 426-1318
Residential,	20			
Commercial,	21			
Industrial,	22		Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	
Electric Utility	23			
Onsystem Sales	24	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 426-1318
Heating Degree Days	25	Seasonal:	National Oceanic and Atmospheric Administration	James Keeling (202) 586-6107
Highlights:				
Year-to-Date				Mary Carlson (202) 586-4749
Market Update				James Todaro (202) 586-6305

Appendix F

Natural Gas Electronic Products

Natural Gas Electronic Products

In addition to printed publications, the Energy Information Administration distributes information concerning the natural gas industry in a variety of electronic formats through several media. Two main types of products are available electronically: *viewable documents* that may be read or printed; and *post-processable files* that may be directly used as input to a computer application without additional keying and checking of data.

Viewable documents represent complete or selected sections of publications including text, tables and graphs. They may be as specific as single tables or as general as an entire publication. Post-processable documents on the other hand are either macro-level representations of

information in published tables or micro-level respondent information representing responses on a specific nonconfidential survey.

The media used to distribute these electronic publications include: (1) The Energy Information Administration's Internet site (<http://www.eia.doe.gov> or <ftp://ftp.eia.doe.gov>); (2) Dial-in access through the Energy Information Administration's EPUB electronic bulletin board or through the Economic Bulletin Board of the Department of Commerce and the COGIS system; (3) The Energy Information Administration's quarterly CD-ROM(Info-Disk); (4) The Energy Information Administration's Fax on Demand System; and (5) diskettes.

	Internet	Dial-In	InfoDisk	Fax	Diskette
ANNUAL PUBLICATIONS					
Natural Gas Annual, Volume 1, 1994 Provides information on supply, and disposition of natural gas in the United States. Information is provided nationally, regionally, and by State for 1994.	V P		V P		P
Natural Gas Annual, Volume 2, 1994 Contains historical information about supply and disposition of natural gas at the national, regional, and State level as well as prices at selected points in the flow of gas from wellhead to burnertip.	P		P		P
Natural Gas 1995: Issues and Trends Addresses current issues affecting the natural gas industry and markets, and analyzes trends in the most recent natural gas data.	V		V		
Natural Gas 1994: Issues and Trends Provides an overview of the natural gas industry in 1993 and early 1994, focusing on the overall ability to deliver gas under the new regulatory mandates of the Federal Energy Regulatory Commission's Order 636.	V		V		
Oil and Gas Products List 1994-1995 Brief descriptions of the various information products prepared by the Office of Oil and Gas.	V		V		
U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves Annual Report 1994 1994 national and State estimates of reserves, reserve changes, and production, plus industry highlights.	V		V		
MONTHLY PUBLICATIONS					
Natural Gas Monthly, from September 1995 forward. Entire Publication in viewable format	V		V		

V=Viewable

P=Post-Processable

	Internet	Dial-In	InfoDisk	Fax	Diskette
OTHER PUBLICATIONS					
Natural Gas 1995: Preliminary Highlights This Special Focus, which was featured in the April 1996 issue of the <i>Natural Gas Monthly</i> , presents events that affected the natural gas industry during 1995.	V	P		V	
Energy Policy Act Transportation Study: Interim Report on Natural Gas Flow and Rates (EPACT) Analysis of natural gas transportation rates and distribution patterns for the period from 1988 through 1994.	V		V		
Oil Production Capacity Expansion Cost for the Persian Gulf Quantifies the cost of expanding oil production capacity for the Persian Gulf based on geologic plays and fields rather than country-level economics. Development costs and volumes are estimated for the next 15 years.	V		V		
Costs and Indices for Domestic Oil and Gas Field Equipment and Production Operations 1990-1993 Cost of equipment and operation of oil and gas wells in the lower 48 States.	V		V		
Drilling Sideways- A Review of Horizontal Well Technology and the Domestic Application April 1993 report presenting salient aspects of current and near-future horizontal drilling and completion technology.	V		V		
International Oil and Gas Exploration and Development Compilation of country-level data and assessment of regional trends relating to upstream aspects of global oil and gas supply.	V		V		
Natural Gas Productive Capacity for the Lower 48 States 1984-1996 Analysis of monthly natural gas wellhead productive capacity.	V		V		
Natural Gas Productive Capacity for the Lower 48 States 1980-1995 Analysis of monthly natural gas wellhead productive capacity.	V		V		
Oil and Gas Field Code Master List Comprehensive listing of U.S. oil and gas field names as of November 1995.	V		V		
Oil and Gas Resources of the Fergana Basin (Uzbekistan, Tadzhikistan, and Kyrgyzstan) Reservoir level assessments of oil and gas ultimate recovery in the former Soviet Union area.	V		V		
The Value of Underground Storage in Today's Natural Gas Industry Explores the significant and changing role of storage in the industry.	V		V		
U.S. Oil and Gas Development in the Early 1990's Analyses of the growing prominence of smaller energy companies in U.S. oil and gas production	V		V		
ANNUAL DATA					
Natural Gas Supply and Disposition, by State 1994	V P	V P		V	

V=Viewable

P=Post-Processable

	Internet	Dial-In	InfoDisk	Fax	Diskette
Natural Gas Summary, United States by Year 1990-1994	V P	V P		V	
1994 Natural Gas Annual Volume 1 data Self-extracting file containing data (in comma-delimited format) that appear in the tables in Volume I of the 1994 <i>Natural Gas Annual</i> .	P		P		P
1994 Natural Gas Annual Volume 2 data Self-extracting file containing historical information (in comma-delimited format) found in the tables in Volume II of the 1994 <i>Natural Gas Annual</i> . Annual historical data at the national level are presented for 1930-1994. Annual information by State and region is presented for 1967-1994.	P		P		P
1993 Data reported on Form EIA-176 A self-extracting compressed file containing data reported on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" for 1993.	P				P
1994 Data reported on Form EIA-176 A self-extracting compressed file containing data reported on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" for 1994.	P				P
Data archive of historical reserves estimates for U.S. Crude Oil, Natural Gas, and Natural Gas Liquids. National, State, and State subregion data published in the reserves balance tables of U.S. <i>Crude Oil, Natural Gas, and Natural Gas Liquids Reserves</i> from 1977 forward.	P				P
MONTHLY DATA					
Natural Gas Production, United States by Month 1989-forward	P	P		V	
Natural Gas Supply and Disposition, 1989-forward	P	P		V	
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Natural Gas Underground Storage: United States Total by Month 1989-forward	P	P		V	
Natural Gas Prices: United States Total by Month 1989-forward	P	P		V	
Natural Gas Consumption by Sector: United States Total by Month, 1989-forward	P	P		V	
SELF-EXTRACTING COMPRESSED DATA FILE ARCHIVES					
Natural Gas Consumption and Prices, for most recent 2-3 years	P	P			
Natural Gas Consumption and Prices, for 1984-1992	P	P			
OTHER REPORTS					
Natural Gas Weekly Market Update Analysis of current price, supply and storage data along with a two week snapshot of the weather in four distinct metropolitan areas.	V			V	

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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.

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.

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.

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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