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Natural Gas Publications and Databases Available Electronically

All of the natural gas publications are available electronically on the EIA website. Certain natural gas data are also provided in database formats on the web site. The table below is a guide to the major natural gas products.

Product	Format	Contents
Publications		
Natural Gas Weekly Market Update	PDF	Analysis of current price, supply and storage data
Natural Gas Monthly	PDF	Monthly supply, disposition, and price data
Natural Gas Annual	PDF	Annual supply, disposition, and price data
Historical Natural Gas Annual	PDF	Historical annual supply, disposition, and price data from 1930 - 1997
Issues and Trends	PDF	Comprehensive analysis of growth and change in the natural gas industry
U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves	PDF	Proved reserves in the United States
Oil and Gas Field Code Master List	PDF	Listing of U.S. oil and gas field names
Databases		
Monthly Data	TXT	Tables 1-6, and 9 from the *Natural Gas Monthly*
Historical Monthly Data	EXE	Consumption and price data, 1984-1994; 1995-present
Annual Data	TXT	Tables from the *Natural Gas Annual*
Historical Annual Data	TXT	Tables from the *Historical Natural Gas Annual*
Field Codes	EXE	Oil & Gas Field Code Master List
Applications		
EIA-176 Query System	EXE	Company filings to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"
EIAGIS	EXE	Periodic updates for users of the EIAGIS-NG Geographic Information System

PDF files are image files that can be viewed through Adobe Acrobat.

TXT files are ASCII text. They may be replications of published tables, including table titles, column and row identification, or they may be flat files with a minimum of content description suitable for input to spreadsheets or other programs.

EXE files are executables that can be downloaded then opened. Databases are distributed as self-executing Zipped archives which spawn numerous data files and documentation. Applications are distributed as self-executing Zipped archives which initially generate numerous files and then form an application which is installed on the user's PC.

Preface

The *Natural Gas Monthly (NGM)* is prepared in the Natural Gas Division, Office of Oil and Gas, Energy Information Administration (EIA), U.S. Department of Energy (DOE), under the direction of Joan E. Heinkel.

General questions and comments regarding the *NGM* may be referred to Ann M. Ducca (202) 586-6137. 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.

Common Abbreviations Used in the Natural Gas Monthly

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

Contents

Special Focus: **"**Corporate Realignments and Investments in the Interstate Natural Gas Transmission System" vii

Special Report: "Natural Gas Winter Outlook 1999-2000" xxv

Highlights 1

Appendices

A. Explanatory Notes 73

B. Data Sources 81

C. Statistical Considerations 87

D. Natural Gas Reports and Feature Articles 93

E. Technical Contacts 97

Glossary 99

Tables

1. Summary of Natural Gas Production in the United States, 1993-1999 7

2. Supply and Disposition of Dry Natural Gas in the United States, 1993-1999 8

3. Natural Gas Consumption in the United States, 1993-1999 10

4. Selected National Average Natural Gas Prices, 1993-1999 12

5. U.S. Natural Gas Imports, by Country, 1994-1999 14

6. U.S. Natural Gas Exports, by Country, 1993-1999 16

7. Marketed Production of Natural Gas, by State, 1993-1999 17

8. Gross Withdrawals and Marketed Production of Natural Gas by State, June 1999 20

9. Underground Natural Gas Storage - All Operators, 1993-1999 21

10. Underground Natural Gas Storage - by Season, 1996-1999 23

11. Underground Natural Gas Storage - Salt Cavern Storage Fields, 1994-1999 24

12. Underground Natural Gas Storage - Storage Fields Other than Salt Caverns, 1994-1999 25

13. Net Withdrawals from Underground Storage, by State, 1997-1999 26

14. Activities of Underground Natural Gas Storage Operators, by State, August 1999 30

15. Natural Gas Deliveries to Residential Consumers, by State, 1997-1999 31

16. Natural Gas Deliveries to Commercial Consumers, by State, 1997-1999 35

17. Natural Gas Deliveries to Industrial Consumers, by State, 1997-1999 39

18. Natural Gas Deliveries to Electric Utility Consumers, by State, 1997-1999 43

19. Natural Gas Deliveries to All Consumers, by State, 1997-1999 47

20. Average City Gate Price, by State, 1997-1999 51

21. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1997-1999 54

22. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1997-1999 57

23. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1997-1999 60

24. Average Price of Natural Gas Delivered to Electric Utility Consumers, by State, 1997-1999 63

25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 66

A1. Methodology for Reporting Initial Monthly Natural Gas Supply and Disposition Data 73

C1. Standard Error for Natural Gas Deliveries and Price to Consumers by State, July 1999 92

Figures

1. Production and Consumption of Natural Gas in the United States, 1996-2000 9

2. Natural Gas Deliveries to Consumers in the United States, 1995-1999 11

3. Average Price of Natural Gas Delivered to Consumers in the United States, 1995-1999 13

4. Average Price of Natural Gas in the United States, 1995-1999 13

5. Working Gas in Underground Natural Gas Storage in the United States, 1996-1999 22

6. Percentage of Total Deliveries Represented by Onsystem Sales, 1995-1999 72

Corporate Realignments and Investments in the Interstate Natural Gas Transmission System

By Susanne Johnson, Jon Rasmussen, and James Tobin

This article is adapted from the Energy Information Administration (EIA) report *Corporate Realignments and Investments in the Interstate Natural Gas Transmission System* published on the EIA web site at: <http://www.eia.doe.gov>. The report examines the financial characteristics of current ownership in the natural gas pipeline industry and of the major U.S. interstate pipeline companies that transported the bulk of the natural gas consumed in the United States between 1992 and 1997, focusing on 14 parent corporations. It also examines the near-term investment needs of the industry and the anticipated growth in demand for natural gas during the next decade.

Corporate ownership of interstate natural gas pipeline companies has changed substantially since the Federal Energy Regulatory Commission's (FERC) issuance of Order 636 in 1992. Corporations with strong ties to the electric power industry have gained significant ownership of natural gas pipelines while corporations heavily engaged in natural gas exploration and production have made some of the largest divestitures of pipeline assets. Fourteen corporations currently account for over 85 percent of interstate natural gas pipeline activity. Although some changes in pipeline ownership may be expected in the future, these 14 corporations will be the source of a substantial portion of the future capital expenditures for interstate natural gas pipelines and associated facilities.

The 14 parent corporations discussed in this report are: Coastal Corporation; Columbia Energy Group; Consolidated Natural Gas; Duke Energy Corporation; El Paso Energy; Enron Corporation; KN Energy Corporation; MDU Resources Group; Northern States Power Company; PG&E Corporation; Reliant Energy Corporation; Questar Corporation; Sonat Corporation; and The Williams Companies, Incorporated.

This report reviews the financial characteristics of current ownership within the natural gas pipeline industry and of the major interstate pipelines that transport the bulk of natural gas consumed in the United States between 1992 and 1997. It looks at how these corporations have changed in recent years and how they have reformed themselves to meet the demands of doing business in today's marketplace. It also includes an analysis of the near-term investment needs of the industry and the anticipated growth in demand for natural gas over the next decade. The potential natural gas transmission investment capabilities in the near term for the 14 parent corporations relative to the investment potential of large U.S. corporations are examined.

Main points and findings of the report include:

- Companies with significant involvement in electric power have been generally making the largest investments in interstate natural gas pipelines.
- Energy marketing (natural gas and electric) is an important enterprise within the 14 pipeline parent corporations.
- Within the 14 parent corporations, the lines of business that include natural gas pipelines have been more profitable than the parent corporations' other lines of business on average.
- As measured by revenue and assets, the 14 parent corporations grew nearly twice as fast as other large U.S. corporations (represented by the Standard & Poor's Industrials) between 1992 and 1997. However, earnings growth and stock market valuations of the 14 parent corporations have been well below those of other U.S. corporations overall.

Regulatory and Market Developments

In the 1990's, a number of regulatory and energy market developments profoundly affected the operations and structure of the natural gas transmission industry. Primary among these developments was the issuance of the Federal Energy Regulatory Commission's Order 636 in April 1992 which became effective on November 1, 1993. Order 636 required interstate pipeline companies to unbundle their sales and transportation services and revised how rates are determined for transportation services. While the Order had the effect of reducing pipeline revenues (although not necessarily profitability) because interstate pipelines

no longer were sellers of natural gas, the revised rate design allowed them to collect most of their costs in fixed demand charges, which reduced the risk of recovering these costs. Order 636 also established a release (reseller) market for transportation and storage capacity, which provided a mechanism for the marketing of unused or underutilized pipeline capacity.[1]

These measures, among others, fostered competition in the natural gas commodity market, paved the way for the gradual introduction of competition into the retail purchase of natural gas, and permitted the creation of new transportation and marketing services that have improved the efficiency of the overall natural gas transportation process. Consequently, the interstate pipeline segment of the natural gas industry in the United States has instituted a number of major changes in its operational and business practices over the past decade. In particular, the pipeline industry has significantly changed the transaction processes and mechanisms for transportation services.[2] FERC Order 636 restructuring has also had a major impact upon the financial and investment profiles of almost all of the major interstate natural gas pipeline operating in the United States today. The restructuring of the transportation industry prompted some pipeline companies to revise their marketing strategy, which probably accounts, in part, for the increased level of mergers and acquisitions within the industry in recent years.

Additionally, the outlook for further and substantial growth in U.S. natural gas demand became more optimistic in the 1990's, lending support to new investments in gas transmission and related facilities to meet expected demand growth in the near-term. The pace of deregulation in U.S. electricity markets is also pushing the gas transmission industry into new operational and ownership configurations. This recent development has created expectations of complementarities and new efficiency gains between electric generation and marketing, on the one hand, and natural gas transport and marketing, on the other.

Demand Growth and Investment

Recent Trends

Between 1992 and 1997, natural gas consumption grew 12 percent, from 19.5 trillion cubic feet (Tcf) to 22.0 Tcf. In 1992, the interstate natural gas pipelines that were owned by the 14 parent corporations (in 1997) delivered 33.3 Tcf of gas through their systems while in 1997 that total was 22 percent higher, reaching 40.7 Tcf.[3] Revenues, however, fell dramatically as pipeline services no longer included revenues from the sale of natural gas, but only transportation revenues, due to Order 636. For a select group of major interstate pipeline companies (representing 88 percent of industry revenues), overall pipeline revenues fell $7.3 billion (a 41-percent decline) while volumes delivered increased by 5 Tcf (Table SF1).[4]

Since 1992, the last year before the effects of FERC Order 636 were felt on the industry, the investment base in natural gas transmission for the parent corporations increased 85 percent (Table SF2). (As Table SF2 shows, this growth was mainly due to pipeline acquisitions and mergers.) However, the investment base for natural gas pipelines overall, regardless of changes in ownership, declined a slight 3 percent. Despite this lack of growth, investment in complementary facilities grew. Between 1992 and 1997, more than 35 natural gas market centers / hubs were set up across North America to offer trading, transshipment and other services to customers demanding more flexible access to supplies and / or markets. In addition, during the same period, the underground storage market also expanded substantially, as 27 new sites were developed (many in association with market centers) and overall underground storage working gas capacity increased about 6 percent.

Near-Term Developments

While at least 76 new and expansion pipeline projects have been proposed for development in 1999 and 2000, calling for an investment of more than $8 billion, regulatory authorities had not yet approved all of these projects as of mid-year 1999. It is likely that some proposed projects will eventually be withdrawn due to competitive market pressures. In some instances, several projects are competing for the same markets or the same supply sources.

An example of this latter situation is the drive to provide new pipeline capacity between the Midwestern and the Northeastern United States.[5] At least three major new routes have been proposed. If all three proposed routes were approved and completed, by 2001 as much as 2.1 billion cubic feet per day of additional natural gas pipeline capacity could enter the Northeast region from sources originating in the Midwestern United States. Much of this new development is premised on the anticipated increase in the demand for natural gas from planned new gas-fired electrical generation plants.[6] However, while a substantial number of new gas-fired electric plants have

Table SF1. Revenue, Expenses, and Deliveries of Selected Major Interstate Natural Gas Pipelines, 1997 and 1992

Parent/Pipeline Name	Fortune 500 Ranking 1997	Revenue (Million Dollars)			Expenses (Million Dollars)			Total Gas Deliveries (Billion Cubic Feet)		
		1997	1992	Percent Change	1997	1992	Percent Change	1997	1992	Percent Change
Coastal Corporation	**158**									
ANR Pipeline Co		660	1,176	-44	370	787	-53	4,172	2,374	76
Colorado Interstate Gas Co		275	449	-39	153	289	-47	907	677	34
Great Lakes Gas Transmission Co (50% ownership)		270	244	11	42	34	22	987	900	10
High Island Offshore Pipeline Co		45	51	-12	17	28	-40	343	390	-12
U-T Offshore Pipeline Co		4	7	-47	2	3	-18	123	191	-35
Wyoming Interstate Co Ltd		19	16	19	3	2	57	214	96	123
Columbia Energy Group Inc										
Columbia Gas Transmission Corp		677	1,305	-48	333	1,001	-67	3,529	1,603	120
Columbia Gulf Transmission Co		136	185	-26	79	122	-35	3,929	1,447	171
Consolidated Natural Gas Co	**278**									
CNG Transmission Co		525	684	-23	218	465	-53	1,309	868	57
Duke Energy Corporation	**81**									
Algonquin Gas Transmission Co[a]		152		--	52		--	346		--
Panhandle Eastern Pipeline Co[a b]		348		--	201		--	747		--
Texas Eastern Transmission Corp[ab]		928		--	460		--	1,568		–
Trunkline Gas Co[a b]		168		--	75		--	984		--
El Paso Energy Co	**281**									
East Tennessee Gas Co[a]		52		--	15		--	121		--
El Paso Natural Gas Co		493	971	-49	181	711	-74	1,373	1,547	11
Midwestern Gas Transmission Co[a]		18		--	8		--	163		--
Mojave Pipeline Co		48	31	5	9	52	63	110	61	80
Tennessee Gas Pipeline Co[a]		774		--	413		--	2,362		–
Enron Corporation	**57**									
Florida Gas Transmission Co (50%ownership)		310	259	20	85	198	-57	538	371	45
Northern Natural Gas Co		508	1,038	-51	187	770	-76	1,805	1,954	-8
Transwestern Gas Pipeline Co		157	211	-25	50	96	-48	535		--
KN Energy Corporation	**--**									
KN Interstate Gas Co		80	319	-75	29	254	-89	226	238	5
KN Wattenberg Transmission Ltd		14	N/A	--	10	N/A	--	64	N/A	--
MDU Resources Group Inc	**–**									
Williston Basin Interstate Pipeline Co		72	99	-27	34	67	-49	108	104	4
Northern States Power Co	**498**									
Viking Gas Transmission Co		20	61	-69	9	55	-84	172	141	22
PG&E Corporation	**85**									
PG&E Gas Transmission Co - NW		233	680	-66	59	679	-91	992	516	92
Reliant Energy Corp	**230**									
Mississippi River Transmission Co		65	230	-72	30	189	-84	393	407	-3
Reliant Energy Gas Transmission Co		225	315	-29	109	239	-54	875	698	25
Questar Corporation	**--**									
Questar Pipeline Co		107	211	-49	39	146	-73	331	485	-32
Overthrust Pipeline Co		4	5	-23	1	1	-5	45	29	55
Sonat Corporation	**352**									
Sea Robin Pipeline Co		25	32	-22	13	15	-10	285	290	2
Southern Natural Gas Co		521	689	-24	328	504	-35	928	1,284	-28
Williams Companies, Inc	**337**									
Kern River Transmission Co		189	128	49	23	18	31	290	185	57
Northwest Pipeline Co		275	398	-31	89	230	-61	722	1,838	-61
Texas Gas Transmission Co[a]		318		--	181		--	2,663		--
Transcontinental Gas Pipeline Co[a]		1,445		--	1,018		--	3,601		--
Williams Gas Pipeline - Central		181	333	-52	100	260	-61	374	740	49
Subtotal: Pipelines owned by parent in both 1992 and 1997		**10,597**	**10,127**	**5**	**5,025**	**7,168**	**-30**	**38,234**	**19,434**	**97**
Subtotal: Pipelines acquired 1992-1997		**0**	**7,729**	**--**	**0**	**5,901**	**--**	**0**	**13,838**	**--**
Total		**10,597**	**17,856[c]**	**-41**	**5,025**	**13,069[c]**	**-62**	**38,234**	**33,272[c]**	**15**

[a] Pipeline was not part of the parent corporation in 1992.
[b] Pipeline was sold or spun off after 1997 and is no longer a part of the parent corporation.
[c] The data show that the majority of the growth in natural gas pipeline's revenue, expenses, and total gas deliveries were due almost entirely to acquisitions and mergers by parent corporations between 1992 and 1997. Revenue including acquisitions and mergers actually declined 41 percent compared to a 5-percent increase when these same transactions were excluded.

Notes: Table is not inclusive of all U.S. interstate pipelines operating in 1992 and 1997. N/A denotes not applicable. -- denotes not meaningful.

Sources: **Fortune 500 Ranking, Revenue and Expenses:** Compustat PC Plus, a service of Standard & Poor's, Inc. **Total Gas Deliveries:** Federal Energy Regulatory Commission Forms 2 & 2A, "Annual Report of Major/Minor Natural Gas Companies" (1992 and 1997).

Table SF2. Operating Income, Capital Expenditures, and Assets of Selected Major Interstate Natural Gas Pipelines, 1997 and 1992
(Million Dollars)

Parent/Pipeline Name	Operating Income			Capital Expenditures			Assets		
	1997	1992	Percent	1997	1992	Percent Change	1997	1992	Percent
Coastal Corporation									
ANR Pipeline Co	153	191	-20	66	42	56	2,951	2,937	1
Colorado Interstate Gas Co	68	87	-22	13	33	-60	885	855	4
Great Lakes Gas Transmission Co (50% ownership)	109	103	6	33	48	-32	1,658	1,335	24
High Island Offshore Pipeline Co	15	12	31	2	c	115	369	369	0
U-T Offshore Pipeline Co	1	1	-68	c	1	-11	62	62	0
Wyoming Interstate Co Ltd	7	5	33	c	1	-93	227	177	28
Columbia Energy Group Inc									
Columbia Gas Transmission Corp	164	196	-16	35	29	23	3,002	2,614	15
Columbia Gulf Transmission Co	18	26	-31	8	2	234	1,237	1,157	7
Consolidated Natural Gas Co									
CNG Transmission Co	142	99	43	9	30	-71	2,202	1,886	17
Duke Energy Corporation				-20					
Algonquin Gas Transmission Co[a]	49		--	13		--	754		--
Panhandle Eastern Pipeline Co[a b]	92		--	9		--	1,135		
Texas Eastern Transmission Corp[a b]	223		--	42		--	4,441		--
Trunkline Gas Co[a b]	34		--	49		--	1,139		--
El Paso Energy Co									
East Tennessee Gas Co[a]	16		--	7		--	239		--
El Paso Natural Gas Co	172	123	40	67	86	-22	2,041	2,395	-15
Midwestern Gas Transmission Co[a]	4		--	2	c	--	105		--
Mojave Pipeline Co	23	17	33	c	0	--	241	241	0
Tennessee Gas Pipeline Co[a]	122		--	91		--	4,643		--
Enron Corporation									
Florida Gas Transmission Co (50%)	109	23	282	22	7	212	1,846	728	153
Northern Natural Gas Co	74	73	1	250	18	1,318	2,280	2,510	-9
Transwestern Gas Pipeline Co	56	54	4	41	4	1,028	794	1,019	-22
KN Energy Corporation									
KN Interstate Gas Co	25	28	11	160	26	517	516	548	6
KN Wattenberg Transmission Ltd	2	N/A	N/A	1	N/A	N/A	51	N/A	N/A
MDU Resources Group Inc									
Williston Basin Interstate Pl Co	17	16	10	1	3	-68	241	224	8
Northern States Power Co									
Viking Gas Transmission Co	5	3	59	1	1	19	116	80	45
PG&E Corporation									
PG&E Gas Transmission Co - NW	73	-9	--	14	550	-97	1,479	449	229
Reliant Energy Corp									
Mississippi River Transmission Co	13	19	-31	2	1	71	495	470	5
Reliant Energy Gas Transmission Co	56	55	1	13	16	-19	1,083	1,270	-15
Questar Corporation									
Questar Pipeline Co	35	35	3	23	16	53	459	444	3
Overthrust Pipeline Co	1	1	-68	0	0	--	64	63	2
Sonat Corporation									
Sea Robin Pipeline Co	6	10	-39	1	1	38	283	252	12
Southern Natural Gas Co	83	88	-5	57	3	1,619	1,745	1,530	14
Williams Companies, Inc									
Kern River Transmission Co	92	78	17	1	17	-91	1,041	983	6
Northwest Pipeline Co	92	81	13	19	315	-94	1,461	758	93
Texas Gas Transmission Co[a]	61		--	8		--	1,318		--
Transcontinental Gas Pipeline Co[a]	190		--	17		--	4,815		--
Williams Gas Pipeline - Central	34	36	-6	26	14	84	834	790	6
Subtotal: Pipelines owned by parent corporations in both 1992 and 1997	**2,436**	**1,451**	**68**	**1,103**	**1,264**	**-13**	**48,252**	**26,146**	**85**
Subtotal: Pipelines acquired 1992-1997	**0**	**1,212**	**--**	**0**	**273**	**--**	**0**	**23,456**	**--**
Total	**2,436**	**2,663[d]**	**0**	**1,103**	**1,537[d]**	**-28**	**48,252**	**49,602[d]**	**-3**

[a] Pipeline was not a part of the parent corporation in 1992.
[b] Pipeline was sold or spun off after 1997 and is no longer a part of the parent corporation.
[c] Less than half of a million dollars.
[d] The data show that the majority of the growth in natural gas pipeline's operating income, capital expenditures, and assets were due almost entirely to acquisitions and mergers by parent corporations between 1992 and 1997. In particular, assets including acquisitions and mergers declined 3 percent compared to an 85-percent increase when these same transactions were excluded.

Notes: Table is not inclusive of all U.S. interstate pipelines operating in 1992 and 1997. N/A denotes not applicable. -- denotes not meaningful.

Sources: Federal Energy Regulatory Commission, FERC Forms 2 & 2A, "Annual Report of Major/Minor Natural Gas Companies" (1992 and 1997).

been proposed to be built between 2000 and 2003 in the Northeastern region of the United States,[7] it is impossible to predict how many of the currently proposed plants will actually be built. The changing nature of power generation economics under restructuring, and changes in the economy itself over this period, will certainly bring about some revisions to current plans.

Long-Range Outlook

Projections of natural gas demand growth in the first two decades of the 21st century (between 2001 and 2020) suggest that gas consumption could reach between 30 and 35 Tcf by the end of the period.[8] To meet this potential level of demand, it is estimated that an investment of between $40 and $80 billion in new pipeline and/or expansion of current transmission infrastructure would need to occur.[9] Indeed, the Energy Information Administration (EIA) estimates that natural gas pipeline investments in the United States could exceed a combined total of $8 billion during 1999 and 2000 (Figure SF1). The largest growth in capacity is expected to occur primarily due to the increased use of natural gas in the generation of electrical power. In addition, the growth in industrial demand is expected to be a secondary contributor to the growth in capacity.[10]

Corporate Changes in the Natural Gas Transmission Sector

Mergers and Acquisitions

The corporate makeup of the natural gas pipeline industry, subsequent to Order 636, has changed. A number of pipeline companies were involved in acquisitions or mergers as major natural gas industry players developed new marketing strategies and/or corporately aligned themselves to better respond to the possible outcomes of Order 636 restructuring. In several cases, for example, El Paso Energy Corporation and The Williams Companies, one of the apparent primary aims of the merger was to extend the natural gas business unit nationwide.[11] In others, for example, PG&E Corporation, the apparent aim was to set up an integrated energy business (Figure SF2) which would extend the marketing of energy as a commodity, regardless of fuel type or method of production. [12]

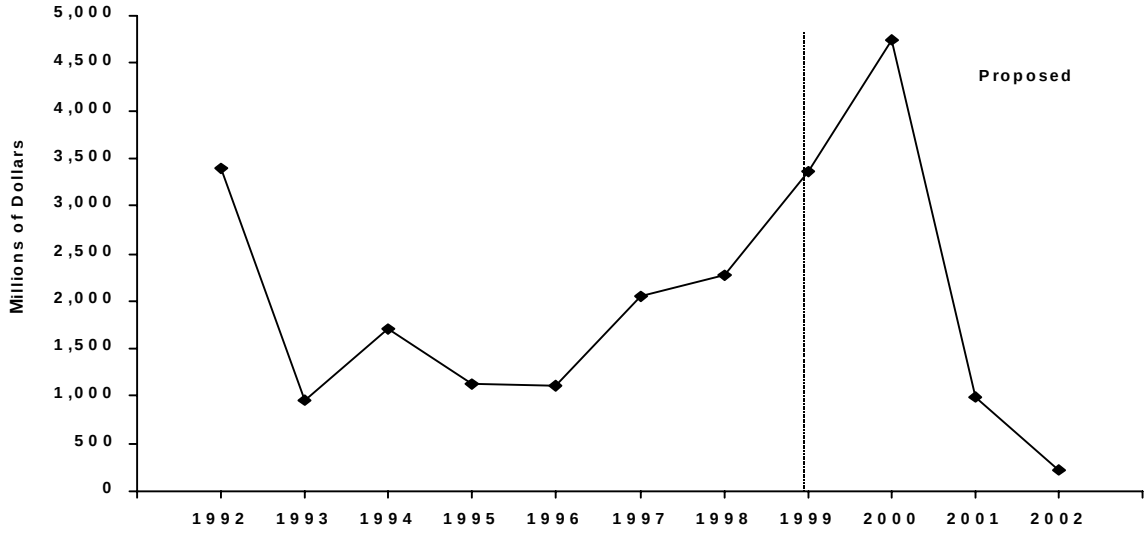
Most of the growth in the natural gas pipelines operations of the 14 parent corporations included in this review was accomplished through mergers and acquisitions. The total natural gas transmission assets owned by the 14 parent corporations increased by 85 percent between 1992 and 1997 (Table SF2). Nearly 90 percent of this growth is attributable to the acquisition of natural gas pipeline assets not owned by the parent corporations in 1992, the last year before full implementation of Order 636. Three parent corporations were primarily responsible for most of these acquisitions: Duke Energy, El Paso Energy, and The Williams Companies.

Acquisition of additional interstate pipeline operations allowed these parent corporations in particular (who controlled one or more pipelines already) to expand into new service territories or to strategically complement other parts of the corporate enterprise. For example, El Paso Energy Corporation's acquisition of Tenneco Energy Corporation in December 1996 brought three more interstate pipelines (Tennessee Gas Pipeline, Midwestern Gas Transmission and East Tennessee Gas Company) under its umbrella. This action extended its traditional service territory, located in the southwestern and western United States, to include the midwestern and eastern part of the United States. Transportation access to these markets also provided El Paso Energy's gas marketing subsidiary a vehicle to complement their national natural gas trading business and their delivery of natural gas to customers in these regions.

Likewise, The Williams Companies' purchase of Transco Energy Company (Transcontinental Gas Pipeline Company and Texas Gas Transmission Company) in May 1995 also expanded its transportation services to the midwestern and eastern parts of the United States. This merger also made The Williams Companies the largest transporter of natural gas in the nation. Duke Energy's acquisition of Pan-Energy Inc. in June of 1997 also brought with it a nationwide interstate system. In November 1998, however, Duke announced it was selling two of the former Pan-Energy interstate pipelines, Panhandle Eastern and Trunkline, to CMS Energy Corporation. Nevertheless, even with that sale, Duke Energy will still retain access to interstate natural gas transportation within its primary service territory, the east coast and the southeast region.

PG&E Corporation, which owns Pacific Gas and Electric Company, one of the largest distributors of electricity and natural gas in the United States, and a major pipeline serving California, extended its reach by acquiring Valero Energy's natural gas transmission assets in August 1997, along with several natural gas market centers located in west Texas. This action was undertaken to complement the growing presence of PG&E in the electric power generation sector in the

Figure SF1. National Levels of Interstate Natural Gas Pipeline Construction Expenditures, 1992-2002



Note: Estimated expenditures for several pipeline projects that extend between the U.S. and Canada only reflect that portion of project cost that is expected to be spent within the United States.

Source: **Estimated Capacity Additions 1999-2000:** Energy Information Administration, EIAGIS-NG Geographic Information System, Natural Gas Pipeline **Construction Database: Construction Expenditures:** Federal Energy Regulatory Commission, FERC Forms 2 & 2A, Annual Report of Major/Minor Natural Gas Companies, 1992-1997 and filings under CFR 157:20(c)(4); Energy Information Administration, EIAGIS-Ng Geographic Information System, Natural Gas Pipeline Construction Database.

Southwest, particularly in the development of gas-fired generating capacity. Pacific Gas Transmission Company, a wholly owned subsidiary of PG&E (renamed PG&E Transmission - Northwest effective January 1, 1998) links the PG&E California market to gas supplies located in Canada.

Energy Marketing

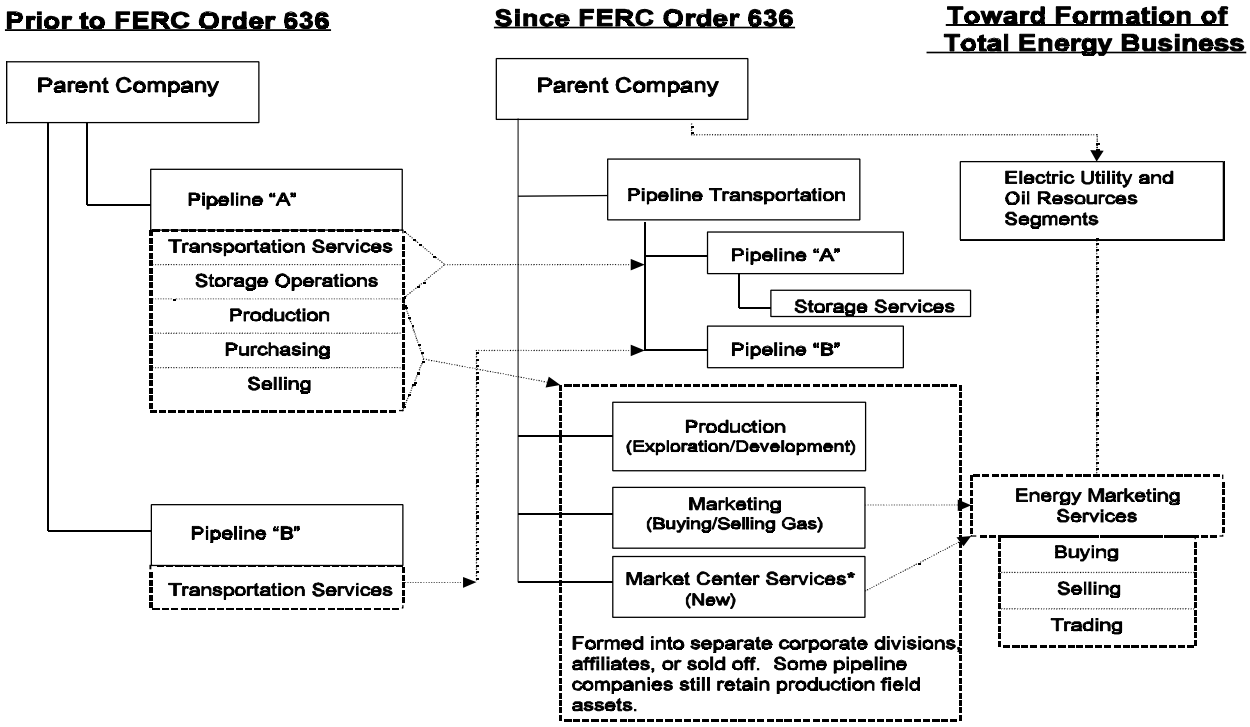
As the interstate natural gas pipeline companies went from being sellers of gas to primarily transporters of the commodity during the latter 1980's and early 1990's,[13] they had to reorganize their business operations. In many instances, parent corporations set up affiliated marketing subsidiaries (which were usually the pipeline's prior marketing unit) to manage the buying and selling of natural gas for customers who previously purchased gas directly from the pipeline (Figure SF2).

Today, these marketers have become major operations in their own right, many doing business well beyond the service territories of their pipeline affiliates. Enron Capital and Marketing Inc. (affiliated pipelines - Northern Natural Gas Company, Transwestern Pipeline Company, and Mid-Louisiana Gas Company), for instance, has become the largest natural gas marketer in North America, transacting more than $11 billion in business in 1997, and accounting for about 58 percent of Enron Corporation's total operating revenues. Similarly, Duke Energy Company (Texas Eastern Gas Transmission Corporation, Algonquin Gas Transmission Company) and El Paso Marketing Company (El Paso Energy Company, Tennessee Gas Pipeline Company, Midwestern Gas Transmission) today rank 5th and 16th, respectively, among *Natural Gas Intelligence's* list of major U.S. energy marketers.[14]

Parent Corporation Profiles

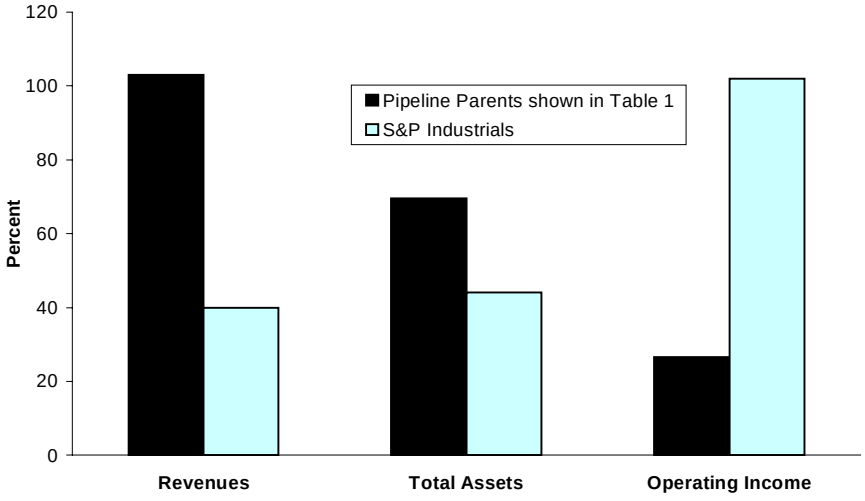
In contrast to the decline of interstate pipeline companies' revenue shown at the bottom of Table SF1 (the total including acquisitions and mergers), both the revenue and total assets (pipeline assets and other assets) of the 14 parent corporations owning these pipelines have been growing more rapidly in general since 1992 (parent corporations listed in bold on Table SF1). Further, these parent corporations' revenue and total assets have outpaced other large U.S. industrial companies' revenue and total assets from 1992 to 1997. Revenue growth for the 14 parent corporations was 104 percent (Figure SF3) compared to 40 percent for the

Figure SF2. Corporate Restructuring in the Natural Gas Interstate Pipeline Industry



Note: Some market center services may remain under the jurisdiction of the Federal Energy Regulatory Commission (FERC).
Source: Energy Information Administration, Office of Oil and Gas.

Figure SF3. Growth Rates (from 1992 to 1997) for Pipeline Parent Corporations and the S&P Industrials



Source: Compustat PC Plus, a service of Standard & Poor's.

Table SF3. Parent Corporation Main Lines of Business

Parent Corporation	Primary SIC Code	Natural Gas and Related Natural Gas Operations					Electric & Related Electric Service Operations			
		Natural Gas			Other		Electric Services		Other Energy	
		Transmission & Storage[a]	Oil & Gas Production	Gathering & Processing	LDCs	Energy Marketing & Services	Generation, Transmission & Distribution	Energy Marketing & Services	Cogen-eration	Independent Power Plants
Coastal Corp.	4922	X	X	X		X			X	
Columbia Energy Group	4923	X	X	X	X	X		X	X	
Consolidated Natural Gas Co.	4923	X	X		X	X		X		
Duke Energy Corp.	4911	X		X		X	X	X		X
El Paso Energy Corp.	4922	X				X		X		
Enron Corp.	5172	X	X			X	X	X		
KN Energy Inc.	4923	X		X	X	X		X		
MDU Resources Group Inc.	4931	X	X	X	X		X			
Northern States Power	4931	X			X		X			
PG&E Corp.	4931	X		X	X	X	X	X		X
Questar Corp.	4923	X	X	X	X	X		X		
Reliant Energy Inc.	4911	X		X	X	X	X	X		X
Sonat Inc.	4922	X	X			X		X		
Williams Companies Inc.	4922	X	X	X		X		X		
Total		**14**	**8**	**9**	**8**	**12**	**6**	**11**	**2**	**3**

[a]The parent companies in this category have separate operations in transmission and in storage.

Notes: The following SIC Codes denote primary business operations: SIC Code 4911, electric services; SIC Code 4922, natural gas transmission; SIC Code 4923, natural gas transmission and distribution; SIC Code 4931, electric and other services combined; and SIC Code 5172, wholesale-petroleum and petroleum products (no bulk stations). Four companies have natural gas liquid plants: Coastal, KN Energy, PG&E, and Williams Company. Other lines of operations include chemical operations, coal operations, construction, downstream petroleum, and real estate.

Source: Lines of Business were compiled from companies' individual *Securities and Exchange Commission Form 10-K, 1997.*

S&P Industrials.[15] Total asset growth for these parent corporations was 76 percent compared to 44 percent for the S&P Industrials. However, rapid corporate growth may have come at the expense of profits, as operating income for the parent corporations grew at 20 percent versus 102 percent for the S&P Industrials (Figure SF3). In 1997, eleven of the parents were listed on the Fortune 500, based on annual revenue.[16] There were three parent corporations discussed in this review that were ranked in the top 100. Enron ranked 57th, followed by Duke Energy at 81st and PG&E at 85th (Table SF1).

Lines of Business

Operations of the parent corporations range from vertically integrated natural gas operations to electric services (Table SF3). Following natural gas transmission and storage operations, energy marketing and services was the most frequently occurring line of business activity for the parent corporations. Other lines of business that the parent corporations have are (listed in terms of frequency): natural gas gathering and processing, oil and gas production, natural gas distribution, and integrated electric services (operations in generation, transmission, distribution). Five of the fourteen corporations have electricity supply and distribution as their primary industry.

Each of the parent corporations owns both interstate natural gas transmission and storage operations. The pipelines owned by the parent corporations are significant contributors to the natural gas pipeline industry. According to data reported to FERC, the revenue generated by these pipelines accounted for more than 88 percent of the total revenue generated by the interstate natural gas pipeline industry. In addition, their deliveries accounted for 86 percent of the total gas delivered in the United States in 1997.

Energy marketing and services is the second most frequent line of business engaged in by the 14 parent corporations. Twelve of these corporations have energy marketing and services operations. Of these twelve parent corporations, four engage in integrated electric

services (operations in generation, transmission, and distribution).

Why are these parent corporations involved in integrated electric services? Through electricity restructuring and natural gas deregulation, energy marketing and services have become more dominant as consumers now have greater flexibility to choose their provider of energy services. Corporations have begun to sell both electricity and natural gas interchangeably to attract new customers, or to retain previous customers. Consequently, these parent corporations (with both energy marketing and services and integrated electric services) have strategically acquired assets to increase their competitiveness through lowered operating costs, diversified operations, increased marketing areas, and larger customer bases. This trend, the combination of natural gas assets and electric services and marketing, can be expected to progress as corporations realize potential synergies and complementaries gained from marketing both sources of energy.[17]

A number of recent mergers combined downstream natural gas operations with integrated electricity operations. In 1997, Enron purchased Portland General Corporation, a wholly owned subsidiary of Portland General Electric, resulting in Enron becoming the largest wholesaler of gas and electricity in North America. As a result of this transaction, Enron also became the largest investor-owned electric utility company in 1997 based on revenue, primarily due to its wholesale energy marketing activities. Duke Energy acquired PanEnergy, and then sold a 40-percent interest in its marketing division to Mobil, a major producer of natural gas. Houston Energy merged with Noram Energy in 1997 and renamed the company Reliant in 1998. Pacific Gas and Electric acquired Valero Energy's natural gas transmission assets.[18] A recent merger proposal between Dominion Resources and Consolidated Natural Gas in 1999[19] indicates a continued movement toward this trend. Other corporations, such as Sonat,[20] have created marketing divisions to take advantage of the opportunities in wholesale power marketing.

This recent trend has resulted in more parent corporations shifting from traditional vertically integrated operationsCoperations from natural gas production through local distributionCto electricity-related operations. Although eight parent corporations report oil and gas production, only two of these corporations that have operations in electric services (MDU Resources and Enron) also have natural gas production operations (Table SF3). Recently, Enron announced its intention to sell its oil and gas exploration assets, but later ended negotiations citing the company will continue to explore opportunities to maximize the value of this investment.[21]

The pattern of recent large divestitures of interstate natural gas pipeline assets reinforces the view that the focus of synergies and complementaries has tended to shift away from vertically integrated wellhead-to-city-gate corporate structures. Burlington Resources, a major U.S. oil and gas producer, spun off their interstate natural gas operations in the form of El Paso Energy in 1992. Occidental Petroleum, a major international oil and gas producer with sizable chemical operations, sold their MidCon subsidiary and associated natural gas transmission assets in 1998.[22] Tenneco, a former major integrated petroleum company, sold their natural gas transmission assets to El Paso Energy in 1996.

In 1997, eight of the fourteen parent corporations owned local distribution companies (LDCs). Of these eight, four had interstate natural gas transmission operations as their primary industry while the remaining four corporations had electric services and other related services as their primary industry (Table SF3). Prior to Order 636, five of the corporations owned local natural gas sales and distribution services. LDCs are generally not core assets but rather a line of business that corporations acquire in conjunction with natural gas pipeline assets through acquisitions/mergers. However, it appears that parent corporations that have LDC systems and/or engage in retail natural gas marketing services retain this line of business primarily because it is expected to complement future or expanded marketing of overall energy services such as electricity.

Investment Targets

Total capital expenditures by the 14 parent corporations varied based on lines of business (Table SF4). However, capital expenditures for the line of business containing natural gas transmission represented the largest share of their total investment outlays in 1997, at 23 percent.[23] Expenditures in both oil and gas production and electric services were almost equal percentages of

Table SF4. Parent Company Financial Position in Lines of Business

Company / Line of Business	Percent of Total Revenue	Percent of Total Operating Income	Percent of Total	Percent of Total Assets
Coastal Corporation				
Natural Gas Transmission[a]	21	61	23	47
Refining & Marketing	70	11	17	34
Oil & Gas - Production	6	23	58	14
Other	3	5	2	5
Columbia Energy Group				
Natural Gas Transmission	10	51	42	41
Natural Gas Distribution	45	43	28	41
Energy Marketing/Services	44	-1	3	9
Other	1	7	27	9
Consolidated Natural Gas				
Natural Gas Transmission	6	32	8	22
Natural Gas Distribution	35	47	25	43
Oil & Gas - Production	6	25	49	20
Energy Marketing/Services	51	-3	2	11
Other	2	-1	16	4
Duke Energy Corporation				
Electric Service	27	60	37	54
Natural Gas Transmission	9	31	12	21
Energy Marketing/Services	45	2	1	8
Other	19	7	50	17
El Paso Energy Corp/DE				
Natural Gas Transmission	23	107	67	74
Energy Marketing/Services	76	7	24	18
Other	1	-14	9	8
Enron Corp				
Natural Gas Transmission	7	--	24	33
Oil & Gas - Production	4	--	44	11
Energy Marketing/Services	86	--	24	49
Other	3	--	8	7
KN Energy Inc				
Natural Gas Transmission	1	25	41	23
Gathering Processing & Marketing Services	87	52	51	54
Retail Natural Gas Services	12	23	8	23
Other	0	0	0	0
MDU Resources Group Inc				
Natural Gas Transmission	33	35	20	33
Electric	27	30	17	30
Oil & Gas - Production	11	22	27	15
Construction Materials & Mining	29	13	36	22
Northern States Power/MN				
Natural Gas	19	10	19	12
Electric Operations	81	90	81	88
Other	0	0	0	0
PG&E Corp				
Natural Gas Transmission	12	18	18	18
Electric Operations	50	86	64	62
Other	38	-4	18	20
Questar Corp				
Natural Gas Transmission	4	30	15	21
Natural Gas Distribution	48	34	31	31
Market Resources	48	34	43	33
Other	0	2	11	15
Reliant Energy, Inc				
Natural Gas Transmission	2	3	3	10
Natural Gas Distribution	13	5	10	10
Electric Operations	61	93	41	33
Energy Marketing/Services	23	2	2	4
International Operations	1	2	40	3
Other	0	-5	4	40
Sonat Inc				
Natural Gas Transmission	8	60	21	
Oil & Gas Production	12	35	77	44
Energy Marketing/Services	79	4	2	17
Other	1	1	0	1
Williams Cos Inc				
Natural Gas Transmission	37	66	36	56
Oil and Gas Production	0	3	5	2
Field Services	15	18	14	15
Petroleum Services	11	10	4	7
Energy Marketing Services	4	8	3	5
Other	33	-5	38	15
Percentage of Total Capital Expenditures				
Natural Gas Transmission			23	
Natural Gas Distribution			4	
Oil and Gas Production			20	
Electric Operations			21	
Energy Marketing/Services			11	
Other			21	

Source: Compustat PC Plus, a service of Standard & Poor's, Inc

overall capital expenditures, 20 percent and 21 percent, respectively, while expenditures in energy and marketing services accounted for 11 percent.

According to FERC regulations, interstate natural gas pipelines are allowed a rate of return on interstate transmission operations that permits them to minimize their risks in a regulated business environment (see the box entitled, "Regulating Pipeline Construction"). Based on the Energy Information Administration's forecasted demand growth for natural gas (reported in the *Annual Energy Outlook 1999*) new and/or expansions of the current pipeline infrastructure will be required. One question for the industry is to what extent will the regulated rate of return designated by FERC for the proposed pipelines be sufficiently lucrative for current owners to invest in new pipeline projects instead of other lines of business?

At least two conditions will make investment in rate-regulated natural gas pipelines attractive to a company. First, if the other lines of business in a corporation can generate complementaries, such as new marketing strategies designed to increase business volumes, or synergies, such as lower-cost provision of energy services when combined with midstream (the intermediate stages between natural gas wellhead production to the consumer burner tip) natural gas operations, then a corporation's effective rate of return on natural gas transmission assets will exceed the regulated rate of return on natural gas transmission assets. In fact, it appears that the recent pattern of mergers, acquisitions, and divestitures involving interstate natural gas transmission facilities were premised on achieving synergies in the combination of midstream natural gas operations with electricity operations.

Second, if the rate of return to natural gas pipeline assets, though regulated, is generally higher than the rate of return to investment in a company's other lines of business, then natural gas pipeline investment will be relatively attractive. As Figure SF4 shows, 12 of the 14 parent corporations reviewed in this report have a higher return on investment (ROI) for pipeline investments when compared to the composite ROI for all other lines of business, at least for 1997. (Due to data availability, the return on investment for natural gas transmission shown in Figures SF4 and SF5 is for the

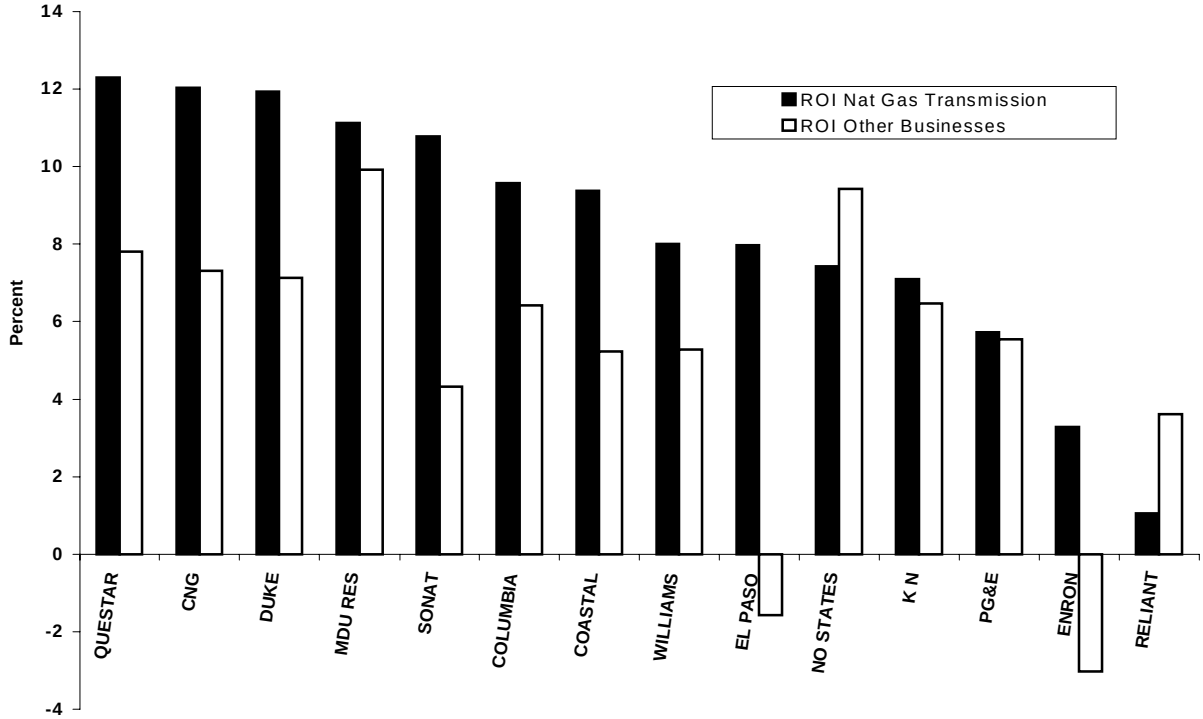
Regulating Pipeline Construction

In most cases, interstate natural gas pipeline companies are required under Section 7c of the Natural Gas Act of 1938 to obtain a certificate of public convenience and necessity before constructing pipeline facilities. Besides review of operational aspects of the system, other legislation requires extensive review of the financial and environmental aspects of the projects. These requirements have resulted in a sometimes lengthy and complex process.

Once a project is approved and constructed under a Section 7c certificate, the costs of the facilities are eligible for inclusion in the pipeline company rate base (when the company files its next general rate case) and the risks associated with recovery of those costs are minimized. Other options are also available to pipeline companies for capacity expansion, depending on the size of the project and the amount of risk the company is willing to assume. These options include:

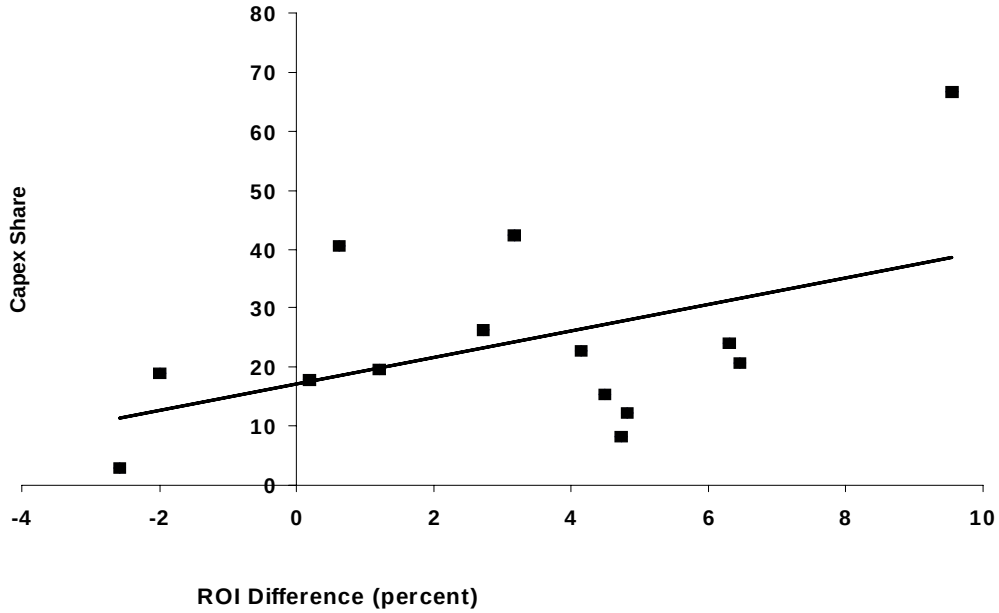
- **Blanket Certificate.** Blanket certification can be used for relatively small projects. A blanket certificate approves a series of similar actions in one authorization. For instance, construction of small additions to a natural gas pipeline may be authorized by a blanket certificate, provided the total cost does not exceed some threshold level and other eligibility criteria are met.
- **Optional Certificate** (formerly known as Optional Expedited Certificate). In 1985, under Order 436, FERC introduced optional certificates whereby construction could be approved without assessment of its financial soundness. In return, the pipeline company would agree to bear the majority of the risk of the project.
- **NGPA Section 311.** Section 311 of the Natural Gas Policy Act (NGPA) of 1978 allows an interstate pipeline company to sell or transport gas "on behalf of" any intrastate pipeline or local distribution company. FERC has exempted the construction of facilities used solely for Section 311 transportation from certificate requirements.

Figure SF4. Return on Investment for Natural Gas Transmission Segment and All Other Businesses for Pipeline Parent Corporations, 1997



Notes: NO STATES means Northern States Power Company; Return on investment = operating income/total assets.
Source: Compustat PC Plus, a service of Standard and Poor's, Inc.

Figure SF5. Pipeline Capital Expenditure Share vs. Pipeline ROI Minus Other ROI, 1997



Notes: Capex share means capital expenditure share. ROI means return on investment. ROI = Operating income/total assets. Data represent values for the parent corporation's pipeline capital expenditures and their pipeline return on investment minus return on investment for other lines of business.

Source: Compustat PC Plus, a service of Standard and Poor's, Inc.

line of business segment that includes natural gas transmission. Return on investment is measured by segmental operating income divided by segmental total assets rather than stockholder's equity.) Northern States Power and Reliant, the two corporations that have a higher composite ROI for all other lines of business when compared to the ROI for pipeline investments, each has at least 90 percent of its earnings from electric operations. The average return on investment for natural gas pipelines was 7.6 percent compared to 4.2 percent for all other lines of business, about 81 percent higher.

Will parent corporations earmark more capital expenditures to pipeline operations if the return on these assets is higher? Figure SF5 shows a positive correlation between capital expenditures for the natural gas transmission segment as a percent of total company capital expenditures and the difference between the natural gas pipeline ROI and the ROI for all other lines of business.[24] That is, parent corporations for whom pipeline investments have yielded higher returns than their other businesses will tend to allocate relatively more capital expenditures to natural gas transmission operations.

Financial Performance

Past financial performance of a corporation is often used to analyze its future performance and its ability to attract investors. Various stakeholders such as stockholders and creditors have different concerns with regard to the company's financial performance. For example, stockholders are concerned with the effectiveness of management, and long-term profitability and dividends, whereas creditors are concerned with the company's ability to repay debt.

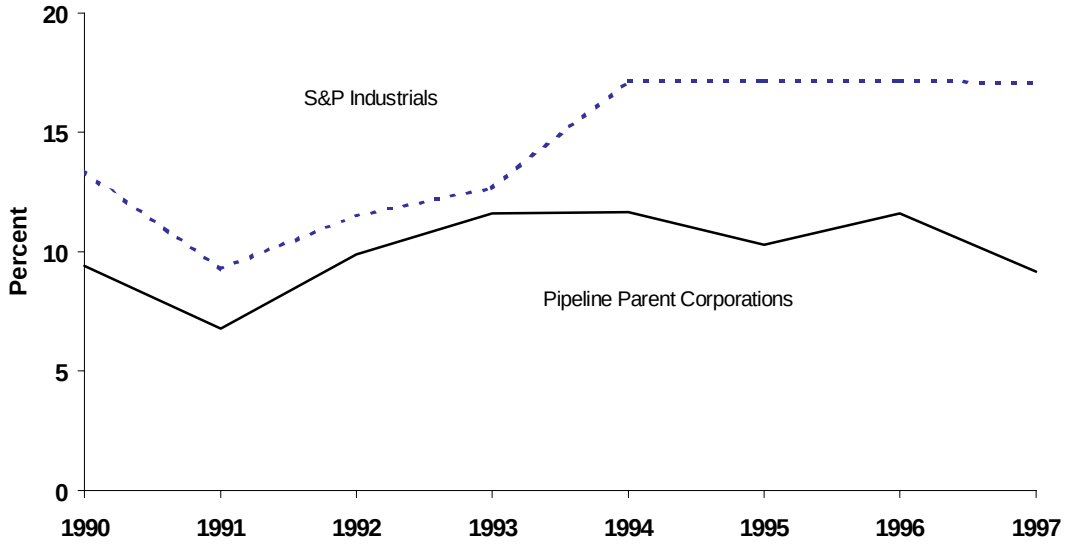
The profitability of a corporation, as measured by the return on equity (net income as a percent of stockholders' equity) is often used as an indicator of management's performance. Although the period between 1992 and 1997 has been analyzed in this report thus far, to look at the past profitability of the 14 parent corporations before and after Order 636, the years 1990 to 1997 will be examined. During the 1990 to 1997 period, the return on equity (ROE) for the parent corporations of interstate pipeline companies was less favorable when compared to the S&P Industrials (Figure SF6). The parent corporations' ROE averaged 6 percentage points less than the ROE of the S&P Industrials over the period. However, the parent corporations' ROEs are lower in part because pipeline rates of return are regulated by FERC. Conversely, competitive forces drive the returns for the S&P Industrial's, yielding higher risks and higher returns. Nonetheless, the parent corporations' odds of attracting potential investors over the S&P industrial's group are less favorable based on their ROE. To overcome this obstacle and attract investors, they are much more generous in their dividend payouts to shareholders. In 1997, the dividend yield (i.e., dividends per dollar of share price) to investors was 3.4 percent for the parent corporations, which was more than double the 1.5-percent yield for the S&P Industrials. In 1996, the dividend yield was 4.2 percent compared to a 1.8-percent dividend yield for the S&P Industrials.

The perception of management's ability to operate the firm and to create wealth for its stockholders can affect the company's ability to attract potential investors. The price-earnings ratio, which is an indication of investor expectations of earnings growth, for the parent corporations over the last 7 years was relatively low compared to the S&P Industrials (Figure SF7). The annual growth in the parents' price-earnings ratio was 5.1 percent compared to 8.7 percent for the S&P Industrials over the 1990 to 1997 period.

In 1990 and 1991, the price-earnings ratios for the two groups were nearly equal. However, in the following year, the price-earnings ratio for the parent corporations dropped 7 percentage points relative to the S&P Industrials, reflecting a decline in the market's perception of the corporations' earnings potential. This decline in 1992 coincided with FERC's announcement of Order 636. Because Order 636 would dramatically change the operational and financial structure of the industry, market concerns were heightening. Market speculations of whether the industry would rebound from major adjustments brought about by Order 636 were prevalent.

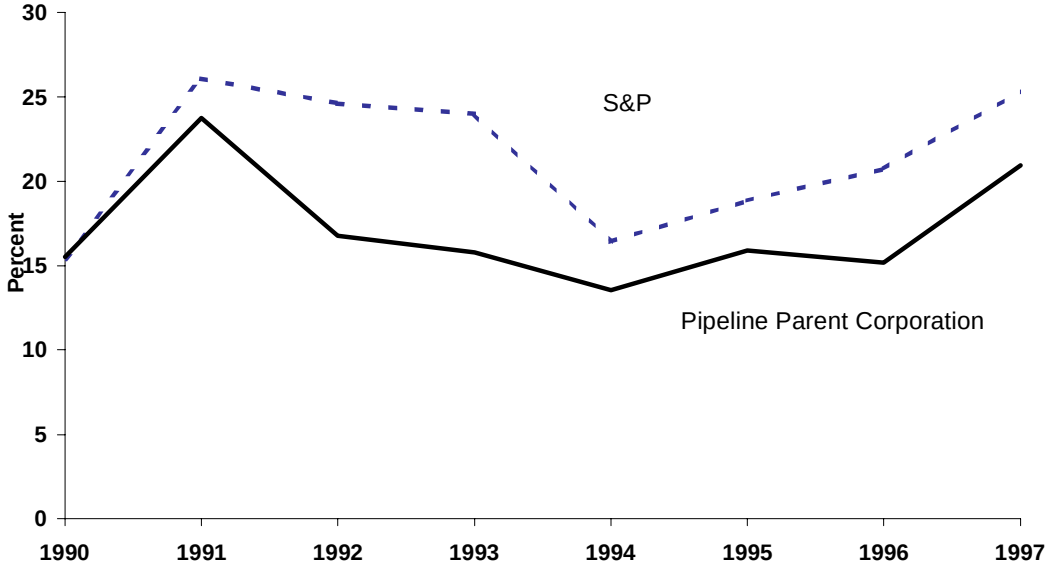
Between 1992 and 1994, the period marking the announcement of the Order and the first year of full compliance, the price-earnings ratio declined sharply, perhaps indicating the market's perception of uncertainty and caution with regard to the impact of Order 636 on the natural gas industry. Although other economic considerations could have affected the

Figure SF6. Weighted Average Return on Equity for Pipeline Parent Corporations and the S&P Industrials, 1990-1997



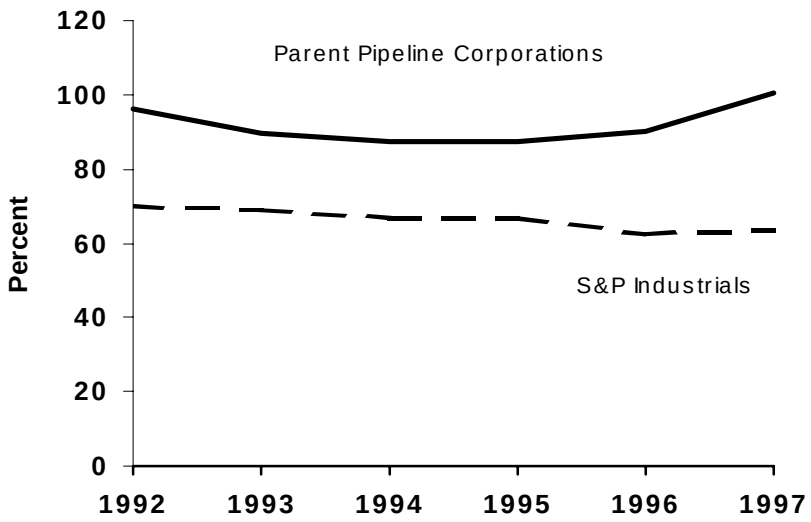
Note: Return on equity = net income/stockholder's equity.
Source: Compustat PC Plus, a service of Standard and Poor's, Inc.

Figure SF7. Weighted Average Price-Earnings Ratio for Pipeline Parent Corporations and the S&P Industrials, 1990-1997



Note: Price earnings = market price per share of common stock/annual earnings per share.
Source: Compustat PC Plus, a service of Standard and Poor's, Inc.

Figure SF8. Long-Term Debt/Equity Ratio for Pipeline Parent Corporations and the S&P Industrials,1992-1997



Source: Compustat PC Plus, a service of Standard & Poor's.

difference in the price-earnings ratios of parent corporations and the S&P Industrials over this period, the onset of Order 636 clearly appears to be an important contributing factor.

Corporations generally utilize internal cash flow from operations, issue stock, and issue debt to raise capital for their business operations. However, parent corporations of interstate natural gas pipelines strongly favor debt over equity financing compared to U.S. industry generally (Figure SF8). During the 1990's, the ratio of long-term debt to shareholders' equity for parent corporations ranged from 90 percent to 100 percent. When compared to the long-term debt / equity ratio for the S&P Industrials, their leverage ratio was over 60 percent higher in 1997. In theory, a higher debt / equity ratio may hamper the ability of the firm to borrow funds. However, since the rates of return for pipelines are regulated by FERC, creditors are reasonably certain that their ability to repay the debt will not be hindered by their high debt.

To date, the 14 parent corporations with interstate natural gas transmission operations have had no major difficulties in raising the necessary capital to build and expand existing pipelines to meet the recent increases in natural gas demand. The parents finance their lines of business through internal cash flow, stocks, and debt, although they utilize debt financing over equity financing. Parent corporations' return on equity is less attractive compared to the S&P Industrials; however, they have been able to attract investors through the payment of higher dividend yield. The dividend yield to the parent corporation's stockholders was more than double that of the S&P Industrials in 1997.

These parent corporations will continue to allocate capital expenditures toward natural gas transmission operations as long as the return on investment remains favorable compared to the return on investment for their other lines of business.

Endnotes

1. For a more detailed explanation and review of Order 636, see Chapter 2 of Energy Information Administration, *Natural Gas 1994: Issues and Trends*, DOE/EIA-0560(94)(Washington, DC, July 1994). (pdf format)

2. For more information on interstate pipeline expansion during the early 1990's, see Energy Information Administration, *Deliverability on the Interstate Natural Gas Pipeline System*, DOE/EIA-068(98) (Washington, DC, May 1998). (pdf format)

3. The total volume of natural gas delivered by the individual pipeline companies included in this review, 40.7 trillion cubic feet in 1997, includes volumes that may be transshipped via several other interstate pipeline companies prior to reaching their final destination. In addition, total deliveries also include volumes delivered to and from storage sites, gas exchange, and gas delivered for operational use. As a result, there is double and sometimes triple counting of throughput volumes. This accounts for the large difference between the 1997 national natural gas consumption level of 22 trillion cubic feet of gas (Tcf) and the 38 Tcf of deliveries reported by the 37 pipeline companies under review.

4. The interstate natural gas pipelines included in this portion of the analysis (see Table SF1) accounted for nearly 88 percent of the revenues reported by the 100 interstate pipelines that reported to the FERC in 1997 and nearly 86 percent of the total gas deliveries by those reporting.

5. As used in this report, the Northeastern region includes Census Region 1, the New England States (NH, VT, ME, MA, CT, and RI), and Census Region 2, the Middle Atlantic States (NY, NJ, and PA). The Midwestern region consists of Census Region 3, the East North Central States (IN, IL, MI, OH, and WI).

6. A 125-percent increase in natural gas use for electric power generation in the Northeast region is projected between 1998 and 2003 (from 0.401 quadrillion Btu per year in 1998 to 0.901 quadrillion Btu in 2003). Source: The Energy Information Administration, *National Energy Modeling System, AEO99b.d100198a (run October 14, 1998)*, Table 2.

7. Energy Information Administration, *Inventory of Power Plants in the United States as of January 1998* (Washington, D.C., December 1998) for proposed electric utility power plant additions and Form EIA-867, *Annual Nonutility Power Producer Report* for proposed independent power producer plant additions. Online, http://www.eia.doe.gov/cneaf/electricity/ipp/ipp_sum.html

8. Energy Information Administration, *Annual Energy Outlook 1999* (Washington, D.C., December 1998). Online, http://www.eia.doe.gov/oiaf/aeo99/overview.html

9. Energy Information Administration, *Natural Gas 1998: Issues and Trends* (Washington, D.C., May 1999), Chapter 5. (pdf format)

10. Energy Information Administration, *Annual Energy Outlook, 1999* (Washington, D.C., December 1998). Online, http://www.eia.doe.gov/oiaf/aeo99/overview.html

11. El Paso Energy Corporation, "Company Profile," Online, http://www.epenergy.com/about/profile.htm and The Williams Companies, "Natural Gas Services," Online, http://www.williamsenergy.com/Energy/ngs/frameset/naturalgas.htm

12. PG&E Corporation, "About PG&E Energy Trading." Online, http://www.pge-energy.com/about/default.htm

13. FERC Order 436, issued in 1987, was the first attempt by FERC to address the growing use of transportation-only gas transactions that developed as the pipeline companies tried to relieve their gas contract take-or-pay problem. One way they were doing this was by arranging direct deals between producers and end users for the gas that they were unable to buy for resale. Order 636, issued in 1992, formerly addressed the contract and operational problems that developed under Order 436, and made all interstate pipelines transporters and opened underground storage capacity to third-parties.

14. *NGI's Daily Gas Price Index*, Natural Gas Intelligence Press (Arlington, VA, February 8, 1999).

15. The Standard and Poor's (S&P) Industrials is a well-recognized database that includes nearly 400 of the largest U.S. industrial companies. Financial statistics for the pipeline parents and the S&P Industrials were obtained by accessing Compustat PC Plus, a service of Standard & Poor's, Inc.

16. The Fortune 500 is a list that combines industrial and service companies ranked in size based on revenue. Source: Standard and Poor's Industrials.

17. For a more in-depth discussion on synergies and complementaries gained through the combination of natural gas assets and electric services see "Special Topic: Electricity Restructuring Attracts the U.S. Majors," in Energy Information Administration, *Performance Profiles of Major Energy Producers 1997*, DOE/EIA-0206(97) (Washington, DC, January 1999), pp. 56-58. Online, http://www.eia.doe.gov/emeu/perfpro/ chapter4.html#elec_restr

18. "Consolidated Natural Gas Announces Amended Merger Agreement with Dominion Resources" (May 11, 1999).

19. Sonat Corporation, *1997 Securities and Exchange Commission Form 10-K*, p. I-21. Online, http://www.sec.gov/Archives/edgar/data/92236/0000950144-97-002708.txt

20. Sonat Corporation, *1997 Securities and Exchange Commission Form 10-K*, p. I-21. Online, http://www.sec.gov/Archives/edgar/data/92236/0000950144-97-002708.txt

21. "Enron Withdraws Proposal to Sell Interest in Enron Oil & Gas Company." Online, http://www.enron.com/pressrel/1999/ene/13DEOG.html (May 7, 1999).

22. "KN Energy Completes MidCon Corp. Acquisition." Online, http://www.knenergy.com/pages/news/complete.html (January 30, 1998).

23. The data in Table SF4, Figure SF3, and Figure SF4 are based on business segment financial data reported by the companies in their 1997 filings of Securities and Exchange Commission *Form 10-K*, as compiled by Compustat PC Plus, a service of Standard & Poor's, Inc. Data labeled as natural gas transmission in Table SF4 and Figures SF3 and SF4 are for the business segment that contains interstate natural gas transmission operations.

24. The t-statistic of the coefficient of the difference in ROI is 1.84.

Natural Gas Winter Outlook 1999-2000

By James M. Todaro

This article is based on the Winter Fuels Outlook published in the 4th Quarter ***Short-Term Energy Outlook*** and discusses the supply and demand outlook from October 1999 through March 2000. For a more complete picture of the situation facing other heating fuels (heating oil and propane), see ***Short-Term Energy Outlook*** (October 1999, pages 1-16).

This winter is expected to have both higher space-heating demand and natural gas prices than those seen during the previous winter season. Prices at the wellhead and on the spot market in October are estimated to be 35 to 60 percent higher than last year, respectively. In addition, compared to last year the NYMEX futures contract for November delivery was trading at prices that were over 40 percent higher this October. Coupled with the prospect of a more normal[1] winter season bringing colder temperatures than last winter, consumers are likely to incur higher natural gas heating bills this winter compared to their bills in the previous heating season. Nonetheless, supplies of natural gas are expected to be more than adequate to meet winter demand. The incremental requirements of a severe winter should be met without serious difficulty as well, but, in that event, consumer prices could be much higher than those of a normal winter season.[2]

Mainly because of the likelihood of higher natural gas prices this winter, expenditures by residential consumers for heating (or other energy uses) this winter are likely to be relatively large, especially in comparison to costs seen in the past two winters (1997-1998 and 1998-1999). Table SR1 illustrates the impact of these higher natural gas costs and different weather conditions on winter heating bills for a typical household in the Midwest. It summarizes three scenarios: a base case assuming normal weather; a cold weather (10 percent colder-than-normal) scenario; and a warm weather (10

Table SR1. Illustrative Midwest Consumer Prices[2] and Expenditures per Household, for Natural Gas in Winter

				1999-2000 Projections		
	1996-1997 Actual	1997-1998 Actual	1998-1999 Actual	Base	Warm Weather	Cold Weather
Natural Gas (Midwest)						
Consumption (Mcf)	91.4	82.4	83.5	90.2	82.5	97.9
Expenditures ($)	606	546	524	625	568	687
Average Price ($/Mcf)	6.63	6.62	6.28	6.93	6.89	7.02

$/Mcf =Dollars per Thousand Cubic Feet

1 Normal degree-days, as defined for this analysis, are calculated by EIA on a month-to-month basis in such a way as to incorporate temperature trends identified through research done by the National Oceanographic and Atmospheric Administration. The methodology is discussed in an EIA analysis paper titled "The Impact of Temperature Trends on Short-Term Energy Demand," which may be accessed on the EIA web site at www.eia.doe.gov/emeu/steo/pub/special/weather/temptrnd.html. The new methodology for identifying expected degree-days, which replaced the practice of assuming standard 30-year degree-day normals based on 1961-1990 monthly population-weighted averages, has been used as the basis for EIA's *Short-Term Energy Outlook* forecasts since September 1999.

2 These calculations focus on the Midwest region of the country with respect to per-household consumption and projected weather factors (i.e., changes in heating degree-days) but utilize the national average consumer prices for natural gas presented in the 4TH Quarter *Short-Term Energy Outlook*. Thus, heating bill calculations are illustrative of the magnitude of the expected changes in natural gas heating bills but are not necessarily indicative of the absolute expenditure levels to be anticipated by individual consumers.

percent warmer-than-normal) scenario case. The higher and lower cases are not particularly likely (the probability of winter weather deviating from normal by at least 10 percent is estimated to be about 5 percent). However, these ranges for weather variation yield realistic upper and lower bounds for energy market behavior over the upcoming heating season.

For Midwest households that primarily use natural gas, heating fuel bills could be about 19 percent higher if the region experiences a more normal winter weather pattern than last year. (For residential consumers in the Midwest who heat with heating oil or propane, the ***Short-Term Energy Outlook*** (STEO) forecast calls for expenditure increases of 44 and 36 percent, respectively, during the 1999-2000 winter.) On the other hand, the base case for the upcoming winter would not be very different from the experience of the 1996-1997 winter, in terms of fuel demand levels and cost. During that period, winter temperatures were close to normal.

Demand

A return to normal weather will see demand increase

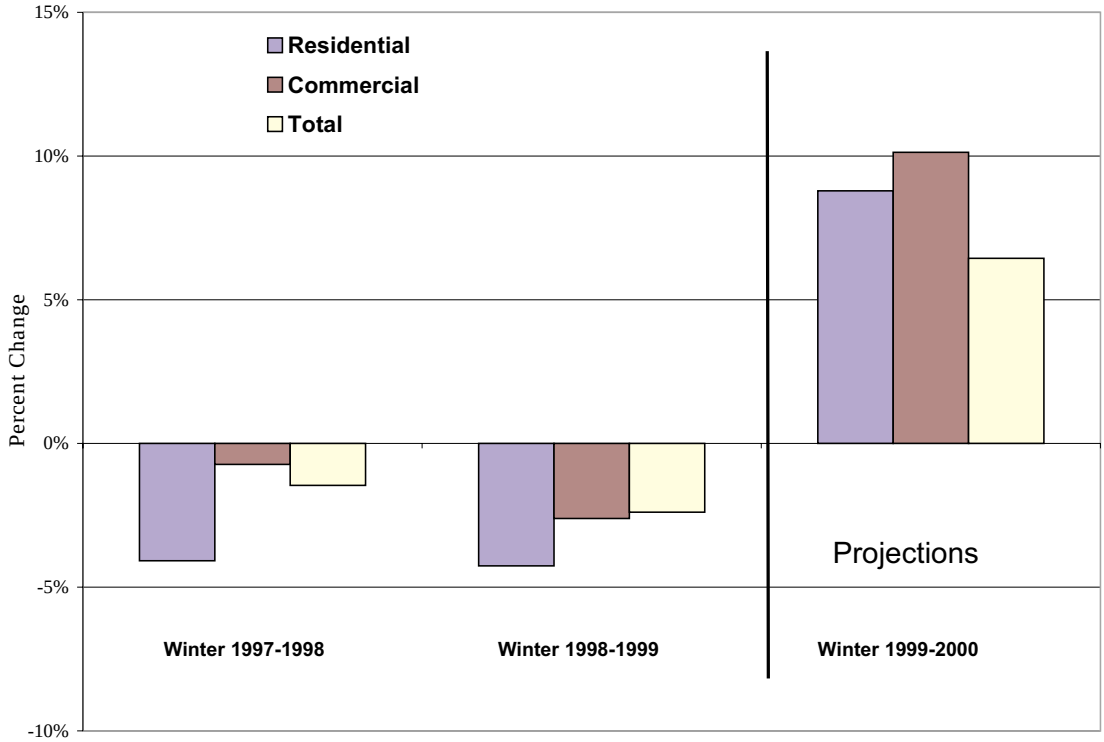
Total natural gas demand is expected to move higher this winter, averaging 70.4 billion cubic feet (Bcf) per day, an increase of 5.9 percent compared with last year's daily average of 66.5 Bcf per day. Contributing to the growth in winter demand is the increase in gas space-heating customers (about 1 percent). Most of the increase is related to assumptions of a return to more normal weather patterns. Milder weather last winter resulted in gas-weighted heating degree-days that were 3.5 percent below normal, although several Midwestern areas experienced weather as much as 6.5 percent warmer than normal. As a result, winter consumption in residential and commercial markets is expected to average 20.7 and 12.6 Bcf per day, respectively, up about 9 percent and 10 percent from the previous winter's consumption (Figure SR1).

Supply

Stock levels are about the same as last year's 5-year high

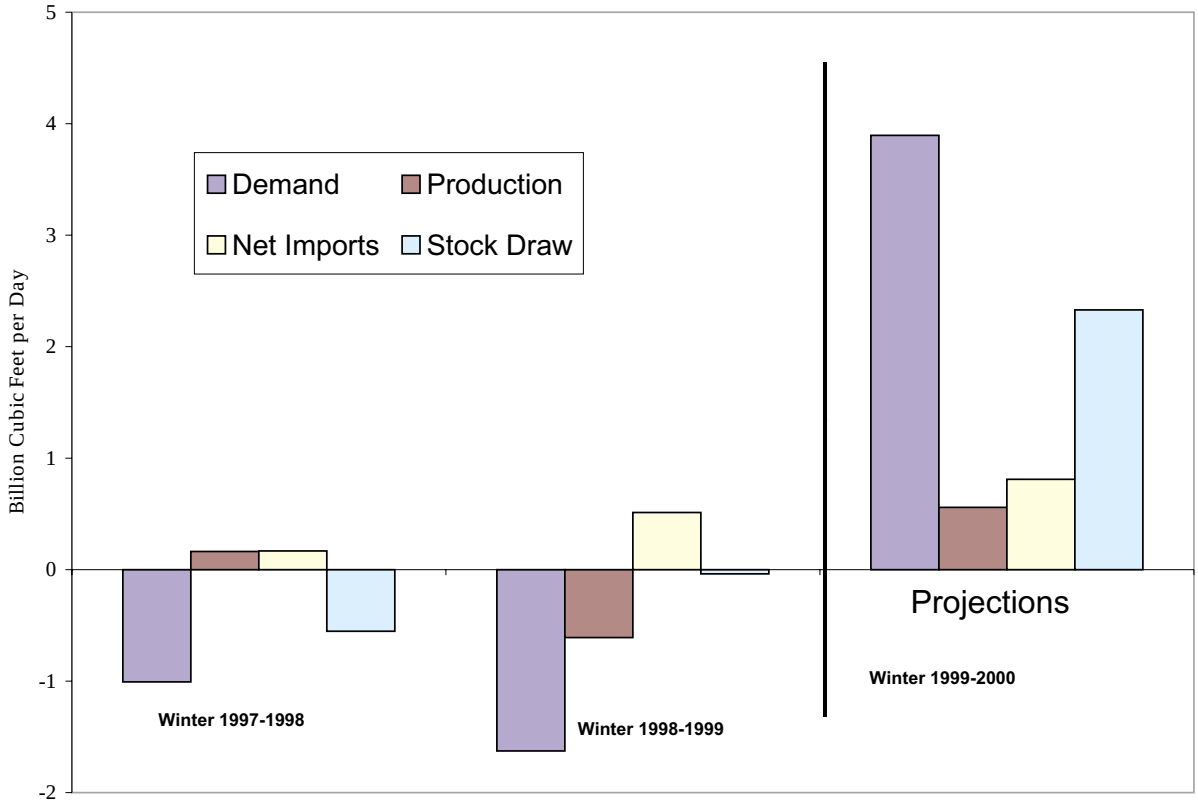
Domestic gas production is expected to average 51.8 Bcf per day during the heating season, up slightly from the 51.2 Bcf per day during the previous winter (Figure SR2). Drilling activity for both oil and gas had dropped sharply in the first quarter of 1999 in reaction to the decline in the price of oil. The total rig count reached a low of 496 in April—44 percent below last April's rig count of 886. Since then, rig counts

Figure SR1. Change in Winter Natural Gas Demand



Sources: Energy Information Administration *Natural Gas Monthly* (September 1999), and the *Short-Term Energy Outlook* (October 1999).

Figure SR2. Change in Natural Gas Supply



Sources: Energy Information Administration *Natural Gas Monthly* (September 1999), and the *Short-Term Energy Outlook* (October 1999).

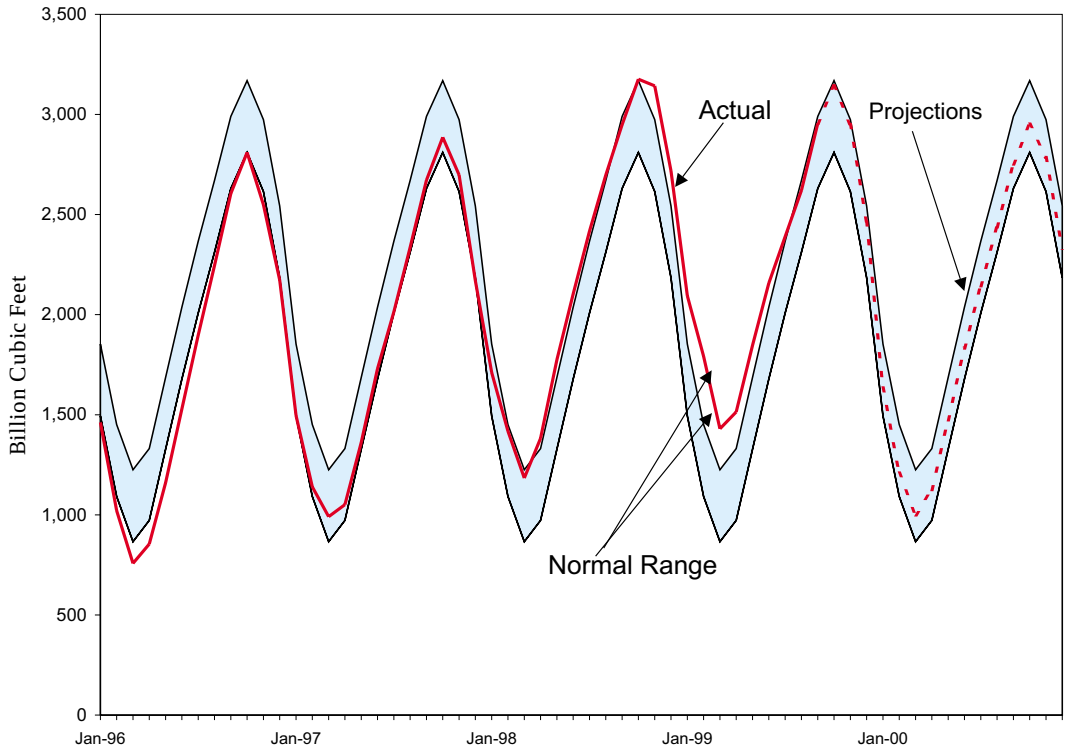
have recovered with the rise in the price of crude oil. By mid-October, the rig count had reached 740, with 599, or 80 percent, of the rigs dedicated to gas exploration. The sharp drop in drilling early in the year and the lead time needed to bring properties to production has been a concern of many in the industry this past spring and summer. However, the Energy Information Administration (EIA) believes that sufficient production capacity remains to meet the moderate increase in production requirements projected here for the base case and for the severe weather scenario.

Working gas storage at the beginning of October is estimated to have reached 2,956 Bcf, slightly above last season's 5-year high of 2,949 Bcf but significantly greater than the October 1, 1998 level of 2,672 Bcf and at the high end of the normal range (Figure SR3). Since 1994 the average stock level on October 1, has been 2,786 Bcf. This year's level is estimated to be 170 Bcf or 6 percent above the average for the previous 5 years.

Storage plays an important role in meeting increased seasonal demand. In many areas of the country, it is a critical supply source for local distribution companies to meet peak demand requirements. During the 1999-2000 heating season, withdrawals are expected to be significantly higher than last year's to meet the additional demand, averaging 10.7 Bcf per day compared to last year's average of 8.4 Bcf per day. Owing to larger projected withdrawals this winter, end-of-season stocks of working gas are projected to be 1,000 Bcf. This level is comparable to the 990 Bcf seen at the end of the 1996-97 heating season with relatively normal weather. Not surprisingly, it is much below the 1,430 Bcf at the end of the last heating season (March 31, 1999) with its warmer than normal temperatures.

The storage refill season, which runs from April through October and may often continue into November, got off to a slow start this year as only 90 Bcf was added to the working gas level in April compared with almost 200 Bcf in April 1998. Net injections returned to a more normal level in May and June as over 300 Bcf was added in each of those months (see NGM, Table 9, on page 21). The refill rate slowed in July and August as record setting summer heat waves affected major gas consuming areas in the

Figure SR3. Working Gas in Storage



Note: The normal range is developed using a seasonal adjustment procedure developed by the Bureau of the Census ("Census X-11"). The procedure uses monthly natural gas stock levels for the 7 most recent years, reported to the EIA on Form EIA-191, "Underground Gas Storage Report," to calculate seasonal factors. These seasonal factors are then applied to the monthly stock levels for the most recent 3 years to compute the average band, or range, for natural gas stocks.

Sources: Energy Information Administration *Natural Gas Monthly* (September 1994, 1997, and 1999), and the *Short-Term Energy Outlook* (October 1999).

Midwest, the Northeast, and the Southwest. The high temperatures increased electric utility use of natural gas in order to meet the demand for air-conditioning. Based on the EIA estimate of 2,956 Bcf in storage on October 1, the industry would need to add only 31 Bcf of gas during October to reach the 5 year average level of 2,987 for November 1. Estimates of weekly injections published by the American Gas Association indicate that over 100 Bcf of gas has already been added to stocks during the first 3 weeks of the month.

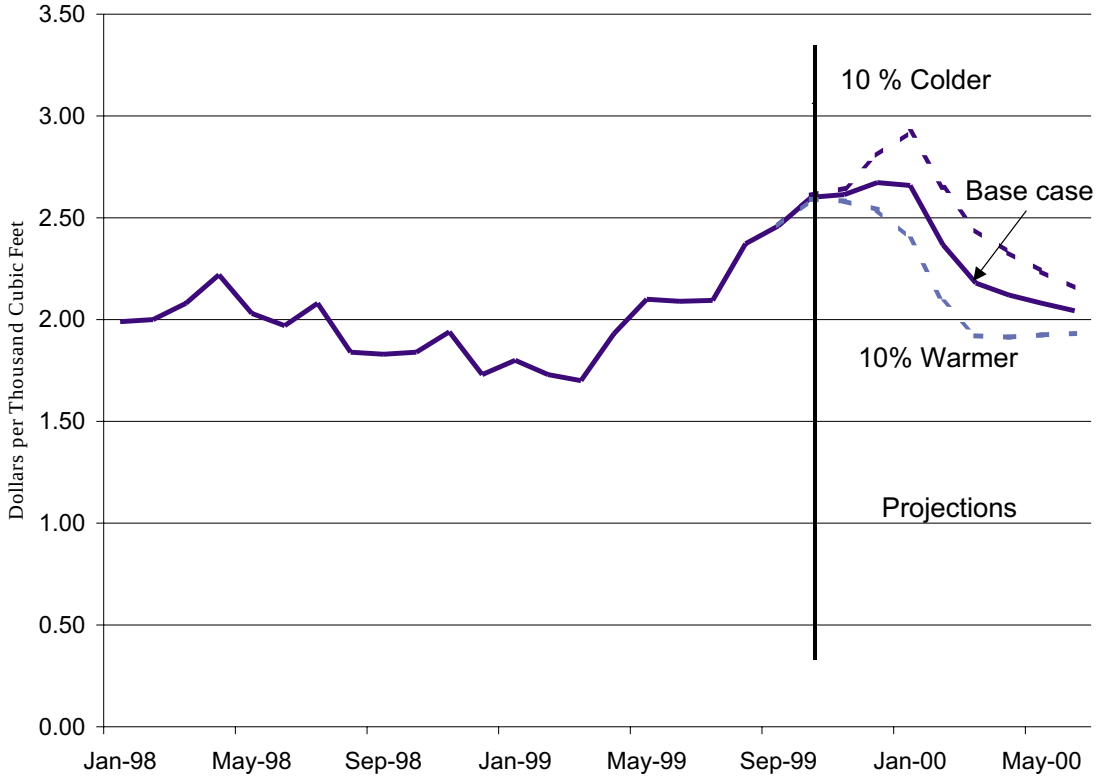
Natural gas imports are expected to contribute 14 percent of demand during the period, averaging 9.6 Bcf per day. This is 9 percent above last year's 8.7 Bcf per day. During the winter months, net imports are about 10 percent higher than flows during the rest of the year and usually increase to full pipeline capacity. That capacity, which had remained unchanged for the previous few years, increased in late 1998 as three construction projects were completed, expanding deliverability of Canadian gas by almost 1 Bcf per day. The largest of these projects, the expansion of the Northern Border pipeline system, increased import capacity into the Midwest by 700 million cubic feet per day.

Price and Expenditures

Higher wellhead prices and normal weather will result in higher residential expenditures.

Natural gas wellhead prices are projected to average about $2.50 per thousand cubic feet (Mcf) this winter, 40 percent above the $1.79 per Mcf average price seen a year ago. Last winter, the average wellhead price in October was low going into the winter at $1.83, rose slightly to $1.94 by November before sliding to $1.70 by the end of the heating season. This was the lowest price in real terms since October 1995's $1.54 per Mcf. Contributing to the low price of natural gas last season were the mild temperatures in several major gas-consuming markets (such as the Midwest), elevated stock levels, and collapsing oil prices. This year's higher oil prices and expected higher demand have already brought much higher gas prices than last year's (Figure SR4).

Figure SR4. Natural Gas Wellhead Prices: Weather Scenarios



Sources: Energy Information Administration *Natural Gas Monthly* (September 1999), and the *Short-Term Energy Outlook* (October 1999).

In mid-October of this year, natural gas prices on the NYMEX futures market for the upcoming winter season were trading 20 to 40 percent above those of last year (Figure SR5). Prices paid by residential consumers are also expected to move up, averaging $6.93 per Mcf, up 10 percent from last winter's average of $6.28. Consumers could see slightly higher or lower prices during the winter, depending on whether abnormally cold or warm conditions develop (Figure SR6).

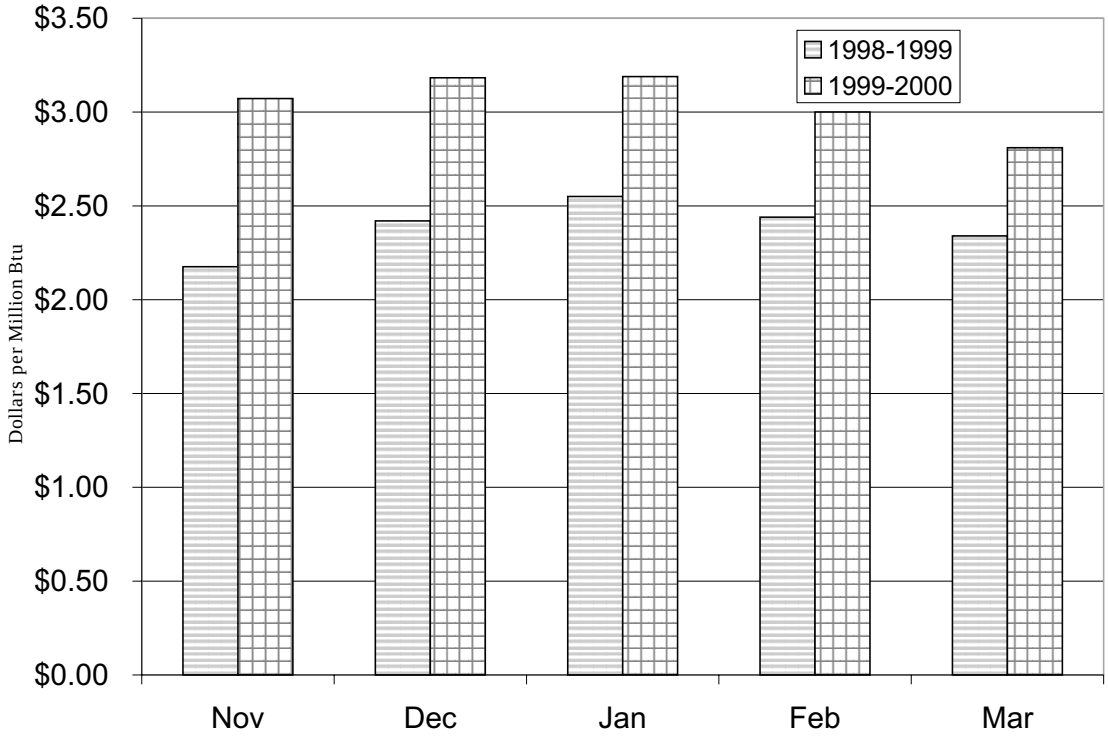
Other Weather Scenarios

Under a severe weather pattern, in which heating-degree days are 10 percent colder than normal, gas consumption could increase by an additional 3.6 Bcf per day—or 5.1 percent—from the base case, rising to 74.0 Bcf per day. The additional demand would be met primarily through an almost 25-percent increase in storage withdrawals, which would increase by 2.6 Bcf per day reaching a draw down of 13.3 Bcf per day. The other two supply sources would also increase, with production growing about 1.0 Bcf per day to reach 52.8 Bcf per day and natural gas imports from Canada increasing by 0.5 Bcf to exceed 10 Bcf per day. The heavy dependence on stock withdrawals would leave 525 Bcf of working gas in inventory at the end of the heating season, 230 Bcf below 1996's record low of 755 Bcf. The sharp increase in demand would bring about a corresponding price movement, which could provide strong motivation for even larger increases in production and import levels than those contained in the STEO severe weather forecast.

The price reaction to such a severe draw on stocks would be hard to predict and is likely to be quite large. At a minimum, with the increased demand, wellhead prices would move up by at least $0.20 per Mcf to average $2.70 or more, and residential prices would increase by $0.13 to average $7.06 per Mcf. Residential demand would increase by 1.8 Bcf per day, or 9 percent. The combined impact of higher demand and prices resulting from a severe winter would raise the average space-heating bill by 10 percent above the bill for the base case for the typical gas-heated household (Table SR1).

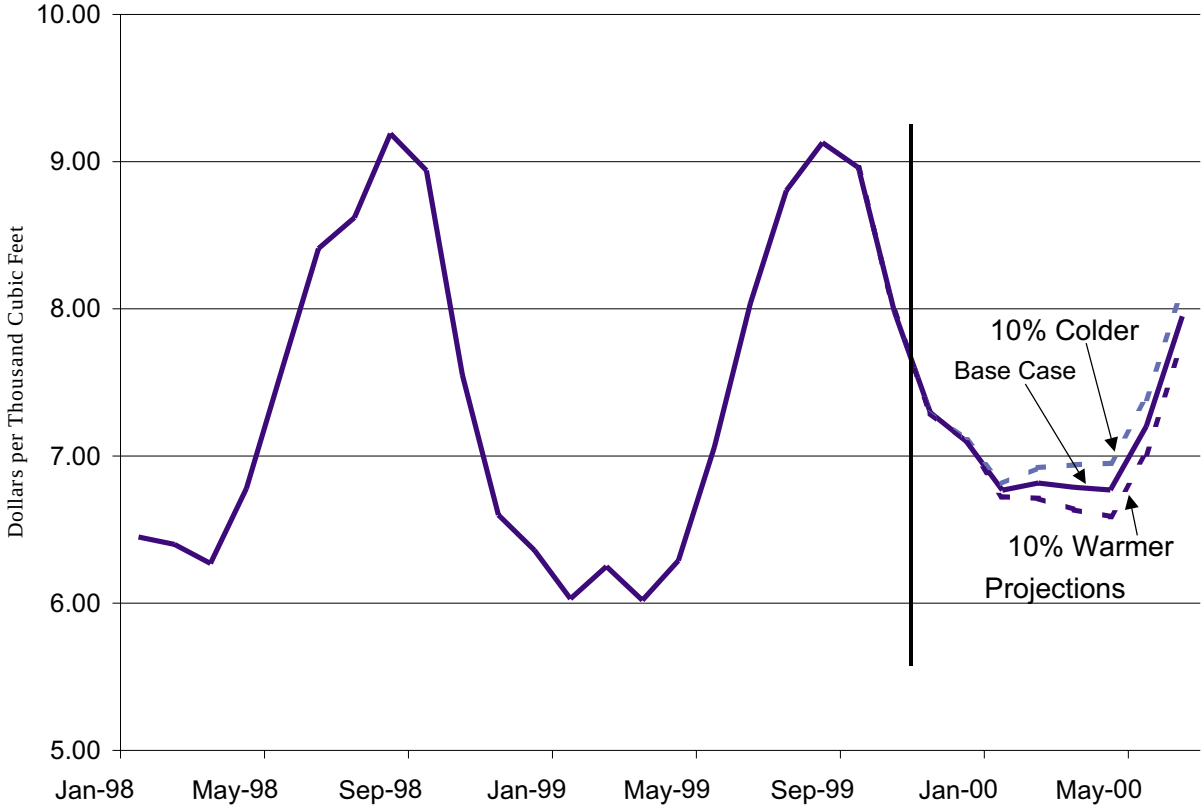
Under a mild weather pattern (10 percent warmer than normal), total natural gas consumption would decline by 4.6 Bcf per day, or 6.5 percent, from that of

Figure SR5. Natural Gas Futures Prices for Winter Months 1998-1999 and 1999-2000, on October 22, 1998 and 1999, Respectively



Source: Futures Prices-Commodity Futures Trading Commision, Division of Economic Analysis.

Figure SR6. Residential Natural Gas Prices: Weather Scenarios



Sources: Energy Information Administration *Natural Gas Monthly* (September 1999), and the *Short-Term Energy Outlook (*October 1999)

the base case reducing consumption to 65.8 Bcf per day. Under this scenario, residential demand would decline by 1.7 Bcf, or 9 percent, averaging 18.9 Bcf per day. The need for withdrawals from storage would also decrease to an average of 7.8 Bcf per day, 2.9 Bcf per day less than under normal weather, leaving end-of-season working gas inventories of 1,536 Bcf. This would be the highest stock level at the end of the heating season since March 1992's 1,574 Bcf. (It should be noted that the working gas stock level on November 1, 1991, was 3,370 Bcf.) The warm weather and reduced demand would see a projected decline in wellhead prices to an average $2.37 per Mcf, $0.13 lower than under normal weather conditions. In a warmer-than-normal winter, the price to residential consumers would average $6.89 per Mcf, $0.04 less than under the assumptions of a normal winter.

Conclusion

The actual outcome regarding the demand, supply, and price of natural gas for this winter will depend very much on the weather. Natural gas commodity or wellhead prices, particularly spot and futures prices, can show high volatility on a daily basis and are very sensitive to shifts in working gas in storage, which is critical for meeting winter demand peaks. For residential gas customers, increases in wellhead costs are passed on with a lag without the volatility seen in the commodity market because of monthly billing cycles and various state regulatory functions. The result is a more moderate increase in the typical residential gas bill compared to those of other fuel users.

Highlights

Overview

This issue of the *Natural Gas Monthly* contains estimates through October 1999 for many natural gas data series at the national level. Estimates of natural gas prices are available through June 1999 for most series. This issue also contains two articles. The Special Focus, "Corporate Realignments and Investments in the Interstate Natural Gas Transmission System," examines the financial characteristics of current ownership of the major U.S. interstate natural gas pipeline companies as well as their near-term investment needs. The Special Report, "Natural Gas Winter Outlook 1999-2000," summarizes the natural gas information contained in the article, "1999-2000 Winter Fuels Outlook" in the Energy Information Administration's *Short-Term Energy Outlook*, 4th quarter 1999.

Highlights of the most recent estimates contained in this issue of the *Natural Gas Monthly* are:

- The 1999-00 heating season (November through March) begins with 3,101 billion cubic feet of natural gas in underground storage facilities at the end of October 1999—the second highest level at the beginning of the heating season since 1992.

- Dry natural gas production for January through October 1999 is 197 billion cubic feet (1 percent) lower than in 1998 during the same period, but net imports are 267 billion cubic feet (11 percent) higher than last year.

- End-use consumption of natural gas for January through October 1999 is 123 billion cubic feet (1 percent) higher than in the same period of 1998.

- Cumulative average natural gas wellhead and end-use prices through July 1999 (through June 1999 for electric utilities) are at least 5 percent lower than for the corresponding period in 1998. The largest decline is in the industrial sector, where the cumulative average price of $2.80 per thousand cubic feet is $0.52 or 16 percent below that of 1998.

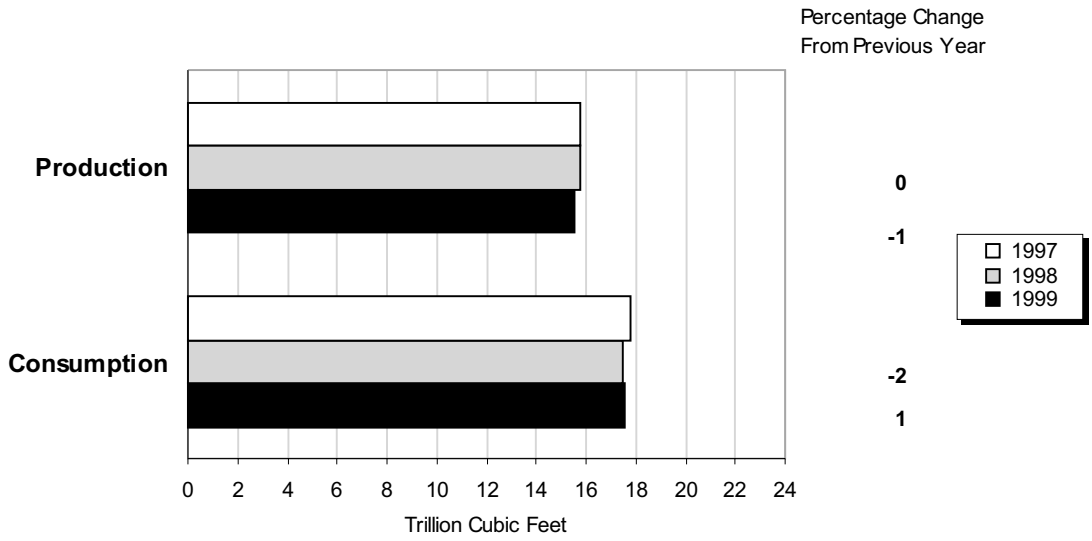
Supply

Cumulative dry natural gas production for the first 10 months of 1999 is 1 percent below that of 1998 during the same period. Net imports have increased during the period, thus supplies have been sufficient to meet the small increase seen in demand for natural gas. Cumulative dry production for January through October 1999 is estimated to be 15,543 billion cubic feet, 197 billion cubic feet (1 percent) lower than in 1998 (Table 1, Figure HI1). Estimated production during October 1999 is 1,585 billion cubic feet, or 51.1 billion cubic feet per day. The daily rate in October 1999 is slightly below that of both September 1999 and October 1998. Monthly production in 1999 has been below that of 1998 in every month except July when the level equaled that of July 1998.

Cumulative net imports of natural gas, which come mostly via pipeline from Canada, are estimated to be 2,755 billion cubic feet through October 1999, 267 billion cubic feet (11 percent) higher than in 1998 during the same period (Table 2). This increase averages 0.88 billion cubic feet per day and was made possible by the addition of nearly 1 billion cubic feet per day of import pipeline capacity that was put into service in late 1998 and early 1999. Net imports during October 1999 are 281 billion cubic feet, or 9.1 billion cubic feet per day. This is slightly below the daily rate of 9.4 billion cubic feet during September 1999. Thus far, net imports each month during 1999 have been from 8 to 14 percent higher than in 1998.

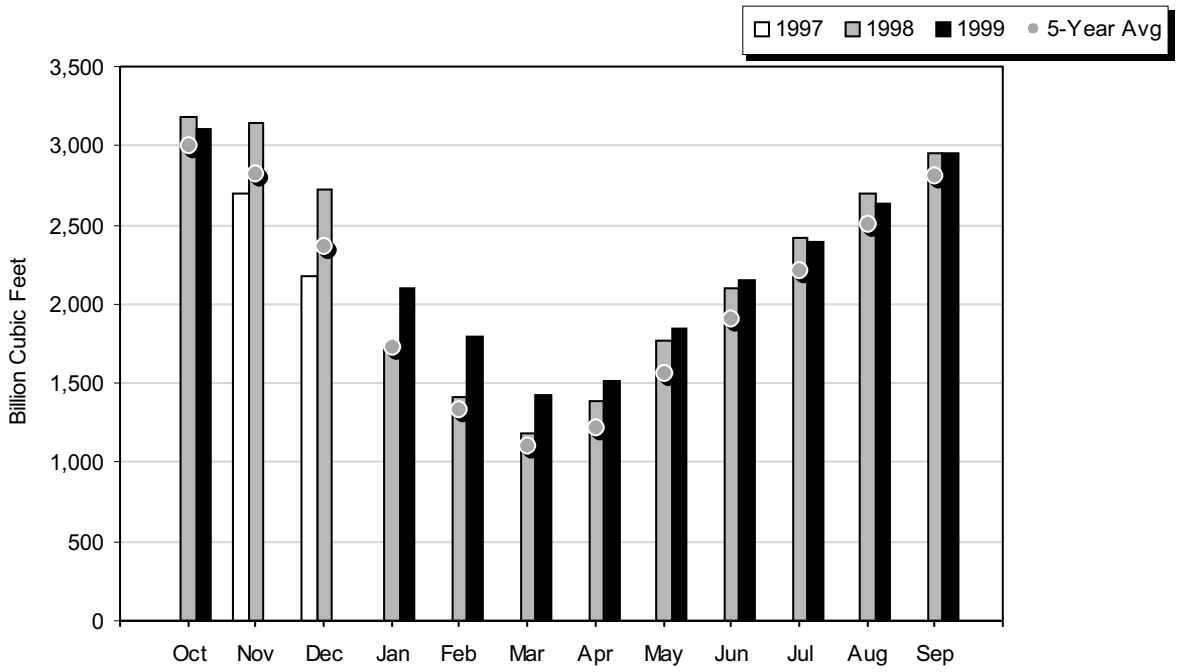
The 1998-99 heating season began with 3,176 billion cubic feet of working gas in underground storage facilities, the highest level at the beginning of the season since 1992. The estimated level of working gas for the end of October 1999 is 3,101 billion cubic feet, 75 billion cubic feet (2 percent) lower than last year but the second-highest level at the end of October since 1992 (Table 10 and Figure HI2). Net injections during

Figure HI1. Natural Gas Production and Consumption, January-October, 1997-1999



Source: Table 2.

Figure HI2. Working Gas in Underground Storage in the United States, 1997-1999



Note: The 4-year average is calculated using the latest available monthly data. For example, the December average is calculated from December storage levels for 1994 to 1998 w hile the January average is calculated from January levels for 1995 to 1999. Data are reported as of the end of the month, thus October data represent the beginning of the heating season.

Source: Form EIA-191, "Underground Natural Gas Storage Report," Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and Short-Term Integrated Forecasting System.

October 1999 were 150 billion cubic feet, less than half the level in September 1999, and the lowest level of net injections during October since 1991. A working gas level near 3,000 billion cubic feet is typically thought to be sufficient for the industry to meet the demand for space heating during a normal winter.

End-Use Consumption

Cumulative end-use consumption of natural gas for January through October 1999 is estimated to be nearly 1 percent higher than during the same period of 1998 (Table 3). The increase is largely the result of higher consumption during January and April when the 1999 levels exceeded those of 1998 by 5 and 4 percent, respectively. Monthly end-use consumption from June through September was from 1 to 3 percent lower than in 1998, while consumption in October 1999 of 1,359 billion cubic feet is 2 percent higher than in October 1998.

Monthly residential consumption of natural gas during 1999 has been higher than in 1998 in every month except February and July, when it was 1 and 2 percent lower, respectively. Cumulative residential consumption through October 1999 is estimated to be 3,632 billion cubic feet, 153 billion cubic feet (4 percent) higher than in 1998 for the same period (Figure HI3). Commercial consumption of natural gas shows a similar pattern, with monthly consumption in 1999 being higher than that of 1998 except in 2 months—June and July. The commercial sector used 1 percent less gas during those 2 months in 1999 compared with 1998. Cumulatively through October 1999, commercial users consumed an estimated 2,473 billion cubic feet of natural gas, 77 billion cubic feet (3 percent) higher than during the same period of 1998.

The use of natural gas in the industrial sector is 1 percent lower in 1999 compared with 1998, according to cumulative estimates through October. Cumulative consumption through October 1999 is 7,013 billion cubic feet, more than in any other sector. The level is 76 billion cubic lower than during the same period in 1998. Declines in monthly consumption between 1998 and 1999 have been seen in January through April as well as in July and August. The largest monthly percentage decline was 4 percent, which occurred in both January and July. Industrial consumption during October 1999 is estimated to be 721 billion cubic feet, 1 percent higher than in October 1998.

Estimates of monthly consumption of natural gas by electric utilities are available through July 1999. Cumulatively through July 1999, electric utilities consumed 1,825 billion cubic feet of gas, 17 billion cubic feet (1 percent) more than in 1998. Consumption during 1999 was higher than in 1998 during the first 4 months (35 percent higher in April), but has been lower in May, June, and July. The July 1999 estimate of 436 billion cubic feet is 3 percent lower than in July 1998.

Prices

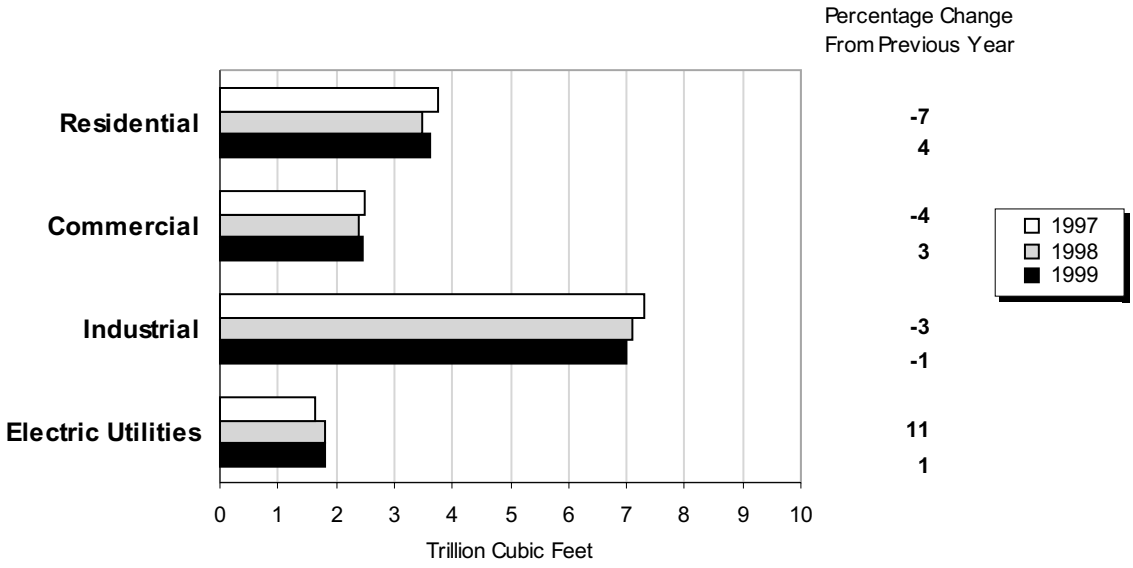
Natural gas prices fell from 1997 to 1998 and the trend has generally continued into the first part of 1999. Monthly estimates of natural gas prices in 1999 are available through July for most price series. Cumulatively through July, natural gas prices are at least 5 percent lower in 1999 than in 1998 during the same period. However, since May 1999, the monthly estimates of the wellhead price and the price paid for natural gas by electric utilities have been equal to or above those of 1998.

The national average wellhead prices for May, June, and July 1999, are $2.10, $2.10, and $2.09 per thousand cubic feet, respectively (Table 4). For May, June, and July 1998, the prices were $2.03, $1.97, and $2.08 per thousand cubic feet, respectively. Wellhead prices during the first part of 1999 were at least 10 percent below those of 1998. Thus, the cumulative average price for January through July 1999, at $1.92 per thousand cubic feet, is $0.13, or 6 percent, lower than in 1998 (Figure HI4). Wellhead prices are expected to increase later in the year according to the Energy Information Administration's *Short-Term Energy Outlook* (*STEO*), averaging $2.28 per thousand cubic feet in the 3rd quarter of 1999 and $2.60 in the 4th quarter.[1] These projections assume normal weather, whereas the past two winters generally have been warmer than normal.

The arrival of autumn temperatures has contributed to the increase seen in natural gas futures market

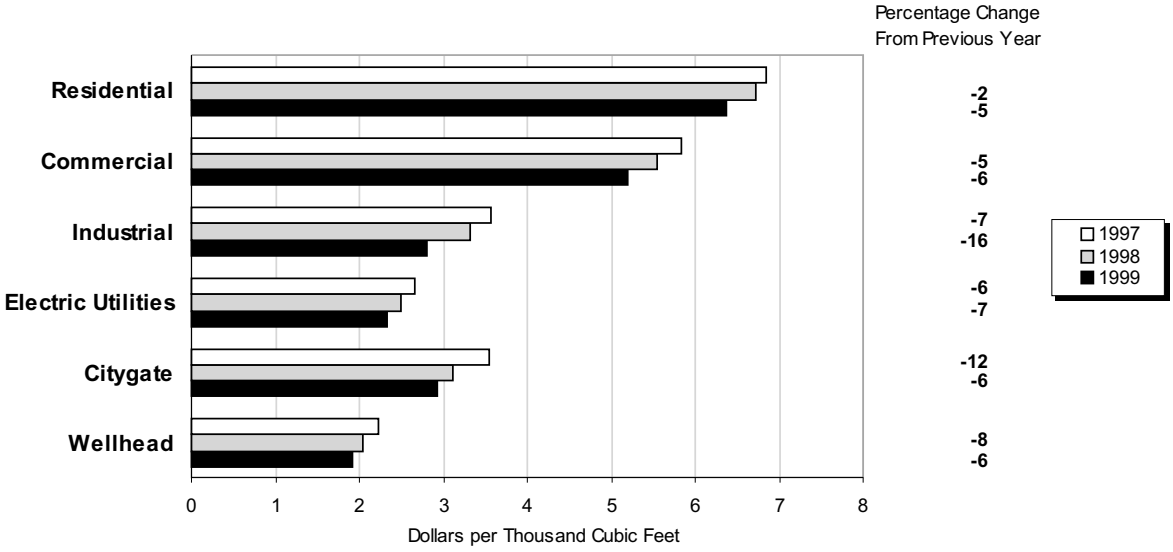
1 Energy Information Administration, *Short-Term Energy Outlook*, 4th Quarter 1999, DOE/EIA-0202(99/4Q) (Washington, DC, October 1999), Table 4, page 55.

Figure HI3. Natural Gas Delivered to Consumers, January-October, 1997-1999



Note: Electric utilities reflect January-July deliveries.
Source: Table 3.

Figure HI4. Average Delivered and Wellhead Natural Gas Prices, January-July, 1997-1997



Note: Commercial and industrial average prices reflect onsystem sales only. The reporting of electric utility prices is 1 month behind the reporting of other prices.
Source: Table 4.

prices at the Henry Hub. The daily futures settlement price on the nearby month contract has generally increased from a recent low of $2.426 per million Btu on September 22, 1999, to $3.072 on October 22, 1999, an increase of 27 percent (Figure HI5). A gap of $0.20 to $0.30 per million Btu developed between the spot and futures prices in late September—the futures price being higher—but as cooler temperatures pushed from the Midwest to the East Coast in mid-October, the Henry Hub spot price caught up to the futures price. The daily average spot price increased 29 percent from $2.35 per million Btu on September 30, 1999, to $3.03 on October 22, 1999.

Cumulative average residential and commercial natural gas prices[2] through July 1999 are each $0.34 per thousand cubic feet lower than in 1998 during the same period. The average residential price is $6.38 per thousand cubic feet and the average commercial price is $5.20 per thousand cubic feet. The price difference in the residential sector is equivalent to a 5-percent drop from 1998, while the commercial price is 6 percent lower than in 1998.

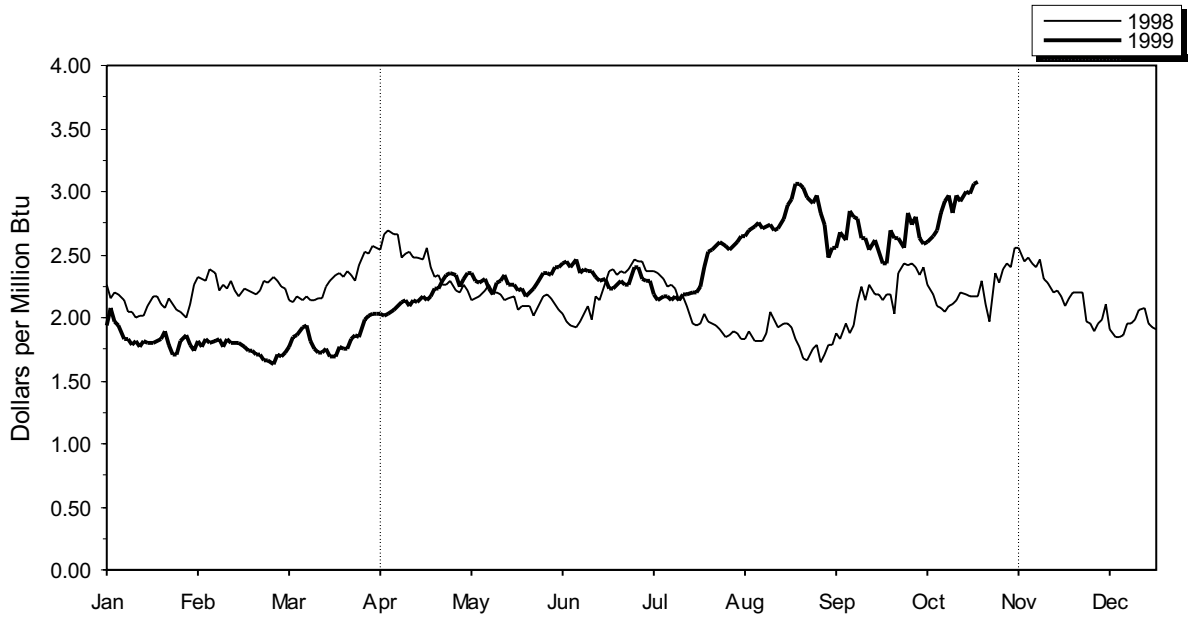
The monthly average price paid for natural gas in the residential sector has increased during the summer, but this is typical behavior for this price series. The estimated residential price has increased from $7.08 per thousand cubic feet in May 1999 to $8.44 in July 1999. The increased average cost during the summer is the result of the type of service residential users require and the strong seasonal pattern of residential consumption. To provide high-quality, on-demand (firm) service to residential users, a demand charge to reserve pipeline transportation capacity is paid. The demand charge is a constant dollar amount throughout the year. Besides the demand charge, the total residential price includes charges for distribution and for the natural gas commodity, both of which may vary throughout the year. The primary use of natural gas in the residential sector is for space heating, thus usage declines during the summer. For example, residential consumption was an estimated 909 billion cubic feet in January 1999, but only 130 billion cubic feet during July 1999. Because the demand charge is a significant portion of the final price and it is a constant each month, when consumption goes down, the average price *per unit of gas consumed* increases. Thus *average* residential natural gas prices always rise during the summer as consumption declines.

Residential expenditures for natural gas during the 1999-00 heating season are expected to be higher than a year earlier because of a return to normal winter weather and higher natural gas wellhead prices. In the Special Report, "Natural Gas Winter Outlook 1999-2000," EIA projects that average household expenditures in the Midwest could increase from $524 in the 1998-99 heating season to $625 in the 1999-00 season, assuming normal winter weather. The percentage increase of 19 percent can be generally expected in other regions as well, even though actual expenditure levels will be different.

Industrial users paid an estimated $2.68 per thousand cubic feet for natural gas in July 1999 and a cumulative average of $2.80 for January through July. The cumulative average price is $0.52 per thousand cubic feet, or 16 percent, lower than in 1998 during the same period. Electric utilities paid an average $2.47 per thousand cubic feet for natural gas in June 1999 and a cumulative average of $2.33 for January through June 1999. The cumulative average price is 7 percent lower than that of 1998, but the price in June 1999 is 3 percent above that of June 1998. The prices paid for natural gas in both the industrial and electric utility sectors tend to respond quickly to changes in wellhead prices.

2 End-use prices in the residential, commercial, and industrial sectors are for onsystem gas sales only. While monthly onsystem sales are nearly 100 percent of residential deliveries, during 1999 they have ranged from 55 to 72 percent of commercial deliveries and only 16 to 19 percent of industrial deliveries (Table 4).

Figure HI5. Daily Futures Settlement Prices at the Henry Hub



Note: The future price is for the nearby month contract, that is, for the next contract to terminate trading. Contracts are traded on the New York Mercantile Exchange. April 1 is the beginning of the natural gas storage refill season. November 1 is the beginning of the heating season.

Source: Commodity Futures Trading Commission, Division of Economic Analysis.

Table 1. Summary of Natural Gas Production in the United States, 1993-1999

(Billion Cubic Feet)

Year and Month	Gross Withdrawals	Repressuring	Nonhydrocarbon Gases Removed[a]	Vented and Flared	Marketed Production (Wet)	Extraction Loss[b]	Dry Gas Production[c]
1993 Total	**22,726**	**3,103**	**414**	**227**	**18,982**	**886**	**18,095**
1994 Total	**23,581**	**3,231**	**412**	**228**	**19,710**	**889**	**18,821**
1995 Total	**23,744**	**3,565**	**388**	**284**	**19,506**	**908**	**18,599**
1996 Total	**24,052**	**3,510**	**518**	**272**	**19,751**	**958**	**18,793**
1997							
January	2,089	305	50	25	1,709	83	1,626
February	1,905	289	46	22	1,549	75	1,474
March	2,103	311	51	23	1,720	83	1,636
April	1,993	285	48	22	1,639	80	1,559
May	2,041	268	50	22	1,702	83	1,619
June	1,952	275	47	18	1,612	78	1,534
July	2,020	272	51	23	1,674	81	1,593
August	2,022	279	52	21	1,671	81	1,590
September	1,988	285	50	21	1,632	79	1,553
October	2,057	307	51	20	1,678	81	1,597
November	1,999	302	52	19	1,626	79	1,547
December	2,044	314	52	22	1,655	80	1,575
Total	**24,213**	**3,492**	**599**	**256**	**19,866**	**964**	**18,902**
1998							
January	[E]2,116	[E]332	[E]46	[E]22	[E]1,717	[E]83	[E]1,633
February	[E]1,901	[E]294	[E]42	[E]18	[E]1,547	[E]75	[E]1,472
March	[E]2,083	[E]321	[E]45	[E]21	[E]1,696	[E]82	[E]1,613
April	[E]2,003	[E]306	[E]44	[E]21	[E]1,632	[E]79	[E]1,553
May	[E]2,063	[E]318	[E]43	[E]20	[E]1,682	[E]82	[E]1,600
June	[E]1,996	[E]294	[E]44	[E]22	[E]1,636	[E]79	[E]1,557
July	[E]2,019	[E]295	[E]45	[E]23	[E]1,656	[E]80	[E]1,576
August	[E]2,038	[E]291	[E]45	[E]24	[E]1,677	[E]81	[E]1,596
September	[E]1,968	[E]274	[E]44	[E]22	[E]1,628	[E]79	[E]1,549
October	[E]2,053	[E]314	[E]44	[E]22	[E]1,672	[E]81	[E]1,591
November	[E]1,993	[E]313	[E]45	[E]23	[E]1,612	[E]78	[E]1,534
December	[E]2,066	[E]329	[E]44	[E]23	[E]1,670	[E]81	[E]1,589
Total	**[E]24,297**	**[E]3,682**	**[E]531**	**[E]261**	**[E]19,824**	**[E]961**	**[E]18,862**
1999							
January	[E]2,062	[E]335	[E]44	[E]21	[E]1,662	[E]81	[E]1,581
February	[E]1,861	[E]290	[E]41	[E]19	[E]1,510	[E]73	[E]1,437
March	[E]2,067	[E]326	[E]45	[E]22	[E]1,675	[E]81	[E]1,594
April	[E]1,954	[E]292	[E]42	[E]21	[E]1,599	[E]78	[E]1,521
May	[E]1,991	[E]262	[E]44	[E]22	[E]1,663	[E]81	[E]1,583
June	[RE]1,949	[RE]280	[RE]42	[E]21	[RE]1,606	[RE]78	[RE]1,528
July	[RE]2,005	[RE]283	[E]44	[E]22	[E]1,656	[E]80	[E]1,576
August	[E]2,019	[E]280	[E]44	[E]22	[E]1,673	[E]81	[E]1,592
September(STIFS)	NA	NA	NA	NA	[E]1,625	[E]79	[E]1,546
October(STIFS)	NA	NA	NA	NA	[E]1,666	[E]81	[E]1,585
1999 YTD	NA	NA	NA	NA	**[E]16,336**	**[E]792**	**[E]15,543**
1998 YTD	**[E]20,238**	**[E]3,039**	**[E]442**	**[E]215**	**[E]16,542**	**[E]802**	**[E]15,740**
1997 YTD	**20,170**	**2,875**	**495**	**215**	**16,585**	**805**	**15,780**

[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.

[E] Estimated Data.

[RE] Revised Estimated Data.

[NA] Not Available.

Notes: Data for 1993 through 1997 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 (STIFS). Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources: 1993-1997: Energy Information Administration (EIA), *Natural Gas Annual 1997.* January 1998 through current month: Form EIA-895, "Monthly Quantity of Natural Gas Report," STIFS, and EIA estimates. See Appendix A, Explanatory Notes 1, 3, and 6, for discussion of computation and estimation procedures and revision policies.

Table 2

Table 2. Supply and Disposition of Dry Natural Gas in the United States, 1993-1999

(Billion Cubic Feet)

Year and Month	Dry Gas Production	Supplemental Gaseous Fuels[a]	Net Imports	Net Storage Withdrawals[b]	Balancing Item[c]	Consumption[d]
1993 Total	**18,095**	**119**	**2,210**	**-36**	**-110**	**20,279**
1994 Total	**18,821**	**111**	**2,462**	**-286**	**-400**	**20,708**
1995 Total	**18,599**	**110**	**2,687**	**415**	**-230**	**21,581**
1996 Total	**18,793**	**109**	**2,784**	**2**	**279**	**21,967**
1997						
January	1,626	12	266	709	-90	2,523
February	1,474	10	228	371	170	2,253
March	1,636	9	241	160	69	2,115
April	1,559	8	224	-61	64	1,795
May	1,619	8	232	-333	62	1,588
June	1,534	6	223	-379	67	1,451
July	1,593	7	225	-293	5	1,537
August	1,590	8	227	-334	28	1,518
September	1,553	6	226	-349	3	1,440
October	1,597	8	239	-218	-92	1,534
November	1,547	10	259	196	-116	1,895
December	1,575	11	246	553	-68	2,317
Total	**18,902**	**103**	**2,837**	**24**	**106**	**21,972**
1998						
January	[E]1,633	[E]12	270	466	[R]33	[R]2,415
February	[E]1,472	[E]10	240	300	[R]92	[R]2,114
March	[E]1,613	[E]11	244	242	[R]13	[R]2,122
April	[E]1,553	[E]9	240	-199	[R]110	[R]1,714
May	[E]1,600	[E]8	242	-393	62	1,519
June	[E]1,557	[E]7	230	-323	[R]9	[R]1,481
July	[E]1,576	[E]9	255	-314	[R]61	[R]1,587
August	[E]1,596	[E]9	264	-283	[R]-8	1,578
September	[E]1,549	[E]9	250	-227	[R]-110	1,471
October	[E]1,591	[E]10	253	-255	-109	1,490
November	[E]1,534	[E]11	246	34	[R]-110	1,714
December	[E]1,589	[E]12	259	435	[R]-165	[R]2,130
Total	**[E]18,862**	**[E]117**	**2,993**	**-518**	**[R]-121**	**[R]21,334**
1999						
January	[E]1,581	[E]13	295	623	[R]14	[R]2,526
February	[E]1,437	[E]10	262	333	69	2,111
March	[E]1,594	[E]11	276	297	[R]-42	[R]2,135
April	[E]1,521	[E]10	[E]266	-91	[R]72	[R]1,778
May	[E]1,583	[E]9	[E]271	-337	[R]12	[R]1,538
June	[RE]1,528	[E]8	[E]263	-306	[R]-38	[R]1,456
July	[E]1,576	[E]9	[RE]276	-225	[R]-115	1,538
August	[E]1,592	[E]9	[E]285	-238	[E]-100	[E]1,548
September(STIFS)	[E]1,546	[E]9	[E]281	[RE]-319	[RE]-70	[E]1,447
October(STIFS)	[E]1,585	[E]10	[E]281	[E]-150	[E]-216	[E]1,511
1999 YTD	**[E]15,543**	**[E]99**	**[E]2,755**	**[E]-414**	**[E]-413**	**[E]17,588**
1998 YTD	**[E]15,740**	**[E]94**	**2,488**	**-987**	**155**	**17,489**
1997 YTD	**15,780**	**82**	**2,332**	**-725**	**286**	**17,756**

[a] Supplemental gaseous fuels data are only collected on an annual basis except for the Dakota Gasification Inc. coal gasification facility which provides data 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 .0025 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.

[b] Monthly and annual data for 1992 through 1997 include underground storage and liquefied natural gas storage. Data for January 1998 forward include underground storage only. See Appendix A, Explanatory Note 7 for discussion of computation procedures.

[c] Represents quantities lost and imbalances in data due to differences among data sources. See Appendix A, Explanatory Note 9, for full discussion.

[d] Consists of pipeline fuel use, lease and plant fuel use, vehicle fuel, and deliveries to consuming sectors as shown in Table 3.

[R] Revised Data.

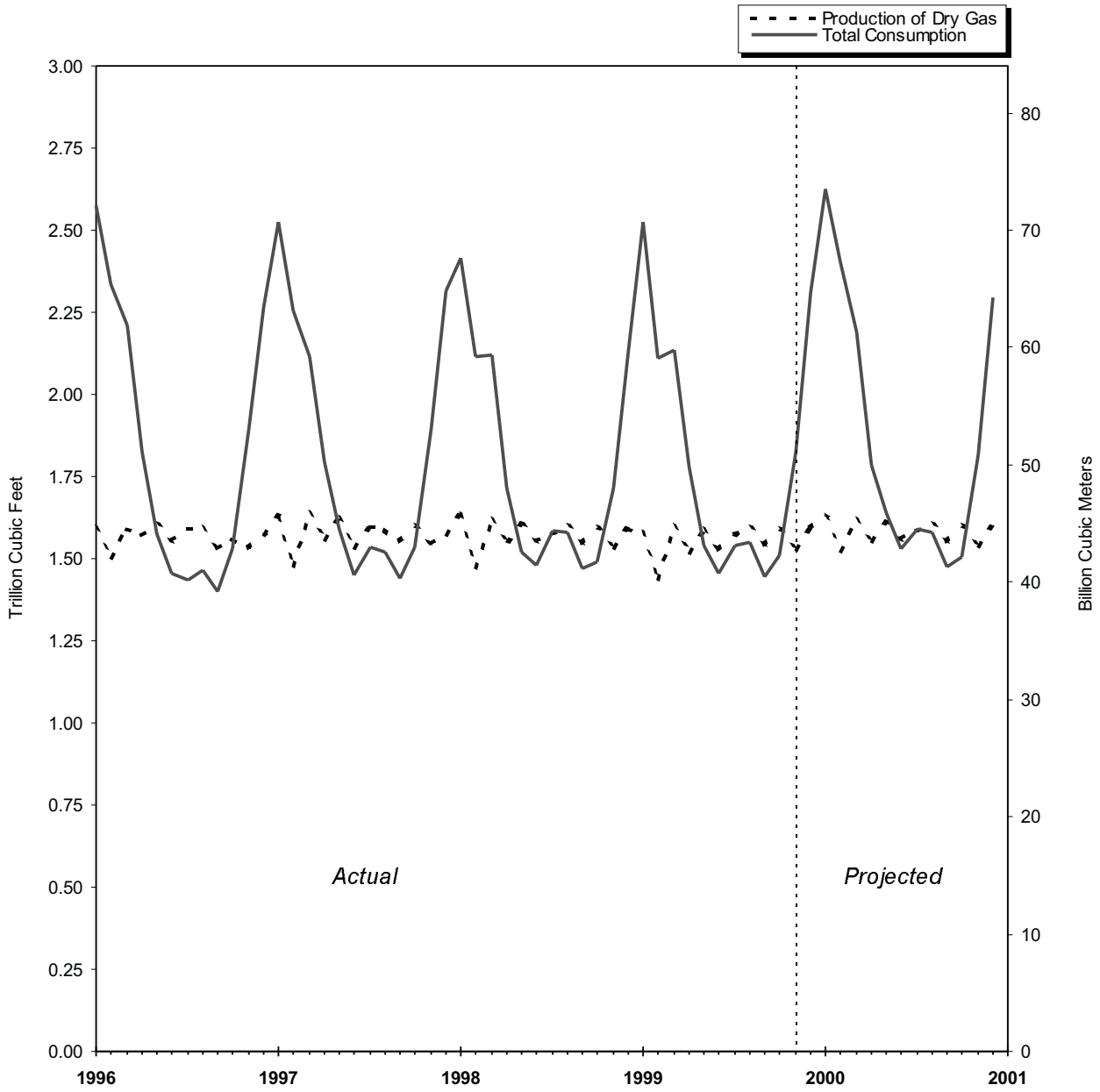
[E] Estimated Data.

[RE] Revised Estimated Data.

Notes: Data for 1993 through 1997 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 (STIFS). Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources: 1993-1997: Energy Information Administration (EIA), *Natural Gas Annual 1997*. 1997: EIA-895, "Monthly Quantity of Natural Gas Report," Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," Form EIA-191, " Monthly Underground Gas Storage Report," and Office of Fossil Energy, U.S. Department of Energy, Natural Gas Imports and Exports and EIA computations. January 1998 through current month: EIA, Form EIA-895, Form EIA-857, Form EIA-191, EIA computations, and estimates, Short-Term Integrated Forecasting System (STIFS) computations, and Office of Fossil Energy, Natural Gas Imports and Exports. See Appendix A for discussion of computation and estimation procedures and revision policies.

Figure 1. Production and Consumption of Natural Gas in the United States, 1996-2000



Sources: 1996 through the current month: Table 2. Projected data: Energy Information Administration, *Short-Term Energy Outlook*

Table 3

Table 3. Natural Gas Consumption in the United States, 1993-1999

(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	
1993 Total	**1,172**	**624**	**4,956**	**[c]2,863**	**7,981**	**2,682**	**18,483**	**20,279**
1994 Total	**1,124**	**685**	**4,848**	**[c]2,897**	**8,167**	**2,987**	**18,899**	**20,708**
1995 Total	**1,220**	**700**	**4,850**	**[c]3,034**	**8,580**	**3,197**	**19,660**	**21,581**
1996 Total	**1,250**	**711**	**5,241**	**[c]3,161**	**8,870**	**2,732**	**20,006**	**21,967**
1997								
January	104	88	902	475	816	139	2,332	2,523
February	94	78	757	421	759	143	2,081	2,253
March	104	73	606	360	782	190	1,938	2,115
April	99	61	433	270	739	193	1,635	1,795
May	102	54	284	204	713	232	1,432	1,588
June	97	49	164	154	690	297	1,305	1,451
July	101	52	128	144	683	429	1,385	1,537
August	101	51	118	140	717	391	1,366	1,518
September	99	49	129	142	689	333	1,293	1,440
October	102	52	234	190	711	244	1,380	1,534
November	99	65	497	306	748	180	1,731	1,895
December	101	81	731	411	796	197	2,135	2,317
Total	**1,202**	**752**	**4,984**	**3,223**	**8,843**	**2,968**	**20,018**	**21,972**
1998								
January	[E]107	83	808	449	[R]797	171	[R]2,225	[R]2,415
February	[E]97	72	685	390	[R]735	134	[R]1,945	[R]2,114
March	[E]106	73	[R]638	[R]368	[R]743	194	[R]1,943	[R]2,122
April	[E]102	59	[R]406	[R]255	701	190	[R]1,553	[R]1,714
May	[E]105	52	221	174	676	290	1,362	1,519
June	[E]102	51	[R]153	142	[R]655	379	[R]1,328	[R]1,481
July	[E]104	54	[R]132	148	[R]700	449	[R]1,429	[R]1,587
August	[E]105	54	115	150	697	457	1,419	1,578
September	[E]102	50	[R]120	[R]144	674	381	[R]1,318	1,471
October	[E]105	51	200	177	711	246	1,334	1,490
November	[E]101	59	390	263	724	178	[R]1,555	1,714
December	[E]105	73	613	[R]365	786	189	[R]1,953	[R]2,130
Total	**[E]1,241**	**730**	**[R]4,481**	**[R]3,025**	**[R]8,599**	**3,258**	**[R]19,363**	**[R]21,334**
1999								
January	[E]104	86	[R]909	481	[R]767	179	[R]2,336	[R]2,526
February	[E]95	72	[R]675	396	[R]721	152	[R]1,945	2,111
March	[E]105	73	657	[R]377	[R]717	206	[R]1,957	[R]2,135
April	[E]100	61	415	[R]264	[R]683	256	[R]1,617	[R]1,778
May	[E]104	53	236	[R]184	[R]688	273	[R]1,381	[R]1,538
June	[RE]101	50	157	[R]149	675	324	[R]1,305	[R]1,456
July	[E]104	53	130	146	670	436	1,382	1,538
August(STIFS)	[E]104	[E]45	[E]116	[E]148	[E]693	NA	[E]1,398	[E]1,548
September(STIFS)	[E]100	[E]48	[E]128	[E]148	[E]677	NA	[E]1,299	[E]1,447
October(STIFS)	[E]105	[E]48	[E]210	[E]178	[E]721	NA	[E]1,359	[E]1,511
1999 YTD[d]	**[E]1,020**	**[E]589**	**[E]3,632**	**[E]2,473**	**[E]7,013**	**1,825**	**[E]15,979**	**[E]17,588**
1998 YTD[d]	**[E]1,036**	**598**	**3,479**	**2,396**	**7,089**	**1,808**	**15,856**	**17,489**
1997 YTD[d]	**1,002**	**606**	**3,755**	**2,501**	**7,299**	**1,623**	**16,147**	**17,756**

[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.

[c] Vehicle fuel deliveries, in billion cubic feet, were 0.4 in 1991, 0.5 in 1992, 1.0 in 1993, 1.7 in 1994, 2.7 in 1995, 2.9 in 1996 and 4.4 in 1997.

[d] Year-to-date volume represents months for which volume information is available in the current year.

[R] Revised Data.

[E] Estimated Data.

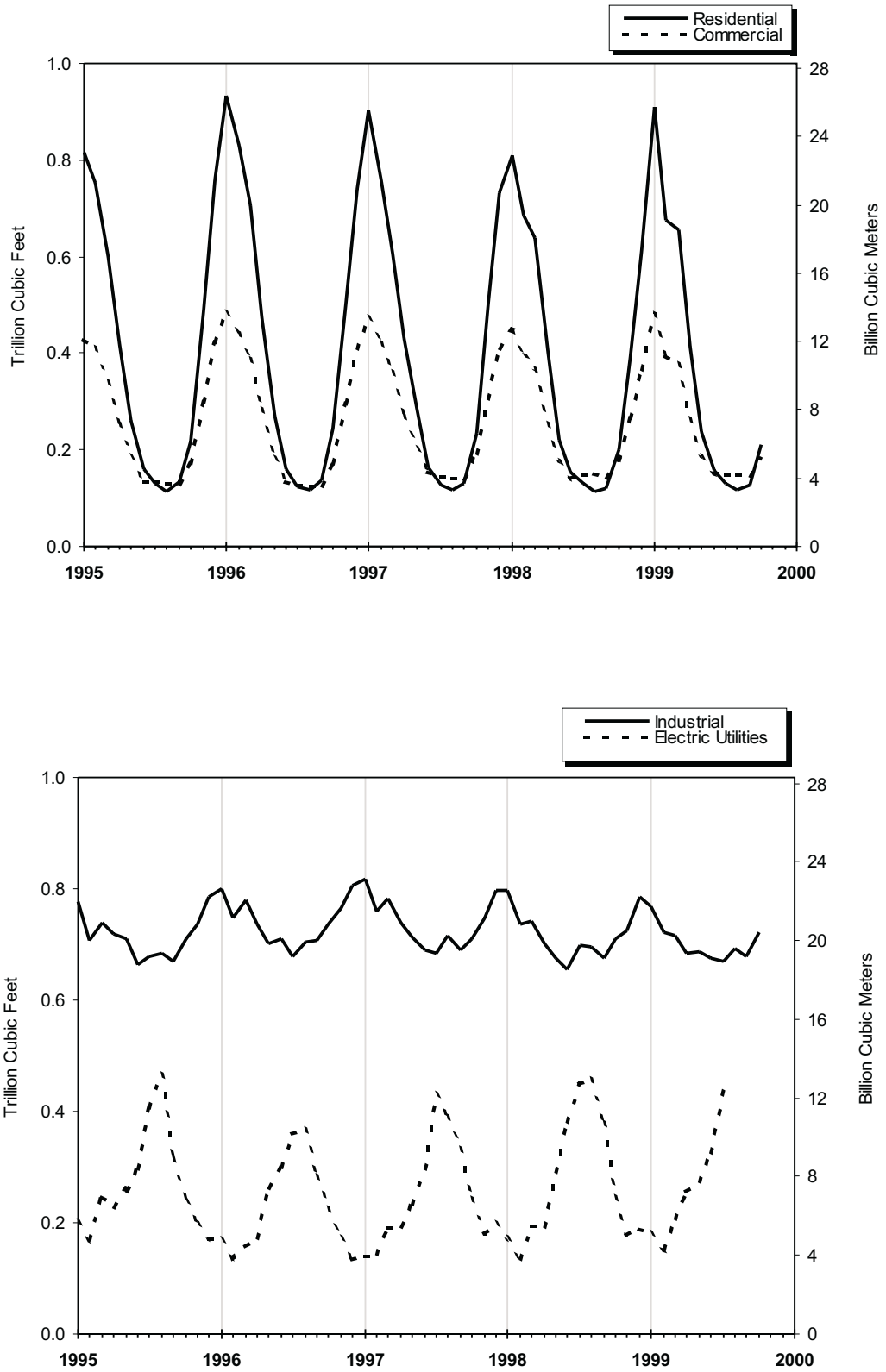
[RE] Revised Estimated Data.

[NA] Not Available.

Notes: Data for 1993 through 1997 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 (STIFS). Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding. In 1996, consumption of natural gas for agricultural use is classified' as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

Sources: 1993-1997: Energy Information Administration (EIA): Form EIA-627, "Annual Quantity and Value of Natural Gas Report," (thru 1994), Form EIA-895 "Monthly Quantity of Natural Gas Report," (1995 forward), Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," Form EIA-759, "Monthly Power Plant Report," EIA computations, and *Natural Gas Annual 1997*. January 1998 through the current month: EIA: Form EIA-895, Form EIA-857, Form EIA-759, and STIFS computations. See Appendix A, Explanatory Note 5, for computation procedures and revision policy.

Figure 2. Natural Gas Deliveries to Consumers in the United States, 1995-1999



Sources: Table 3.

Table 4

Table 4. Selected National Average Natural Gas Prices, 1993-1999

(Dollars per Thousand Cubic Feet)

Year and Month	Wellhead Price[a]	City Gate Price	Delivered to Consumers					
			Residential Price	Commercial		Industrial		Electric Utilities Price
				Price	% of Total[b]	Price	% of Total[b]	
1993 Annual Average	**2.04**	**3.21**	**6.16**	**5.22**	**83.9**	**3.07**	**29.7**	**2.61**
1994 Annual Average	**1.85**	**3.07**	**6.41**	**5.44**	**79.3**	**3.05**	**25.5**	**2.28**
1995 Annual Average	**1.55**	**2.78**	**6.06**	**5.05**	**76.7**	**2.71**	**24.5**	**2.02**
1996 Annual Average	**2.17**	**3.34**	**6.34**	**5.40**	**77.6**	**3.42**	**19.4**	**2.69**
1997								
January	3.40	4.28	6.74	6.18	78.8	4.65	21.6	4.06
February	2.49	3.76	6.79	6.13	78.4	4.20	19.7	2.97
March	1.79	3.04	6.52	5.72	74.0	3.35	18.8	2.29
April	1.81	2.92	6.53	5.46	71.8	3.02	18.4	2.30
May	2.00	3.11	6.83	5.39	65.5	2.96	18.1	2.41
June	2.08	3.41	8.30	5.64	61.7	3.10	17.4	2.52
July	2.00	3.44	8.78	5.35	59.5	3.06	15.3	2.44
August	2.08	3.34	8.99	5.43	57.9	2.90	15.6	2.53
September	2.33	3.50	8.84	5.57	59.5	3.25	15.1	2.96
October	2.68	3.86	7.69	5.73	62.9	3.69	16.8	3.24
November	2.92	3.91	6.86	5.85	70.4	4.07	18.0	3.41
December	2.28	3.42	6.54	5.70	72.8	3.79	17.2	2.77
Annual Average	**2.32**	**3.61**	**6.94**	**5.79**	**70.8**	**3.59**	**17.7**	**2.74**
1998								
January	[E]1.99	[R]3.11	6.45	5.59	72.1	[R]3.69	[R]15.0	2.64
February	[E]2.00	3.08	6.40	5.56	71.1	[R]3.57	15.4	2.51
March	[E]2.08	[R]3.08	6.27	5.38	[R]72.0	3.43	16.3	2.53
April	[E]2.22	3.22	[R]6.79	[R]5.59	[R]66.2	3.26	14.7	2.59
May	[E]2.03	3.10	7.60	5.69	60.6	3.10	13.9	2.47
June	[E]1.97	2.98	[R]8.39	5.51	60.2	2.95	14.0	2.40
July	[E]2.08	[R]3.31	[R]8.49	5.65	52.7	3.01	[R]12.6	2.50
August	[E]1.84	3.05	[R]9.17	[R]5.48	[R]50.1	2.75	13.4	2.21
September	[E]1.83	[R]2.73	[R]8.91	5.56	[R]53.6	2.66	14.2	2.15
October	[E]1.84	3.00	7.55	5.33	[R]55.6	2.75	14.1	2.22
November	[E]1.94	3.00	6.60	[R]5.25	[R]62.1	2.95	15.0	2.37
December	[E]1.73	[R]3.07	6.36	5.22	[R]66.2	2.92	16.4	2.22
Annual Average	**[E]1.96**	**[R]3.07**	**6.82**	**5.47**	**[R]64.8**	**[R]3.11**	**14.6**	**2.37**
1999								
January	[E]1.80	2.86	[R]6.02	5.13	71.5	3.09	15.7	2.26
February	[E]1.73	2.94	6.25	5.18	68.3	3.00	15.4	2.27
March	[E]1.70	[R]2.67	6.02	5.03	[R]68.4	2.77	16.6	2.11
April	[E]1.93	2.89	6.31	[R]5.69	[R]63.7	2.80	15.7	2.25
May	[E]2.10	[R]3.23	[R]7.08	[R]5.15	[R]59.9	2.65	[R]17.1	2.48
June	[RE]2.10	[R]3.19	[R]7.89	[R]5.23	[R]57.2	2.67	18.3	2.47
July	[E]2.09	3.12	8.44	5.24	54.9	2.68	18.8	[NA]
1999 YTD[c]	**[E]1.92**	**2.92**	**6.38**	**5.20**	**65.9**	**2.80**	**16.8**	**2.33**
1998 YTD[c]	**[E]2.05**	**3.12**	**6.72**	**5.55**	**67.7**	**3.32**	**14.6**	**2.50**
1997 YTD[c]	**2.22**	**3.54**	**6.85**	**5.84**	**72.9**	**3.56**	**18.6**	**2.66**

[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 25 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.

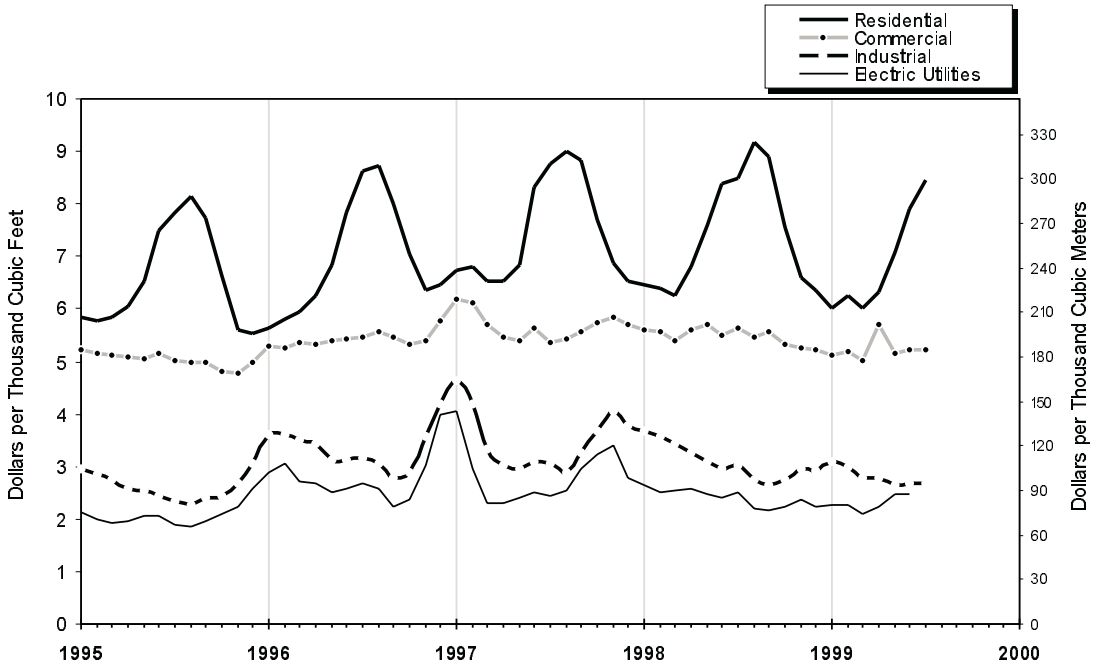
[RE] Revised Estimated Data.

[NA] Not Available.

Notes: Data for 1993 through 1997 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. In 1996, consumption of natural gas for agricultural use is classified as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

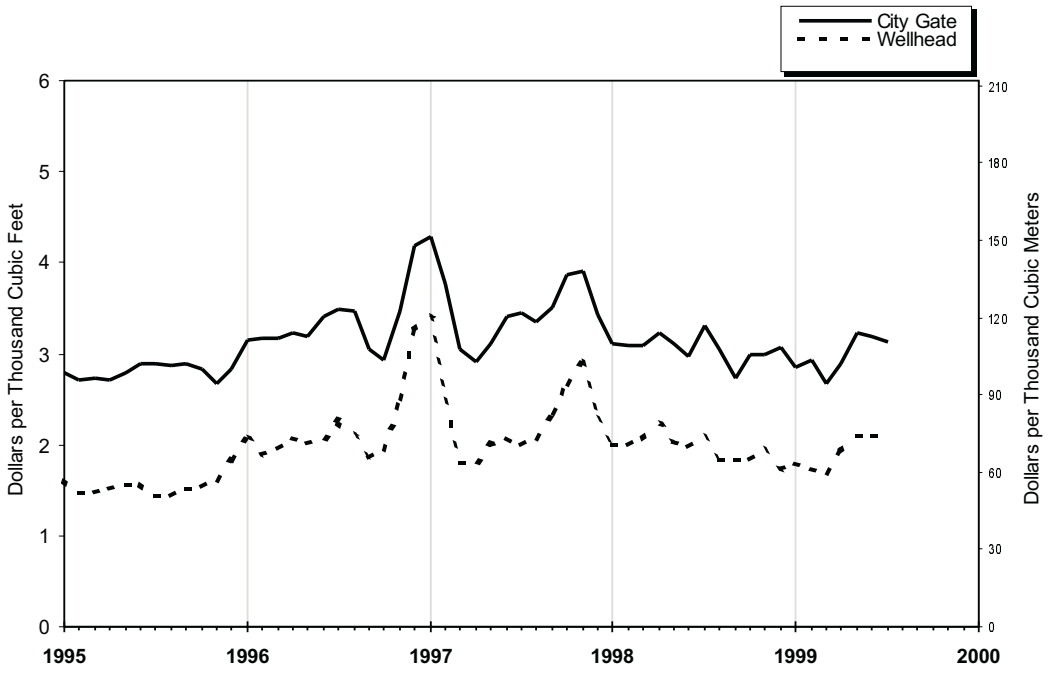
Sources: 1993-1997: Energy Information Administration (EIA) *Natural Gas Annual 1997.* 1998 forward: EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants," and EIA estimates. January 1998 through current month: See Appendix A, Explanatory Note 8 for estimation procedures and revision policy.

Figure 3. Average Price of Natural Gas Delivered to Consumers in the U.S., 1995-1999



Source: Table 4

Figure 4. Average Price of Natural Gas in the United States, 1995-1999



Source: Table 4

Table 5

Table 5. U.S. Natural Gas Imports, by Country, 1994-1999

(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Pipeline				LNG			
	Canada		Mexico		Algeria		Australia	
	Volume	Average Price	Volume	Average Price	Volume	Average Price	Volume	Average Price
1993 Total	**2,266,751**	**2.02**	**1,678**	**1.94**	**81,685**	**2.20**	**0**	—
1994 Total	**2,566,049**	**1.86**	**7,013**	**1.99**	**50,778**	**2.28**	**0**	—
1995 Total	**2,816,408**	**1.48**	**6,722**	**1.53**	**17,918**	**2.30**	**0**	—
1996 Total	**2,883,277**	**1.96**	**13,862**	**2.25**	**35,325**	**2.70**	**0**	—
1997								
January	266,756	3.27	1,555	3.09	7,560	2.78	0	—
February	230,352	2.50	2,526	2.49	7,667	3.00	0	—
March	251,328	1.70	3,127	1.83	2,530	2.98	0	—
April	235,431	1.66	189	1.92	2,557	2.23	0	—
May	234,345	1.81	2,380	2.03	2,552	2.20	2,455	2.68
June	225,366	1.87	1,692	2.20	5,059	2.49	0	—
July	229,479	1.82	1,088	1.98	5,026	2.48	0	—
August	237,142	1.81	6	2.35	7,535	2.43	0	—
September	232,090	2.00	29	2.47	5,030	2.41	2,337	2.88
October	245,742	2.32	965	2.92	5,050	2.70	0	—
November	257,782	2.71	1,874	2.82	7,542	2.89	4,893	3.07
December	253,338	2.17	1,810	2.12	7,567	2.88	0	—
Total	**2,899,152**	**2.15**	**17,243**	**2.31**	**65,675**	**2.67**	**9,686**	**2.92**
1998								
January	276,118	2.06	55	2.12	10,105	2.51	0	—
February	239,091	1.90	2,184	2.04	7,606	2.51	2,171	3.99
March	257,485	1.97	380	2.20	5,166	2.50	0	—
April	247,363	2.03	3,249	2.37	2,549	2.52	0	—
May	243,868	2.00	845	2.15	7,596	2.51	0	—
June	235,847	1.86	5	2.21	5,149	2.51	2,441	2.91
July	259,412	1.96	1,821	2.13	5,086	2.52	0	—
August	268,535	1.80	1,413	1.78	2,540	2.52	2,321	2.92
September	254,752	1.66	2,257	1.86	5,133	2.52	0	—
October	260,135	1.92	905	1.65	5,023	2.50	0	—
November	247,971	2.09	0	—	5,042	2.51	2,353	3.55
December	261,495	2.14	1,418	1.77	7,572	2.51	2,348	3.18
Total	**3,052,073**	**1.95**	**14,532**	**2.03**	**68,567**	**2.51**	**11,634**	**3.30**
1999								
January	290,266	1.98	4,891	1.76	12,612	[R]2.47	0	—
February	258,656	1.89	4,398	1.71	7,423	[R]2.51	2,557	[R]3.56
March	279,161	1.82	751	1.61	12,648	[R]2.70	0	—
April	265,973	[R]1.84	4,192	2.04	7,639	[R]2.46	0	—
May	270,034	[R]2.17	6,843	1.97	3,900	[R]2.67	0	—
June	256,251	[R]2.13	4,978	2.14	2,528	[R]1.96	2,314	[R]2.34
July	[R]271,431	NA	[E]5,000	NA	5,133	NA	0	—
August	[E]278,605	NA	[E]5,000	NA	2,554	NA	2,684	NA
1999 YTD	**[E]2,170,378**	NA	**[E]36,053**	NA	**54,437**	NA	**7,555**	NA
1998 YTD	**2,027,720**	**1.95**	**9,952**	**2.14**	**45,799**	**2.51**	**6,933**	**3.25**
1997 YTD	**1,910,200**	**2.07**	**12,563**	**2.22**	**40,487**	**2.62**	**2,455**	**2.68**

See footnotes at end of table.

Table 5. U.S. Natural Gas Imports, by Country, 1994-1999

(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet) — Continued

Year and Month	LNG						Total	
	Qatar		Trinidad		United Arab Emirates			
	Volume	Average Price	Volume	Average Price	Volume	Average Price	Volume	Average Price
1993 Total	**0**	—	**0**	—	**0**	—	**2,350,115**	**2.03**
1994 Total	**0**	—	**0**	—	**0**	—	**2,623,839**	**1.87**
1995 Total	**0**	—	**0**	—	**0**	—	**2,841,048**	**1.49**
1996 Total	**0**	—	**0**	—	**4,949**	**3.46**	**2,937,413**	**1.97**
1997								
January	0	—	0	—	2,417	3.74	278,288	3.26
February	0	—	0	—	0	—	240,545	2.52
March	0	—	0	—	0	—	256,985	1.72
April	0	—	0	—	0	—	238,178	1.67
May	0	—	0	—	0	—	241,732	1.83
June	0	—	0	—	0	—	232,118	1.88
July	0	—	0	—	0	—	235,593	1.84
August	0	—	0	—	0	—	244,684	1.83
September	0	—	0	—	0	—	239,486	2.01
October	0	—	0	—	0	—	251,758	2.33
November	0	—	0	—	0	—	272,091	2.72
December	0	—	0	—	0	—	262,716	2.19
Total	**0**	—	**0**	—	**2,417**	**3.74**	**2,994,173**	**2.17**
1998								
January	0	—	0	—	0	—	286,278	2.08
February	0	—	0	—	0	—	251,052	1.94
March	0	—	0	—	0	—	263,032	1.98
April	0	—	0	—	0	—	253,161	2.04
May	0	—	0	—	0	—	252,310	2.02
June	0	—	0	—	0	—	243,442	1.88
July	0	—	0	—	0	—	266,319	1.97
August	0	—	0	—	0	—	274,809	1.82
September	0	—	0	—	0	—	262,142	1.68
October	0	—	0	—	0	—	266,063	1.93
November	0	—	0	—	2,667	2.78	258,033	2.12
December	0	—	0	—	2,585	2.47	275,417	2.16
Total	**0**	—	**0**	—	**5,252**	**2.63**	**3,152,058**	**1.97**
1999								
January	0	—	0	—	0	—	307,769	2.00
February	2,481	2.75	0	—	0	—	275,515	1.93
March	0	—	0	—	0	—	292,560	1.86
April	2,492	[R]1.93	0	—	0	—	280,296	[R]1.86
May	0	—	5,493	[R]1.90	0	—	286,270	[R]2.17
June	2,417	[R]1.98	6,620	[R]2.08	0	—	275,109	[R]2.13
July	2,388	NA	6,599	NA	0	—	[RE]290,552	NA
August	0	—	9,898	NA	0	—	[E]298,741	NA
1999 YTD	**9,779**	NA	**28,609**	NA	**0**	—	**[E]2,306,811**	NA
1998 YTD	**0**	—	**0**	—	**0**	—	**2,090,403**	**1.97**
1997 YTD	**0**	—	**0**	—	**2,417**	**3.74**	**1,968,122**	**2.09**

[R] Revised Data.
[E] Estimated Data.
[RE] Revised Estimated Data.
NA Not Available.
— Not Applicable.

Sources: 1993-1994: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1995 through the current month (except estimates): Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports.* Estimated pipeline data (shown with an "E") are taken from data from the National Energy Board of Canada plus EIA estimates. LNG data: Industry reports.

Table 6

Table 6. U.S. Natural Gas Exports, by Country, 1993-1999

(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Pipeline				LNG				Total	
	Canada		Mexico		Japan		Mexico			
	Volume	Average Price	Volume	Average Price	Volume	Average Price	Volume	Average Price	Volume	Average Price
1993 Total	**44,518**	**2.14**	**39,676**	**2.02**	**55,989**	**3.34**	**0**	—	**140,183**	**2.59**
1994 Total	**52,556**	**2.42**	**46,500**	**1.68**	**62,682**	**3.18**	**0**	—	**161,738**	**2.50**
1995 Total	**27,554**	**1.96**	**61,283**	**1.50**	**65,283**	**3.41**	**0**	—	**154,119**	**2.39**
1996 Total	**51,905**	**2.67**	**33,840**	**2.11**	**67,648**	**3.65**	**0**	—	**153,393**	**2.97**
1997										
January	4,193	4.08	2,231	4.08	5,604	4.25	0	—	12,028	4.16
February	5,169	3.02	1,677	2.32	5,596	4.20	0	—	12,443	3.46
March	9,115	2.05	1,486	1.55	5,675	4.16	0	—	16,276	2.74
April	5,168	1.78	3,044	1.83	5,660	4.06	0	—	13,872	2.72
May	4,107	2.08	2,177	1.96	3,812	3.83	0	—	10,097	2.72
June	3,162	2.28	2,579	2.14	3,786	3.72	0	—	9,527	2.81
July	3,257	2.14	3,122	2.17	3,756	3.66	0	—	10,136	2.71
August	3,820	2.15	6,282	2.37	7,532	3.62	0	—	17,633	2.86
September	3,129	2.37	6,159	2.59	3,767	3.58	0	—	13,055	2.83
October	2,432	2.85	4,182	2.87	5,676	3.58	0	—	12,289	3.19
November	5,579	3.10	1,782	3.16	5,691	3.66	0	—	13,051	3.35
December	7,318	2.58	3,650	2.30	5,631	3.58	0	—	16,600	2.86
Total	**56,447**	**2.52**	**38,372**	**2.46**	**62,187**	**3.83**	**0**	—	**157,006**	**3.02**
1998										
January	4,930	2.53	4,257	2.11	7,446	3.67	0	—	16,632	2.93
February	4,502	2.11	3,117	2.06	3,726	3.42	0	—	11,346	2.53
March	7,851	2.25	4,202	2.14	7,435	3.09	0	—	19,488	2.55
April	4,509	2.47	2,675	2.23	5,702	2.81	0	—	12,886	2.57
May	2,083	2.28	6,119	2.12	1,891	2.70	0	—	10,093	2.26
June	1,938	2.03	5,617	1.98	5,695	2.69	0	—	13,250	2.29
July	1,634	1.97	3,852	2.20	5,679	2.70	0	—	11,166	2.42
August	52	1.87	4,834	1.95	5,676	2.70	1	5.88	10,563	2.35
September	1,481	2.09	2,892	1.81	7,584	2.68	0	—	11,957	2.40
October	2,127	2.03	5,167	1.90	5,679	2.72	3	5.74	12,975	2.28
November	3,630	2.17	5,079	2.00	3,776	2.75	9	5.69	12,494	2.28
December	5,152	2.26	5,323	1.99	5,662	2.73	20	5.68	16,157	2.34
Total	**39,891**	**2.25**	**53,133**	**2.04**	**65,951**	**2.91**	**33**	**5.69**	**159,007**	**2.45**
1999										
January	2,373	1.91	4,526	1.83	5,587	2.61	24	7.48	12,510	2.20
February	3,360	1.94	4,753	1.74	5,563	2.49	28	7.46	13,704	2.11
March	4,883	1.80	5,950	1.64	5,570	2.75	22	7.41	16,425	2.07
April	[E]4,002	[R]1.79	[R]5,049	[R]1.89	5,699	[R]2.48	[R]19	[R]7.23	[E]14,769	[R]2.10
May	[E]3,500	[R]2.26	[R]6,109	[R]2.29	5,586	[R]2.70	[R]24	[R]7.47	[E]15,219	[R]2.44
June	[E]3,300	[R]2.16	[R]5,278	[R]2.32	3,723	[R]2.41	[R]19	[R]7.34	[E]12,320	[R]2.31
July	[E]3,300	NA	[E]5,200	NA	5,675	NA	NA	NA	[E]14,175	NA
August	[E]3,300	NA	[E]5,200	NA	5,628	NA	NA	NA	[E]14,128	NA
1999 YTD	**[E]28,018**	NA	**[E]42,065**	NA	**43,030**	NA	NA	NA	**[E]113,249**	NA
1998 YTD	**27,500**	**2.28**	**34,672**	**2.09**	**43,250**	**3.01**	**1**	**5.88**	**105,423**	**2.52**
1997 YTD	**37,990**	**2.41**	**22,598**	**2.32**	**41,423**	**3.95**	**0**	—	**102,011**	**3.01**

[R] Revised Data.
[E] Estimated Data.
NA Not Available.
— Not Applicable.

Sources: 1993-1994: Energy Information Administration, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." January 1995 through the current month (except estimates): Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports.* Estimated pipeline data (shown with an "E") are taken from data from the National Energy Board of Canada plus EIA estimates. LNG data: Industry reports.

Table 7. Marketed Production of Natural Gas, by State, 1993-1999

(Million Cubic Feet)

Year and Month	Alabama[b]	Alaska	Arizona	California	Colorado	Florida	Kansas
1993 Total	**388,024**	**430,350**	**597**	**315,851**	**400,985**	**7,085**	**686,347**
1994 Total	**515,272**	**555,402**	**752**	**309,427**	**453,207**	**7,486**	**712,730**
1995 Total	**519,661**	**469,550**	**558**	**279,555**	**523,084**	**6,463**	**721,436**
1996 Total	**530,841**	**480,828**	**463**	**286,494**	**572,071**	**6,006**	**712,796**
1997							
January	48,213	43,497	46	24,430	52,755	527	60,198
February	46,024	39,391	41	21,876	48,424	512	55,275
March	51,313	42,625	42	23,910	53,954	610	60,099
April	51,246	38,687	39	23,248	52,529	554	58,357
May	48,802	35,427	36	23,590	52,376	541	61,661
June	47,342	36,344	28	22,928	50,715	450	59,996
July	46,370	36,284	31	23,981	52,964	514	58,234
August	46,314	36,270	30	23,841	54,041	505	61,937
September	48,911	37,041	30	23,760	52,742	519	49,658
October	50,634	40,095	34	24,437	54,260	452	53,815
November	49,734	39,631	57	24,792	55,549	439	54,152
December	48,368	43,020	39	24,896	57,064	491	53,834
Total	**583,272**	**468,311**	**452**	**285,690**	**637,375**	**6,114**	**687,215**
1998							
January	32,739	43,715	43	24,810	53,025	479	52,204
February	29,230	38,016	42	21,719	51,770	436	49,283
March	33,505	41,026	53	22,869	56,834	466	50,179
April	32,406	38,188	43	21,952	55,760	480	47,405
May	33,656	35,200	38	23,889	56,151	512	46,564
June	33,257	36,116	34	24,837	54,493	428	[E]48,050
July	33,696	36,501	42	27,152	56,370	504	[E]48,048
August	33,719	36,331	36	29,717	56,841	529	[E]48,172
September	30,466	36,142	32	29,096	55,501	445	41,968
October	33,344	41,335	31	29,858	58,862	470	48,568
November	31,876	41,517	33	29,462	51,627	533	46,402
December	32,976	43,600	33	28,879	60,780	515	46,677
Total	**390,870**	**467,688**	**457**	**314,240**	**668,014**	**5,796**	**[E]573,520**
1999							
January	32,035	43,848	31	29,268	[E]54,000	517	41,599
February	29,017	39,443	27	26,541	[E]46,518	448	43,103
March	31,827	42,685	36	30,361	[E]56,043	494	43,887
April	28,404	[E]38,010	38	29,808	[E]53,866	[R]459	[E]42,197
May	33,664	[E]32,925	41	30,944	[E]54,484	[RE]474	[E]43,176
June	32,304	[E]35,951	45	28,553	[E]52,655	[E]429	[E]41,669
1999 YTD	**187,251**	**[E]232,862**	**218**	**175,476**	**[E]317,567**	**[E]2,819**	**[E]255,632**
1998 YTD	**194,793**	**232,261**	**252**	**140,077**	**328,032**	**2,800**	**[E]293,685**
1997 YTD	**292,941**	**235,971**	**232**	**139,982**	**310,754**	**3,193**	**355,586**

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas, by State, 1993-1999

(Million Cubic Feet) — Continued

Year and Month	Louisiana[b]	Michigan	Mississippi	Montana	New Mexico	North Dakota	Oklahoma
1993 Total	**4,991,138**	**204,635**	**80,695**	**54,528**	**1,409,429**	**59,851**	**2,049,942**
1994 Total	**5,169,705**	**222,657**	**63,448**	**50,416**	**1,557,689**	**57,805**	**1,934,864**
1995 Total	**5,108,366**	**238,203**	**95,533**	**50,264**	**1,625,837**	**49,468**	**1,811,734**
1996 Total	**5,240,747**	**245,740**	**103,263**	**50,996**	**1,554,087**	**49,674**	**1,734,887**
1997							
January	445,257	34,940	8,253	4,654	135,263	3,952	144,608
February	405,366	16,875	7,807	4,451	122,656	3,899	134,455
March	447,802	24,790	8,470	4,836	137,830	4,453	147,098
April	431,010	12,944	8,120	4,654	132,438	4,364	136,246
May	443,269	39,819	8,611	4,561	136,553	4,539	142,336
June	425,934	19,314	8,893	3,808	125,256	4,348	138,038
July	434,326	40,026	8,636	4,114	131,806	4,427	144,769
August	438,965	18,597	9,626	4,213	134,140	4,486	147,528
September	430,599	22,451	9,162	4,199	128,915	4,381	150,488
October	445,702	20,297	10,084	3,150	134,623	4,508	145,054
November	434,908	26,013	9,683	4,706	120,856	4,416	135,537
December	446,682	29,885	9,955	5,091	118,298	4,629	137,731
Total	**5,229,821**	**305,950**	**107,300**	**52,437**	**1,558,633**	**52,401**	**1,703,888**
1998							
January	467,734	28,439	9,639	[E]5,058	142,312	4,623	159,422
February	418,165	28,259	8,574	[E]4,668	142,383	4,020	125,953
March	470,930	30,719	9,781	[E]5,018	141,671	4,337	136,396
April	456,246	17,983	8,957	[E]4,714	140,963	4,284	134,017
May	473,557	29,164	9,121	[E]4,672	140,258	4,488	136,703
June	458,372	26,962	8,586	[E]3,805	139,557	4,210	136,013
July	461,063	26,188	9,258	[E]3,990	138,859	4,384	134,510
August	464,025	19,037	8,835	[E]4,242	138,165	4,499	139,914
September	438,628	28,469	8,664	[E]4,332	137,474	4,427	142,267
October	462,358	21,908	8,868	[E]4,346	136,786	4,600	140,146
November	[E]440,854	12,272	8,602	[E]4,934	136,102	4,428	[E]133,360
December	[E]461,135	29,159	9,184	[E]5,280	135,422	4,536	[E]136,123
Total	**[E]5,473,067**	**298,560**	**108,069**	**[E]55,059**	**1,669,951**	**52,834**	**[E]1,654,824**
1999							
January	[E]466,143	20,853	9,154	[E]5,090	134,745	4,331	[E]144,408
February	425,121	8,746	8,678	[E]4,796	134,071	3,858	[E]122,928
March	463,776	39,892	9,933	[E]5,112	134,084	4,220	[E]133,354
April	450,953	22,653	9,426	[E]4,821	134,098	4,298	[E]131,587
May	474,329	25,273	9,708	[E]4,834	[E]137,332	4,335	[E]139,036
June	[E]464,118	25,120	9,480	[E]3,944	[E]130,997	4,329	[E]133,557
1999 YTD	**[E]2,744,440**	**142,538**	**56,378**	**[E]28,597**	**[E]805,326**	**25,370**	**[E]804,870**
1998 YTD	**2,745,004**	**161,527**	**54,659**	**[E]27,935**	**847,143**	**25,961**	**828,504**
1997 YTD	**2,598,638**	**148,681**	**50,154**	**26,965**	**789,996**	**25,555**	**842,780**

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas, by State, 1993-1999

(Million Cubic Feet) — Continued

Year and Month	Oregon	Texas[c]	Utah	Wyoming	Other[a] States	U.S. Total
1993 Total	**4,003**	**6,249,624**	**225,401**	**634,957**	**788,472**	**18,981,915**
1994 Total	**3,221**	**6,353,844**	**270,858**	**696,018**	**774,724**	**19,709,525**
1995 Total	**1,923**	**6,330,048**	**241,290**	**673,775**	**759,728**	**19,506,474**
1996 Total	**1,439**	**6,449,022**	**250,767**	**666,036**	**814,612**	**19,750,793**
1997						
January	105	554,934	21,782	59,016	66,837	1,709,269
February	98	506,768	19,115	55,848	59,897	1,548,774
March	101	564,269	21,912	61,159	64,286	1,719,559
April	102	539,499	19,570	64,278	61,118	1,639,002
May	102	552,230	22,053	62,726	62,301	1,701,532
June	97	529,765	19,815	59,667	59,069	1,611,809
July	98	546,610	21,711	60,324	58,493	1,673,719
August	99	548,267	21,024	61,091	59,686	1,670,660
September	86	525,836	22,007	64,678	56,803	1,632,265
October	97	540,150	23,006	64,992	62,912	1,678,302
November	91	519,274	22,840	62,181	60,863	1,625,720
December	96	526,271	22,307	62,410	64,414	1,655,481
Total	**1,173**	**6,453,873**	**257,139**	**738,368**	**736,679**	**19,866,093**
1998						
January	90	542,462	21,826	66,074	[E]61,837	[E]1,716,531
February	79	491,530	21,758	53,970	[E]57,200	[E]1,547,056
March	96	541,311	23,656	65,704	[E]61,188	[E]1,695,739
April	92	525,602	23,513	61,974	[E]57,188	[E]1,631,767
May	92	550,442	24,967	54,304	[E]58,146	[E]1,681,924
June	90	517,200	23,968	63,574	[E]56,699	[E]1,636,249
July	95	531,212	23,036	64,917	[E]55,998	[E]1,655,822
August	94	546,100	23,681	66,273	[E]57,217	[E]1,677,426
September	90	529,321	21,554	63,370	[E]55,348	[E]1,627,593
October	83	534,431	23,830	62,709	[E]59,433	[E]1,671,967
November	85	520,580	23,045	66,979	[E]59,256	[E]1,611,948
December	80	525,805	22,507	64,357	[E]62,674	[E]1,669,720
Total	**1,067**	**6,355,996**	**277,340**	**754,206**	**[E]702,185**	**[E]19,823,742**
1999						
January	83	528,793	23,467	[R]62,582	[E]60,748	[RE]1,661,695
February	84	483,571	21,141	[R]55,832	[E]56,306	[RE]1,510,229
March	120	527,106	23,878	[R]67,624	[E]60,561	[RE]1,674,993
April	111	507,927	22,076	[R]61,885	[E]56,293	[RE]1,598,909
May	113	526,518	[E]24,177	[R]64,838	[E]57,153	[RE]1,663,352
June	111	501,865	[E]22,958	63,028	[E]55,148	[E]1,606,261
1999 YTD	**621**	**3,075,780**	**[E]137,697**	**375,788**	**[E]346,208**	**[E]9,715,439**
1998 YTD	**539**	**3,168,547**	**139,688**	**365,601**	**[E]352,258**	**[E]9,909,266**
1997 YTD	**606**	**3,247,466**	**124,245**	**362,693**	**373,508**	**9,929,946**

[a] Includes Arkansas, Illinois, Indiana, Kentucky, Maryland, Missouri, Nebraska, Nevada, New York, Ohio, Pennsylvania, South Dakota, Tennessee, Virginia and West Virginia. The 1998 monthly values for these States are estimated.

[b] All data for 1991 through 1996 include Federal Offshore production. For 1997 and 1998, data for Alabama exclude Federal Offshore production and data for Louisiana include both the Louisana and Alabama portions of Federal Offshore production.

[c] Federal offshore production volumes are included.

[R] Revised Data.

[E] Estimated Data.

[RE] Revised Estimated Data.

Notes: Data for 1993 through 1997 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: 1992-1997: Energy Information Administration (EIA), *Natural Gas Annual 1997*.1998 through current month: Form EIA-895, "Monthly Quantity of Natural Gas Report," Minerals Management Service reports, and EIA computations.

Table 8

Table 8. Gross Withdrawals and Marketed Production of Natural Gas by State, June 1999

(Million Cubic Feet)

State	Gross Withdrawals			Repressuring	Nonhydrocarbon Gases Removed[a]	Vented and Flared	Marketed Production
	From Gas Wells	From Oil Wells	Total				
Alabama	34,824	571	35,395	1,031	1,961	99	32,304
Alaska	[E]14,096	[E]242,527	[E]256,623	[E]220,192	0	[E]481	[E]35,951
Arizona	44	0	45	0	0	0	45
California	6,770	26,274	33,043	4,261	155	75	28,553
Colorado	[E]45,879	[E]7,348	[E]53,226	[E]483	0	[E]88	[E]52,655
Florida	0	[E]484	[E]484	0	[E]56	0	[E]429
Kansas	[E]38,439	[E]3,343	[E]41,782	[E]71	0	[E]42	[E]41,669
Louisiana	[E]408,421	[E]61,397	[E]469,818	[E]3,685	0	[E]2,015	[E]464,118
Michigan	20,445	5,111	25,556	180	0	256	25,120
Mississippi	10,278	473	10,751	507	532	233	9,480
Montana	[E]3,490	[E]611	[E]4,101	[E]5	0	[E]152	[E]3,944
New Mexico	[E]123,652	[E]21,434	[E]145,086	[E]883	[E]12,971	[E]235	[E]130,997
North Dakota	1,243	3,300	4,543	0	8	206	4,329
Oklahoma	[E]120,488	[E]13,069	[E]133,557	0	0	0	[E]133,557
Oregon	134	0	134	4	19	0	111
Texas	444,984	107,673	552,657	35,765	12,702	2,325	501,865
Utah	[E]20,948	[E]3,321	[E]24,269	[E]43	0	[E]1,268	[E]22,958
Wyoming	97,201	5,062	102,263	12,390	13,414	13,431	63,028
Other States	[E]52,147	[E]3,777	[E]55,924	[E]156	[E]485	[E]135	[E]55,148
Total	**[E]1,443,482**	**[E]505,776**	**[E]1,949,258**	**[E]279,655**	**[E]42,301**	**[E]21,041**	**[E]1,606,261**

[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.

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

Table 9. Underground Natural Gas Storage - All Operators, 1993-1999

(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 Withdrawals[c]
1993 Total[a]	**4,327**	**2,322**	**6,649**	**-275**	**-10.6**	**2,760**	**2,717**	**-43**
1994 Total[a]	**4,360**	**2,606**	**6,966**	**284**	**12.2**	**2,796**	**2,508**	**-288**
1995 Total[a]	**4,349**	**2,153**	**6,503**	**-453**	**3.1**	**2,566**	**2,974**	**408**
1996 Total[a]	**4,341**	**2,173**	**6,513**	**19**	**0.9**	**2,906**	**2,911**	**6**
1997								
January	4,347	1,496	5,843	32	2.3	68	753	684
February	4,342	1,139	5,481	118	11.6	55	413	358
March	4,345	990	5,336	232	30.7	131	285	155
April	4,342	1,051	5,393	196	23.1	205	146	-59
May	4,340	1,365	5,704	202	17.5	362	41	-321
June	4,357	1,731	6,088	202	13.2	407	42	-365
July	4,356	2,017	6,372	119	6.3	361	78	-282
August	4,357	2,338	6,695	93	4.2	378	56	-322
September	4,360	2,672	7,033	67	2.6	380	44	-336
October	4,358	2,886	7,244	75	2.7	294	84	-210
November	4,359	2,699	7,058	150	5.9	113	302	189
December	4,350	2,175	6,525	2	0.1	45	579	533
Total	—	—	—	—	—	**2,800**	**2,824**	**24**
1998								
January	4,347	1,713	6,060	218	14.5	68	535	466
February	4,341	1,419	5,760	280	24.6	74	373	300
March	4,342	1,185	5,527	194	19.6	136	378	242
April	4,339	1,382	5,721	331	31.5	277	78	-199
May	4,340	1,775	6,115	410	30.0	435	42	-393
June	4,346	2,103	6,448	372	21.5	375	52	-323
July	4,340	2,417	6,757	401	19.9	366	52	-314
August	4,336	2,697	7,033	359	15.4	342	58	-283
September	4,340	2,949	7,289	277	10.4	305	78	-227
October	4,342	3,176	7,517	290	10.0	301	46	-255
November	4,340	3,143	7,483	444	16.5	131	165	34
December	4,326	2,718	7,044	543	25.0	94	530	435
Total	—	—	—	—	—	**2,905**	**2,386**	**-518**
1999								
January	4,327	2,094	6,421	381	22.2	55	678	623
February	4,312	1,792	6,104	372	26.2	62	395	333
March	[d]4,361	[d]1,430	5,792	246	20.7	84	381	297
April	4,355	1,514	5,869	131	9.5	203	112	-91
May	4,346	1,847	6,192	72	4.0	380	43	-337
June	4,344	2,157	6,501	54	2.6	345	40	-306
July	4,350	2,390	6,740	-27	-1.1	303	78	-225
August	4,342	2,632	6,974	-66	-2.4	309	70	-238
September(STIFS)	[RE]4,342	[RE]2,951	[RE]7,293	[RE]2	[RE]0.1	NA	NA	[RE]-319
October(STIFS)	[E]4,342	[E]3,101	[E]7,443	[E]-75	[E]-2.4	NA	NA	[E]-150

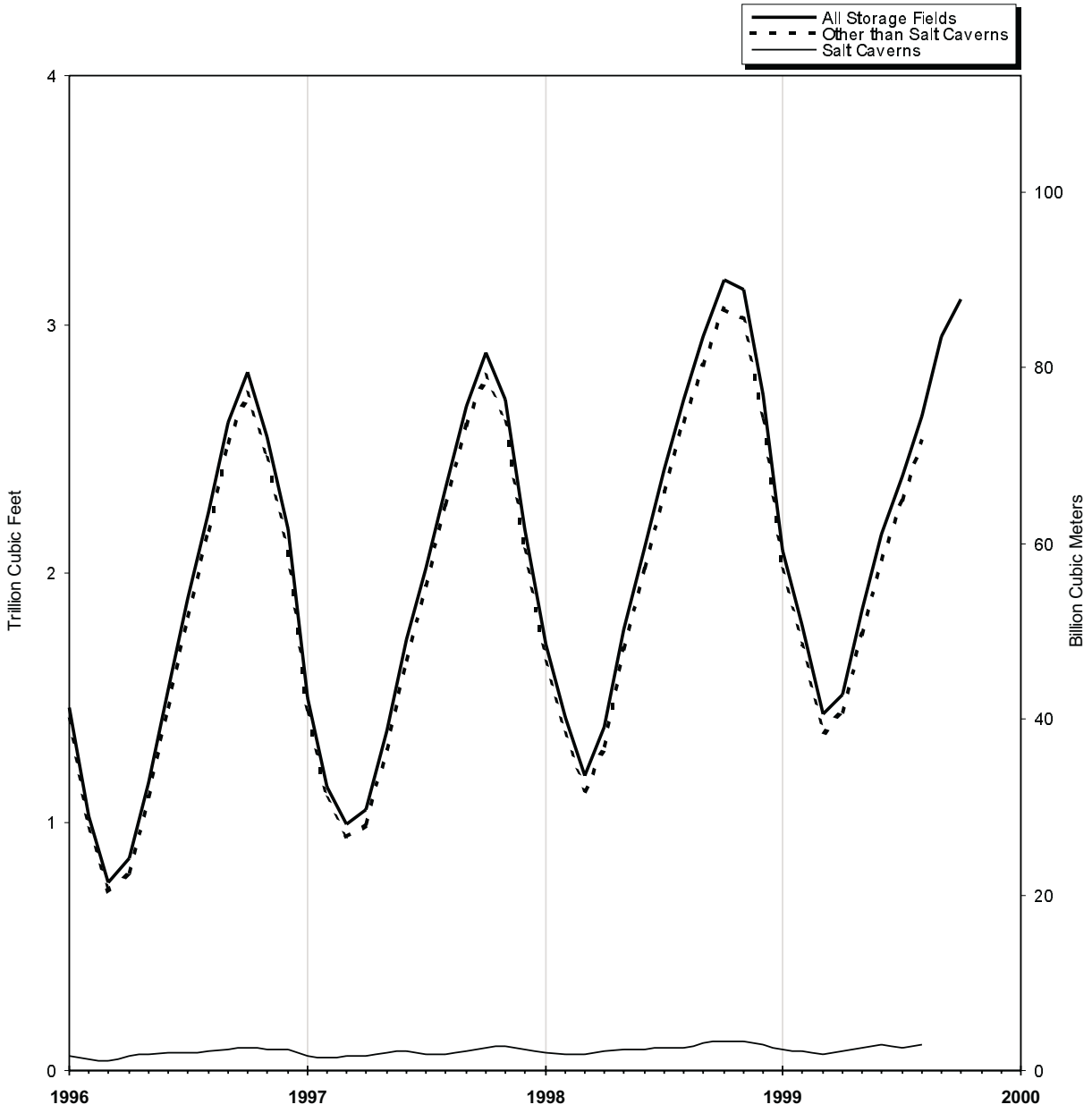
[a] Total as of December 31.
[b] Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1991 - 7,993; 1992 - 7,932; 1993 - 7,989; 1994 - 8,043; 1995 - 7,927; 1996 - 8,159; 1997 - 8,128; and 1998 - 8,179.
[c] Negative numbers indicate the volume of injections in excess of withdrawals. Positive numbers indicate the volume of withdrawals in excess of injections.
[d] Reflects one respondent's reclassification of natural gas in underground storage from working gas to base gas.
[E] Estimated Data.
[RE] Revised Estimated Data.
NA Not Available.
— Not Applicable.

Notes: Data for 1993 through 1997 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 (STIFS). 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. 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, "Monthly Underground Gas Storage Report, "Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and STIFS.

Figure 5

Figure 5. Working Gas in Underground Natural Gas Storage in the U.S., 1996-1999



Sources: Energy Information Administration, Form EIA-191, "Monthly Underground Gas Storage Report," and Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Table 10. Underground Natural Gas Storage - by Season, 1996-1999

(Volumes in Billion Cubic Feet)

Year, Season 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	Volume	Percent	Injections	Withdrawals	Net Withdrawals[a]
October 1996	4,335	2,810	7,145	--	--	--	--	--
1996-1997 Heating Season								
November	4,339	2,549	6,889	-179	-6.6	90	354	264
December	4,341	2,173	6,513	19	0.9	86	461	374
January	4,347	1,496	5,843	32	2.3	68	753	684
February	4,342	1,139	5,481	118	11.6	55	413	358
March	4,345	990	5,336	232	30.7	131	285	155
Total	—	—	—	—	—	**430**	**2,266**	**1,835**
1997 Refill Season								
April	4,342	1,051	5,393	196	23.1	205	146	-59
May	4,340	1,365	5,704	202	17.5	362	41	-321
June	4,357	1,731	6,088	202	13.2	407	42	-365
July	4,356	2,017	6,372	119	6.3	361	78	-282
August	4,357	2,338	6,695	93	4.2	378	56	-322
September	4,360	2,672	7,033	67	2.6	380	44	-336
October	4,358	2,886	7,244	75	2.7	294	84	-210
Total	—	—	—	—	—	**2,388**	**492**	**-1,896**
1997-1998 Heating Season								
November	4,359	2,699	7,058	150	5.9	113	302	189
December	4,350	2,175	6,525	2	0.1	45	579	533
January	4,347	1,713	6,060	218	14.5	68	535	466
February	4,341	1,419	5,760	280	24.6	74	373	300
March	4,342	1,185	5,527	194	19.6	136	378	242
Total	—	—	—	—	—	**436**	**2,167**	**1,730**
1998 Refill Season								
April	4,339	1,382	5,721	331	31.5	277	78	-199
May	4,340	1,775	6,115	410	30.0	435	42	-393
June	4,346	2,103	6,448	372	21.5	375	52	-323
July	4,340	2,417	6,757	401	19.9	366	52	-314
August	4,336	2,697	7,033	359	15.4	342	58	-283
September	4,340	2,949	7,289	277	10.4	305	78	-227
October	4,342	3,176	7,517	290	10.0	301	46	-255
Total	—	—	—	—	—	**2,402**	**407**	**-1,995**
1998-1999 Heating Season								
November	4,340	3,143	7,483	444	16.5	131	165	34
December	4,326	2,718	7,044	543	25.0	94	530	435
January	4,327	2,094	6,421	381	22.2	55	678	623
February	4,312	1,792	6,104	372	26.2	62	395	333
March	[b]4,361	[b]1,430	5,792	246	20.7	84	381	297
Total	—	—	—	—	—	**427**	**2,148**	**1,721**
1999 Refill Season								
April	4,355	1,514	5,869	131	9.5	203	112	-91
May	4,346	1,847	6,192	72	4.0	380	43	-337
June	4,344	2,157	6,501	54	2.6	345	40	-306
July	4,350	2,390	6,740	-27	-1.1	303	78	-225
August	4,342	2,632	6,974	-66	-2.4	309	70	-238
September(STIFS)	[RE]4,342	[RE]2,951	[RE]7,293	[RE]2	[RE]0.1	NA	NA	[RE]-319
October(STIFS)	[E]4,342	[E]3,101	[E]7,443	[E]-75	[E]-2.4	NA	NA	[E]-150
Total	—	—	—	—	—	NA	NA	**-1,666**

[a] Negative numbers indicate the volume of injections in excess of withdrawals. Positive numbers indicate the volume of withdrawals in excess of injections.

[b] Reflects one respondent's reclassification of natural gas in underground storage from working gas to base gas.

[E] Estimated Data.

[RE] Revised Estimated Data.

NA Not Available.

— Not Applicable.

Notes: Data for 1996 and 1997 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 (STIFS). 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, "Underground Natural Gas Storage Report," Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and STIFS.

Table 11

Table 11. Underground Natural Gas Storage - Salt Cavern Storage Fields, 1994 - 1999

(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Salt Cavern 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	Net Withdrawals
1994 Total[c]	**44**	**70**	**113**	—	—	**142**	**123**	**-19**
1995 Total[c]	**60**	**72**	**131**	**2**	**2.9**	**194**	**200**	**5**
1996 Total[c]	**64**	**85**	**149**	**14**	**18.8**	**258**	**246**	**-13**
1997								
January	65	57	122	-2	-3.1	21	51	30
February	59	49	109	2	4.0	15	23	8
March	65	56	121	18	47.3	22	16	-6
April	65	58	123	1	1.8	22	19	-2
May	65	73	138	10	17.3	27	13	-14
June	66	80	145	8	11.7	22	16	-7
July	65	66	131	-6	-7.5	15	30	15
August	65	67	132	-11	-12.4	23	22	0
September	65	78	143	-9	-8.7	27	14	-12
October	66	93	159	4	5.6	30	14	-16
November	67	95	162	7	9.4	25	24	-2
December	67	83	150	-4	-3.0	19	31	12
Total	—	—	—	—	—	**267**	**274**	**6**
1998								
January	66	70	136	13	23.0	17	31	14
February	65	68	133	18	36.4	17	21	3
March	68	64	132	8	14.6	23	29	6
April	68	80	148	22	38.1	29	11	-17
May	68	83	151	10	13.0	26	22	-3
June	66	83	149	3	4.3	21	23	2
July	66	92	158	26	39.6	26	18	-8
August	66	93	159	27	40.0	24	21	-3
September	67	112	180	35	44.9	22	30	8
October	67	116	183	23	24.4	44	12	-32
November	67	119	187	24	25.5	22	17	-5
December	67	104	171	22	26.4	17	32	14
Total	—	—	—	—	—	**288**	**267**	**-21**
1999								
January	69	84	153	14	19.6	19	41	22
February	67	77	144	10	14.3	15	20	5
March	67	68	135	4	6.0	18	26	8
April	67	77	144	-3	-3.8	27	18	-9
May	67	94	161	11	13.4	29	12	-17
June	65	102	167	19	22.6	21	15	-6
July	65	94	160	3	3.0	16	24	8
August	66	102	168	9	9.6	22	14	-8

[c] Total as of December 31.
— Not Applicable.

Notes: Data for 1994 through 1997 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 of the *Natural Gas Monthly* for discussion of the reporting of underground storage information. 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. Positive net withdrawals indicate the volume of withdrawals in excess of injections. Negative net withrawals indicate the volume of injections in excess of withdrawals.

Sources: Form EIA-191, "Monthly Underground Gas Storage Report," and Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Table 12. Underground Natural Gas Storage - Storage Fields Other than Salt Caverns, 1994-1999

(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Non-Salt Cavern 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	Net Withdrawals
1994 Total[c]	**4,317**	**2,536**	**6,853**	—	—	**2,654**	**2,385**	**-269**
1995 Total[c]	**4,290**	**2,082**	**6,371**	**-455**	**-17.9**	**2,372**	**2,774**	**403**
1996 Total[c]	**4,277**	**2,087**	**6,364**	**6**	**0.3**	**2,647**	**2,665**	**18**
1997								
January	4,282	1,439	5,721	34	2.5	47	702	654
February	4,283	1,090	5,372	116	12.0	40	390	350
March	4,280	935	5,215	214	29.8	109	269	160
April	4,277	993	5,270	195	24.6	184	127	-56
May	4,275	1,292	5,566	191	17.6	335	28	-307
June	4,291	1,651	5,942	194	13.3	385	26	-358
July	4,290	1,951	6,241	124	6.8	346	49	-297
August	4,291	2,271	6,563	103	4.7	356	34	-322
September	4,295	2,595	6,890	75	3.0	353	29	-324
October	4,292	2,793	7,085	70	2.6	265	70	-195
November	4,292	2,604	6,896	142	5.8	88	278	191
December	4,283	2,092	6,375	4	0.2	27	548	521
Total	—	—	—	—	—	**2,533**	**2,551**	**18**
1998								
January	4,281	1,643	5,923	204	14.2	51	504	453
February	4,275	1,352	5,627	262	24.0	56	353	296
March	4,274	1,121	5,394	186	19.9	113	349	236
April	4,271	1,302	5,573	309	31.1	248	67	-181
May	4,272	1,692	5,964	400	31.0	410	20	-390
June	4,279	2,020	6,299	368	22.3	354	29	-325
July	4,274	2,326	6,600	375	19.2	340	34	-306
August	4,270	2,604	6,875	333	14.7	318	37	-281
September	4,273	2,837	7,109	242	9.3	284	48	-236
October	4,274	3,060	7,334	267	9.6	257	34	-223
November	4,272	3,024	7,296	420	16.1	108	147	39
December	4,259	2,614	6,873	522	24.9	77	498	421
Total	—	—	—	—	—	**2,617**	**2,120**	**-497**
1999								
January	4,257	2,010	6,268	367	22.4	37	638	601
February	4,245	1,714	5,960	363	26.8	47	375	328
March	4,294	1,363	5,657	242	21.6	67	355	289
April	4,288	1,437	5,725	134	10.3	175	94	-81
May	4,279	1,753	6,031	61	3.6	351	31	-320
June	4,279	2,055	6,333	35	1.7	324	24	-300
July	4,285	2,296	6,581	-30	-1.3	287	54	-233
August	4,276	2,530	6,806	-75	-2.9	287	56	-231

[c] Total as of December 31.
— Not Applicable.

Notes: Data for 1994 through 1997 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 of the *Natural Gas Monthly* for discussion of the reporting of underground storage information. 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. Positive net withdrawals indicate the volume of withdrawals in excess of injections. Negative net withdrawals indicate the volume of injections in excess of withdrawals.

Sources: Form EIA-191, "Monthly Underground Gas Storage Report," and Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Table 13

Table 13. Net Withdrawals from Underground Storage, by State, 1997-1999

(Volumes in Million Cubic Feet)

State	1999					
	August	July	June	May	April	March
Alabama	-81	-235	-210	-471	-137	312
Arkansas	-901	-1,116	-1,086	-1,045	-667	690
California	2,919	-11,199	-20,737	-27,111	-911	9,782
Colorado	-5,436	-6,692	-5,526	-307	8,881	3,319
Illinois	-30,924	-23,880	-24,188	-27,851	7,599	27,580
Indiana	-2,797	-1,681	-1,625	-758	921	3,622
Iowa	-12,914	-10,783	-6,837	-4,596	86	5,170
Kansas	-9,796	-3,006	-17,080	-12,144	5,085	13,977
Kentucky	-1,241	-3,773	-10,131	-8,328	-2,297	6,081
Louisiana	-3,569	-3,546	-19,988	-22,324	-16,632	10,263
Maryland	-1,954	1,324	93	-2,551	-667	1,208
Michigan	-50,880	-51,556	-51,441	-49,536	-23,148	53,123
Minnesota	-250	-308	-172	0	214	167
Mississippi	-1,088	852	-3,642	-5,105	-2,240	6,840
Missouri	-64	6	6	-697	-27	150
Montana	-2,542	-1,794	-1,784	-568	1,329	2,410
Nebraska	-1,004	478	-697	-701	1,168	1,338
New Mexico	-841	-172	-443	-1,371	1,025	943
New York	-6,853	-5,915	-6,909	-9,935	-5,300	10,688
Ohio	-27,587	-27,798	-27,954	-33,732	-5,317	33,698
Oklahoma	-1,222	-748	-9,556	-14,068	-8,791	8,079
Oregon	-1,313	-2,114	-2,013	168	735	1,185
Pennsylvania	-37,841	-27,925	-36,090	-44,102	-24,525	44,023
Tennessee	-104	-76	-107	-143	3	80
Texas	-7,923	-6,519	-21,602	-30,819	-15,510	14,152
Utah	-4,582	-7,489	-5,915	-3,772	1,667	5,738
Virginia	-207	-209	-211	-273	-184	325
Washington	-2,951	-3,595	-1,765	-786	1,852	1,113
West Virginia	-22,999	-23,517	-26,426	-32,000	-13,958	30,271
Wyoming	-1,371	-2,294	-1,661	-2,132	-990	352
AGA Regions						
Producing	-25,340	-14,255	-73,397	-86,875	-37,730	54,944
Eastern Consuming	-197,450	-175,542	-192,727	-215,674	-65,782	217,668
Western Consuming	-15,526	-35,485	-39,575	-34,509	12,778	24,066
Total	**-238,316**	**-225,282**	**-305,699**	**-337,059**	**-90,735**	**296,678**

See footnotes at end of table.

Table 13. Net Withdrawals from Underground Storage, by State, 1997-1999

(Volumes in Million Cubic Feet) — Continued

State	1999		1998				
	February	January	Total	December	November	October	September
Alabama	114	813	-447	139	-1	-613	401
Arkansas	1,049	2,066	-1,774	1,245	63	-580	-817
California	18,491	23,789	-44,006	29,749	-10,022	-23,926	-9,990
Colorado	3,684	3,990	-4,885	7,416	-1,764	-2,043	-5,919
Illinois	41,907	56,407	-11,545	26,858	9,641	-27,923	-28,122
Indiana	2,942	5,558	1,424	4,038	-618	-2,904	-4,534
Iowa	11,814	20,553	-3,131	20,547	-68	-7,108	-12,149
Kansas	9,273	22,470	-20,440	14,055	3,658	-8,737	-9,284
Kentucky	7,825	12,241	-12,142	10,397	1,776	-5,237	-8,821
Louisiana	15,966	43,591	-70,560	38,892	1,326	-30,831	-9,708
Maryland	1,982	3,399	237	2,068	124	-1,267	-783
Michigan	57,189	112,276	-77,044	60,725	18,548	-27,089	-31,023
Minnesota	238	287	442	438	-84	-187	-275
Mississippi	3,303	9,981	-8,781	5,256	701	-9,800	156
Missouri	343	170	174	573	-204	-208	-414
Montana	3,375	4,860	-401	3,962	2,606	-1,532	-4,239
Nebraska	442	698	298	1,215	536	-363	-864
New Mexico	83	1,364	-6,247	-619	-1,243	-1,903	-1,185
New York	10,057	15,534	-10,575	6,448	1,054	-4,464	-5,640
Ohio	33,362	53,448	-26,542	35,311	7,921	-12,746	-19,259
Oklahoma	-881	31,284	-34,004	40,863	-473	-19,520	-12,146
Oregon	1,717	1,979	829	1,888	28	4	-818
Pennsylvania	50,445	83,851	-30,915	46,400	30	-20,091	-27,252
Tennessee	131	130	-60	131	0	-103	-102
Texas	9,654	43,297	-108,737	36,143	-3,908	-34,137	-5,040
Utah	6,185	10,569	-16,395	8,751	2,231	-3,879	-8,260
Virginia	449	317	-709	359	0	-229	-272
Washington	3,144	603	-509	3,226	-730	719	-1,822
West Virginia	36,278	53,983	-28,894	26,188	3,337	-7,094	-16,425
Wyoming	2,050	3,464	-2,837	2,621	-614	-1,425	-2,602
AGA Regions							
Producing	38,447	154,055	-250,543	135,835	124	-105,507	-38,023
Eastern Consuming	255,282	419,379	-199,871	241,397	42,077	-117,437	-155,259
Western Consuming	38,885	49,540	-67,763	58,052	-8,349	-32,268	-33,925
Total	**332,615**	**622,974**	**-518,177**	**435,284**	**33,852**	**-255,212**	**-227,207**

See footnotes at end of table.

Table 13

Table 13. Net Withdrawals from Underground Storage, by State, 1997-1999

(Volumes in Million Cubic Feet) — Continued

State	1998						
	August	July	June	May	April	March	February
Alabama	-200	9	-623	-144	-245	248	187
Arkansas	-1,005	-1,034	-1,100	-1,046	-471	1,039	875
California	-7,283	-9,435	-27,493	-29,210	-10,710	-2,257	26,766
Colorado	-5,877	-4,060	-3,907	-6,040	3,534	3,928	6,337
Illinois	-31,634	-25,062	-31,348	-25,967	-293	28,186	36,082
Indiana	-3,695	-2,476	-575	-446	917	4,249	3,322
Iowa	-12,102	-11,525	-8,405	-3,600	348	6,692	5,335
Kansas	-12,200	-13,108	-6,267	-19,324	-6,954	14,438	8,180
Kentucky	-4,533	-10,622	-8,137	-11,793	-2,480	7,768	9,981
Louisiana	-20,159	-25,597	-14,635	-22,794	-21,191	7,400	5,164
Maryland	-1,407	-2,924	-1,251	-808	-1,127	1,631	2,745
Michigan	-52,128	-60,857	-69,589	-69,296	-31,779	55,388	45,886
Minnesota	-214	-289	-169	0	159	416	203
Mississippi	-4,139	-5,961	-2,887	-3,438	-2,757	2,405	4,251
Missouri	-203	8	143	-460	48	423	10
Montana	-4,524	-2,295	-2,024	-2,571	224	3,017	2,554
Nebraska	-616	-796	-528	-860	754	1,090	355
New Mexico	-208	-191	-180	-1,120	287	658	-130
New York	-5,247	-8,108	-8,786	-11,267	-3,673	7,977	9,548
Ohio	-27,246	-31,220	-25,882	-35,968	-14,906	28,619	34,023
Oklahoma	-7,189	-7,554	-12,460	-23,277	-21,343	7,159	737
Oregon	-819	-852	-1,411	0	81	934	1,253
Pennsylvania	-19,657	-31,998	-34,236	-57,800	-32,842	38,957	49,786
Tennessee	-112	-134	0	0	0	83	60
Texas	-18,629	-18,872	-20,145	-27,286	-40,395	-9,062	-3,341
Utah	-7,385	-7,265	-8,225	-7,364	-596	1,199	6,783
Virginia	-341	-190	-309	-313	-209	312	437
Washington	-3,640	-312	-2,963	-3,932	1,544	3,329	4,131
West Virginia	-29,075	-28,560	-26,404	-26,003	-14,607	22,818	36,285
Wyoming	-2,008	-2,807	-3,406	-1,344	89	2,611	2,059
AGA Regions							
Producing	-63,530	-72,318	-57,675	-98,285	-92,824	24,038	15,735
Eastern Consuming	-188,197	-214,455	-215,931	-244,724	-100,092	204,441	234,042
Western Consuming	-31,751	-27,316	-49,599	-50,461	-5,674	13,177	50,086
Total	**-283,478**	**-314,088**	**-323,205**	**-393,470**	**-198,591**	**241,655**	**299,863**

See footnotes at end of table.

Table 13. Net Withdrawals from Underground Storage, by State, 1997-1999

(Volumes in Million Cubic Feet) — Continued

State	1998	1997					
	January	Total	December	November	October	September	August
Alabama	396	-162	243	243	-251	-262	-286
Arkansas	1,057	250	1,526	651	271	-1,048	-1,234
California	29,805	16,340	58,418	2,846	-11,717	-6,637	-7,805
Colorado	3,510	-525	5,026	2,503	359	-5,203	-4,559
Illinois	58,036	-10,153	44,906	2,805	-28,399	-35,655	-35,387
Indiana	4,144	984	4,193	-879	-3,088	-4,559	-3,722
Iowa	18,905	-6,255	17,041	505	-8,412	-12,825	-11,001
Kansas	15,103	-11,372	12,277	8,384	-7,782	-13,351	-11,129
Kentucky	9,559	3,013	10,773	4,035	-2,926	-7,983	-6,520
Louisiana	21,574	-9,248	43,644	20,997	-24,035	-29,291	-15,446
Maryland	3,236	-544	1,298	33	-2,346	-2,838	-2,353
Michigan	84,170	-3,388	78,027	53,016	-32,466	-65,209	-73,230
Minnesota	444	-373	4	4	0	-130	-142
Mississippi	7,431	3,763	8,484	1,089	-2,126	-5,224	-3,109
Missouri	458	-453	228	-207	-215	-240	-379
Montana	4,421	11,962	3,169	2,760	1,015	-1,490	-2,339
Nebraska	376	-1,590	944	124	-69	-1,099	-971
New Mexico	-412	2,065	2,500	25	-1,305	-853	-328
New York	11,582	304	10,735	4,857	-2,211	-6,455	-11,606
Ohio	34,810	-7,336	40,530	15,502	-8,809	-23,499	-32,174
Oklahoma	21,199	-9,482	25,362	13,995	-19,663	-14,556	-8,393
Oregon	540	-1,316	1,036	-262	-97	-410	-1,178
Pennsylvania	57,788	28,381	53,825	26,061	-15,914	-48,745	-44,878
Tennessee	116	0	0	0	0	0	0
Texas	35,935	10,035	53,619	18,531	-30,600	-21,731	-12,881
Utah	7,613	-7,571	13,169	2,721	-1,301	-3,235	-5,284
Virginia	46	0	0	0	0	0	0
Washington	-58	-1,003	3,159	83	702	-2,268	982
West Virginia	30,647	16,716	36,318	6,615	-8,145	-19,091	-24,119
Wyoming	3,990	908	3,019	1,906	-591	-2,454	-2,727
AGA Regions							
Producing	101,887	-13,990	147,412	63,672	-85,240	-86,054	-52,520
Eastern Consuming	314,267	19,518	299,061	112,710	-113,251	-228,461	-246,626
Western Consuming	50,266	18,423	87,001	12,560	-11,630	-21,826	-23,050
Total	**466,420**	**23,950**	**533,474**	**188,941**	**-210,121**	**-336,341**	**-322,196**

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 through 1997 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. The American Gas Association (AGA) publishes weekly estimates of working gas levels in underground storage by region. AGA defines the Producing Region as Texas, Oklahoma, Kansas, New Mexico, Louisiana, Arkansas, and Mississippi; the Eastern Consuming Region as all States east of the Mississippi River less Mississippi, plus Iowa, Nebraska and Missouri; the Western Consuming Region as all States west of the Mississippi River less the Producing Region and Iowa, Nebraska and Missouri.

Source: Form EIA-191, "Monthly Underground Gas Storage Report."

Table 14

Table 14. Activities of Underground Natural Gas Storage Operators, by State, August 1999

(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	3,280	1,190	1,509	2,699	-31	-2.0	202	121
Arkansas	24,191	7,460	8,505	15,964	1,064	14.3	906	5
California	388,370	246,825	172,828	419,653	17,343	11.2	8,520	11,440
Colorado	99,600	48,229	33,010	81,240	364	1.1	5,597	161
Illinois	898,565	651,346	196,335	847,681	-9,030	-4.4	31,707	783
Indiana	113,210	73,876	25,365	99,240	-167	-0.7	2,831	34
Iowa	273,200	200,300	49,086	249,386	2,644	5.7	14,067	1,153
Kansas	301,102	179,488	85,033	264,521	-8,161	-8.8	12,574	2,777
Kentucky	219,908	109,121	92,718	201,839	-3,447	-3.6	4,970	3,729
Louisiana	563,868	265,716	216,120	481,836	-1,874	-0.9	20,389	16,820
Maryland	62,000	46,677	10,006	56,683	-2,976	-22.9	2,724	770
Michigan	1,021,675	460,514	461,410	921,924	-79,082	-14.6	51,287	408
Minnesota	7,000	4,623	1,755	6,378	-68	-3.7	320	70
Mississippi	134,012	76,884	43,166	120,050	-4,022	-8.5	3,349	2,261
Missouri	31,274	21,600	9,384	30,984	364	4.0	70	6
Montana	371,510	167,356	41,203	208,559	-6,068	-12.8	3,391	849
Nebraska	39,469	31,507	1,498	33,005	-2,245	-60.0	1,059	55
New Mexico	96,600	27,835	8,405	36,240	152	1.8	2,093	1,252
New York	175,129	103,063	63,281	166,344	-1,202	-1.9	7,048	196
Ohio	575,234	350,918	157,200	508,118	-7,855	-4.8	28,080	493
Oklahoma	394,827	217,527	126,943	344,470	4,757	3.9	8,796	7,574
Oregon	11,623	6,834	6,813	13,647	554	8.8	1,313	0
Pennsylvania	684,842	353,978	304,666	658,645	-10,868	-3.4	41,925	4,084
Tennessee	1,200	340	645	985	178	38.1	104	0
Texas	684,226	251,319	283,157	534,476	31,204	12.4	22,182	14,259
Utah	121,980	64,601	36,419	101,020	5,915	19.4	5,045	462
Virginia	4,669	2,450	1,830	4,280	-64	-3.4	237	31
Washington	37,300	19,000	16,679	35,679	4,132	32.9	3,047	97
West Virginia	733,158	290,749	152,947	443,696	-1,695	-1.1	23,314	315
Wyoming	105,869	60,782	23,856	84,638	4,647	24.2	1,377	7
AGA Regions								
Producing	2,198,826	1,026,227	771,329	1,797,557	23,122	3.1	70,289	44,949
Eastern Consuming	4,836,812	2,697,629	1,527,881	4,225,510	-113,116	-6.9	209,626	12,176
Western Consuming	1,143,251	618,250	332,563	950,814	26,818	8.8	28,611	13,085
Total	**8,178,889**	**4,342,107**	**2,631,774**	**6,973,881**	**-65,537**	**-2.4**	**308,525**	**70,210**

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. The American Gas Association (AGA) publishes weekly estimates of working gas levels in underground storage by region. AGA defines the Producing Region as Texas, Oklahoma, Kansas, New Mexico, Louisiana, Arkansas, and Mississippi; the Eastern Consuming Region as all States east of the Mississippi River less Mississippi, plus Iowa, Nebraska and Missouri; the Western Consuming Region as all States west of the Mississippi River less the Producing Region and Iowa, Nebraska and Missouri.

Source: Form EIA-191, "Monthly Underground Gas Storage Report."

Table 15. Natural Gas Deliveries to Residential Consumers, by State, 1997-1999

(Million Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999		
				July	June	May
Alabama	30,941	35,925	32,640	1,300	1,402	1,934
Alaska	10,267	8,763	8,571	486	559	939
Arizona	23,140	26,253	21,237	1,056	1,341	2,068
Arkansas	26,904	28,093	28,836	998	R1,030	R1,641
California	395,180	371,062	303,849	25,726	32,958	40,603
Colorado	NA	NA	78,379	NA	4,748	9,718
Connecticut	26,542	24,638	27,356	945	1,128	1,879
Delaware	6,543	5,760	6,473	201	254	497
District of Columbia	NA	NA	10,653	NA	399	687
Florida	8,863	10,936	8,223	657	723	853
Georgia	NA	72,225	65,216	2,222	1,508	NA
Hawaii	320	339	312	45	43	44
Idaho	12,172	10,771	10,188	428	645	1,244
Illinois	284,845	255,090	319,966	9,967	11,122	15,866
Indiana	NA	NA	111,498	4,108	R5,060	NA
Iowa	48,696	46,141	53,866	1,825	1,597	3,082
Kansas	NA	60,343	45,749	1,771	2,469	4,031
Kentucky	38,477	35,876	41,180	1,170	1,335	1,800
Louisiana	31,751	34,082	35,132	1,799	1,984	2,391
Maine	604	566	638	22	31	45
Maryland	NA	45,839	51,066	NA	2,172	NA
Massachusetts	NA	NA	76,658	NA	NA	NA
Michigan	239,758	215,679	257,962	6,909	10,413	16,098
Minnesota	76,749	69,219	85,061	2,245	3,105	4,969
Mississippi	NA	NA	18,268	784	813	1,063
Missouri	81,908	80,320	87,816	2,550	3,081	5,307
Montana	12,628	NA	13,564	518	658	1,399
Nebraska	28,779	29,524	33,662	1,002	1,179	2,628
Nevada	19,398	20,158	16,823	945	1,240	1,853
New Hampshire	4,667	4,485	4,742	153	195	372
New Jersey	NA	126,371	146,210	NA	NA	NA
New Mexico	26,936	21,926	21,410	820	919	1,159
New York	NA	NA	255,102	10,116	NA	NA
North Carolina	38,587	37,546	35,547	1,120	1,318	2,608
North Dakota	7,312	6,905	8,022	232	266	627
Ohio	213,720	NA	235,424	6,622	7,970	12,575
Oklahoma	45,947	48,694	49,515	1,661	2,010	3,166
Oregon	25,943	NA	22,002	839	1,635	2,754
Pennsylvania	155,940	NA	173,848	5,112	6,519	10,770
Rhode Island	12,187	NA	12,614	531	557	949
South Carolina	18,151	19,144	17,077	492	571	1,196
South Dakota	8,088	7,814	9,099	274	324	629
Tennessee	NA	NA	41,930	1,067	1,424	NA
Texas	124,693	140,112	152,912	6,291	7,093	8,805
Utah	33,203	33,388	33,991	2,254	1,648	2,663
Vermont	1,837	1,680	1,843	56	77	159
Virginia	NA	43,075	48,240	1,517	1,597	NA
Washington	NA	NA	35,398	NA	NA	NA
West Virginia	NA	NA	22,807	532	NA	NA
Wisconsin	79,830	73,999	87,048	2,646	3,343	5,091
Wyoming	8,039	NA	8,301	310	497	1,095
Total	**3,177,698**	**3,043,359**	**3,273,921**	**129,627**	**R157,044**	**R235,714**

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Residential Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1999				1998	
	April	March	February	January	Total	December
Alabama	4,021	6,604	6,364	9,316	46,655	4,534
Alaska	1,315	2,075	2,223	2,668	15,617	2,183
Arizona	3,290	3,662	5,368	6,355	35,815	4,624
Arkansas	3,732	5,156	5,259	9,087	38,803	4,917
California	62,123	67,414	77,987	88,370	549,885	68,820
Colorado	10,768	13,675	15,399	22,196	NA	14,198
Connecticut	3,623	5,780	6,082	7,104	35,704	4,490
Delaware	989	1,574	1,469	1,560	7,810	901
District of Columbia	1,269	2,324	2,309	2,915	NA	1,541
Florida	1,236	1,676	1,555	2,163	R15,000	R1,145
Georgia	4,884	10,625	13,082	16,692	106,238	14,775
Hawaii	46	44	48	49	545	44
Idaho	1,875	2,257	2,633	3,090	15,975	2,434
Illinois	31,250	61,415	61,438	93,786	405,461	64,039
Indiana	NA	NA	NA	32,211	NA	NA
Iowa	5,545	9,863	10,656	16,128	68,912	10,511
Kansas	6,996	NA	NA	NA	84,208	10,495
Kentucky	4,103	9,239	8,779	12,050	55,894	9,366
Louisiana	3,837	5,570	5,999	10,171	NA	4,941
Maine	76	131	133	165	907	132
Maryland	6,125	NA	NA	14,660	NA	9,252
Massachusetts	NA	NA	17,828	12,564	NA	NA
Michigan	31,612	53,871	52,119	68,737	317,329	42,050
Minnesota	8,565	15,346	17,096	25,424	110,578	18,670
Mississippi	NA	3,709	R3,148	R5,702	NA	2,509
Missouri	9,667	16,580	18,523	26,201	110,375	13,831
Montana	1,917	2,138	2,519	3,479	NA	2,942
Nebraska	3,732	5,721	5,949	8,568	40,703	4,223
Nevada	2,718	3,349	4,332	4,962	30,023	4,335
New Hampshire	672	991	1,036	1,246	NA	739
New Jersey	NA	NA	NA	NA	NA	NA
New Mexico	2,866	6,478	4,896	9,799	35,614	7,289
New York	NA	NA	NA	NA	NA	NA
North Carolina	5,348	9,468	7,495	11,230	50,318	5,679
North Dakota	984	1,318	1,565	2,320	10,290	1,455
Ohio	26,857	51,339	49,194	59,162	NA	42,817
Oklahoma	6,241	8,415	9,465	14,989	65,403	7,678
Oregon	3,888	5,047	5,445	6,336	NA	5,504
Pennsylvania	20,516	34,931	34,404	43,687	NA	27,675
Rhode Island	1,702	2,704	2,662	3,083	NA	1,883
South Carolina	2,228	4,380	3,591	5,693	25,316	2,858
South Dakota	1,140	1,486	1,719	2,516	11,649	1,669
Tennessee	NA	7,577	8,917	15,186	NA	8,358
Texas	15,467	20,018	23,882	43,138	200,728	28,481
Utah	5,267	5,425	7,725	8,220	56,731	9,826
Vermont	284	377	387	496	2,454	289
Virginia	5,112	11,307	11,220	12,891	63,029	8,989
Washington	NA	NA	NA	NA	NA	NA
West Virginia	NA	NA	4,936	6,204	NA	3,895
Wisconsin	9,109	16,251	16,833	26,556	116,373	18,698
Wyoming	1,217	1,317	1,674	1,929	NA	1,578
Total	**414,762**	**656,556**	**R675,199**	**R908,796**	**R4,481,361**	**R613,200**

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Residential Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					
	November	October	September	August	July	June
Alabama	2,493	1,324	1,196	1,183	1,202	1,386
Alaska	1,858	1,346	818	648	479	628
Arizona	1,990	1,122	932	894	1,062	1,375
Arkansas	2,957	1,107	859	870	962	1,004
California	40,193	26,155	22,034	21,621	25,147	33,207
Colorado	8,454	4,185	2,690	2,480	NA	1,592
Connecticut	3,259	1,532	937	848	1,028	1,195
Delaware	575	232	177	165	197	252
District of Columbia	1,084	457	338	327	NA	435
Florida	935	718	626	639	707	817
Georgia	9,306	4,268	2,851	2,814	2,956	3,186
Hawaii	40	40	41	41	45	47
Idaho	1,507	656	316	292	402	666
Illinois	43,854	21,530	10,513	10,437	9,497	11,529
Indiana	13,244	6,355	R3,150	R2,742	NA	R3,658
Iowa	6,343	3,029	1,435	1,453	1,622	1,435
Kansas	6,968	2,780	1,771	1,851	2,090	2,512
Kentucky	6,142	2,239	1,167	1,104	1,321	1,360
Louisiana	2,678	NA	1,703	1,574	1,774	1,814
Maine	95	62	27	25	22	31
Maryland	6,554	NA	NA	1,854	1,828	2,087
Massachusetts	NA	4,257	NA	2,347	2,842	NA
Michigan	29,476	15,851	7,533	6,740	7,275	9,771
Minnesota	12,214	5,328	2,683	2,465	2,537	2,735
Mississippi	1,545	815	711	705	714	796
Missouri	8,075	3,345	2,619	2,185	2,670	3,128
Montana	2,079	1,272	484	488	481	673
Nebraska	3,404	1,632	885	1,036	1,014	1,199
Nevada	2,526	1,367	824	813	977	1,487
New Hampshire	597	294	159	NA	169	238
New Jersey	NA	8,124	NA	4,528	4,845	5,736
New Mexico	3,545	1,169	840	845	822	284
New York	NA	NA	NA	7,468	15,038	NA
North Carolina	4,022	1,205	963	905	1,044	1,192
North Dakota	1,036	484	202	208	235	292
Ohio	29,741	16,127	5,905	7,246	NA	8,509
Oklahoma	4,327	1,780	1,494	1,430	1,633	1,855
Oregon	3,150	1,431	760	679	944	1,641
Pennsylvania	19,152	10,155	NA	NA	5,283	6,505
Rhode Island	1,408	645	436	438	462	622
South Carolina	1,754	606	491	463	474	562
South Dakota	1,157	533	248	227	274	302
Tennessee	4,525	1,492	1,172	1,111	1,186	1,410
Texas	13,025	7,370	5,930	5,810	6,077	6,125
Utah	5,808	4,463	1,913	1,332	1,264	1,958
Vermont	213	102	114	57	56	77
Virginia	5,980	2,478	1,443	1,064	1,425	1,737
Washington	NA	NA	NA	NA	NA	NA
West Virginia	NA	1,302	619	522	510	665
Wisconsin	11,803	6,382	2,723	2,768	2,415	3,470
Wyoming	NA	745	299	298	NA	503
Total	**389,640**	**200,011**	**R119,836**	**R115,314**	**R132,401**	**R152,508**

See footnotes at end of table.

Table 15. Natural Gas Deliveries to Residential Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					1997
	May	April	March	February	January	Total
Alabama	2,335	4,610	7,480	9,222	9,689	48,496
Alaska	933	1,239	1,529	1,716	2,240	15,146
Arizona	2,092	3,694	5,323	5,604	7,103	31,057
Arkansas	1,722	3,920	6,069	6,668	7,747	42,428
California	38,118	54,072	62,006	76,210	82,302	478,904
Colorado	7,546	11,118	15,570	16,176	18,860	115,583
Connecticut	1,878	3,638	5,051	5,585	6,263	40,562
Delaware	450	846	1,248	1,360	1,408	8,972
District of Columbia	636	1,195	2,032	2,365	2,409	15,807
Florida	1,017	1,631	2,044	2,251	2,470	13,117
Georgia	3,558	8,015	16,312	18,031	20,167	114,383
Hawaii	41	49	49	52	55	517
Idaho	904	1,560	2,032	2,232	2,975	15,239
Illinois	14,790	33,014	54,697	53,146	78,417	497,230
Indiana	5,270	R11,806	R20,920	20,668	26,868	169,140
Iowa	2,807	5,821	10,634	10,261	13,560	81,696
Kansas	4,451	8,389	13,482	13,593	15,826	69,415
Kentucky	1,961	3,937	8,164	8,515	10,618	66,033
Louisiana	2,310	3,736	7,184	7,953	9,311	52,709
Maine	45	71	120	124	153	1,009
Maryland	2,992	5,696	9,577	11,052	12,609	77,500
Massachusetts	NA	10,697	14,514	15,644	16,948	112,308
Michigan	13,888	31,736	47,397	48,977	56,636	379,838
Minnesota	3,836	7,148	16,337	15,023	21,603	128,873
Mississippi	1,231	2,243	NA	4,564	NA	27,626
Missouri	4,980	10,435	17,763	18,966	22,378	127,625
Montana	NA	1,676	2,429	2,404	3,418	21,002
Nebraska	1,961	4,324	6,482	6,642	7,902	47,105
Nevada	1,884	2,826	3,809	4,149	5,025	25,243
New Hampshire	378	697	R853	1,010	1,140	6,939
New Jersey	11,735	17,514	26,429	29,313	30,800	216,925
New Mexico	1,270	2,589	4,740	4,337	7,884	36,623
New York	NA	30,102	42,752	46,717	53,322	375,641
North Carolina	2,243	5,018	7,535	9,710	10,803	52,894
North Dakota	490	953	1,464	1,561	1,910	11,370
Ohio	11,550	24,861	44,211	43,910	50,527	354,543
Oklahoma	3,094	5,854	10,832	11,652	13,774	71,762
Oregon	2,135	NA	NA	4,581	6,117	32,522
Pennsylvania	9,880	NA	32,526	34,714	31,526	262,494
Rhode Island	1,001	NA	2,402	2,720	2,781	18,162
South Carolina	1,071	2,421	4,006	5,177	5,432	25,741
South Dakota	512	1,127	1,738	1,666	2,196	13,203
Tennessee	2,674	5,170	9,938	9,546	NA	64,130
Texas	9,148	15,463	28,005	34,096	41,199	234,988
Utah	2,243	4,853	6,482	8,193	8,396	58,108
Vermont	118	266	340	397	427	2,631
Virginia	2,509	5,172	9,618	11,067	11,546	73,905
Washington	NA	NA	NA	NA	NA	61,813
West Virginia	NA	2,785	4,553	4,906	5,039	35,996
Wisconsin	4,080	9,198	17,130	15,618	22,087	135,819
Wyoming	704	1,182	1,566	1,560	NA	12,999
Total	**220,663**	**R406,170**	**R638,253**	**685,125**	**808,238**	**4,983,772**

R Revised Data.
NA Not Available.
Notes: Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.
Source: Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

Table 16. Natural Gas Deliveries to Commercial Consumers, by State, 1997-1999

(Million Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999		
				July	June	May
Alabama	16,629	17,872	19,579	1,554	1,556	1,438
Alaska	15,113	15,731	15,595	1,216	1,330	1,763
Arizona	20,067	20,681	19,128	1,837	2,144	2,498
Arkansas	NA	19,151	19,135	1,300	NA	NA
California	195,164	169,508	149,031	22,458	21,553	26,045
Colorado	NA	NA	46,133	NA	3,326	5,491
Connecticut	30,514	27,321	27,129	2,527	2,591	3,209
Delaware	4,361	3,954	4,533	182	215	347
District of Columbia	NA	11,656	11,679	NA	940	1,249
Florida	22,468	24,288	22,164	2,007	2,444	2,786
Georgia	NA	37,593	34,183	1,644	1,713	NA
Hawaii	1,029	1,026	1,106	144	143	143
Idaho	8,372	7,680	7,443	425	520	852
Illinois	120,456	109,786	128,384	6,219	5,980	8,317
Indiana	NA	NA	53,664	NA	NA	NA
Iowa	29,722	27,967	31,766	1,522	1,407	1,764
Kansas	NA	35,657	26,530	1,819	1,622	2,208
Kentucky	22,828	21,608	23,683	1,003	1,205	1,673
Louisiana	15,348	16,416	16,419	1,397	1,490	1,642
Maine	1,637	1,577	1,705	75	90	R122
Maryland	NA	36,833	31,111	NA	3,186	NA
Massachusetts	NA	62,051	67,846	NA	R4,922	R5,306
Michigan	118,026	108,332	125,878	5,464	6,183	9,049
Minnesota	56,676	52,039	59,236	2,638	2,852	4,048
Mississippi	NA	15,237	13,650	1,054	1,078	NA
Missouri	44,761	42,675	47,091	3,121	2,465	3,251
Montana	7,810	7,592	8,984	423	473	R735
Nebraska	19,861	19,569	21,959	1,074	1,123	1,827
Nevada	14,776	15,270	13,948	1,935	1,400	1,703
New Hampshire	NA	NA	4,899	212	266	NA
New Jersey	NA	93,977	107,281	NA	NA	NA
New Mexico	22,883	19,812	19,788	1,718	1,758	2,273
New York	NA	NA	201,984	22,659	NA	NA
North Carolina	31,555	25,703	23,865	1,583	1,695	2,216
North Dakota	6,990	6,616	7,262	279	286	623
Ohio	111,947	NA	121,964	4,667	5,501	7,815
Oklahoma	27,712	30,924	29,801	1,743	1,016	2,382
Oregon	19,236	NA	16,781	1,128	1,462	2,053
Pennsylvania	89,926	NA	91,692	4,544	5,049	6,605
Rhode Island	8,072	7,676	8,182	501	526	650
South Carolina	13,884	13,194	11,109	1,125	1,107	1,341
South Dakota	6,523	6,161	6,958	313	438	493
Tennessee	NA	NA	35,511	2,290	3,366	2,605
Texas	116,358	123,357	129,158	11,859	11,427	12,626
Utah	18,702	18,824	18,703	1,090	989	1,858
Vermont	1,641	1,913	1,994	66	91	140
Virginia	NA	38,842	38,912	2,611	2,581	NA
Washington	NA	NA	25,791	NA	NA	NA
West Virginia	NA	15,858	15,974	1,197	NA	R1,909
Wisconsin	57,814	50,519	55,123	3,154	3,146	3,619
Wyoming	6,151	NA	7,552	362	450	847
Total	**1,998,790**	**1,926,159**	**2,028,980**	**146,409**	**R149,078**	**R184,282**

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Commercial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1999				1998	
	April	March	February	January	Total	December
Alabama	2,093	3,097	3,007	3,884	25,165	2,355
Alaska	1,967	2,822	2,894	3,122	27,155	3,382
Arizona	2,980	3,158	3,569	3,880	31,754	3,376
Arkansas	2,503	3,384	3,503	5,531	28,002	3,160
California	27,184	29,895	31,671	36,358	319,553	35,388
Colorado	NA	7,527	8,906	11,048	NA	7,986
Connecticut	3,724	5,831	6,038	6,594	42,471	4,991
Delaware	637	998	944	1,038	5,624	626
District of Columbia	1,976	2,333	2,549	2,486	16,915	1,483
Florida	3,414	3,969	3,797	4,051	38,240	3,369
Georgia	2,970	5,497	5,786	7,139	55,578	5,541
Hawaii	147	142	158	153	1,747	151
Idaho	1,233	1,532	1,734	2,076	11,718	1,642
Illinois	14,054	24,499	26,221	35,165	175,082	24,720
Indiana	NA	NA	12,406	16,957	NA	NA
Iowa	3,783	6,201	6,162	8,883	R43,021	5,999
Kansas	3,588	NA	NA	NA	50,545	5,585
Kentucky	2,550	5,102	4,940	6,354	33,883	4,924
Louisiana	2,059	2,485	2,692	3,584	R24,509	2,259
Maine	199	357	341	454	NA	337
Maryland	5,678	NA	NA	9,129	57,671	6,716
Massachusetts	R9,308	R10,549	NA	6,643	NA	R6,412
Michigan	14,919	25,951	25,441	31,019	164,836	20,702
Minnesota	7,091	11,097	12,605	16,345	84,104	12,694
Mississippi	NA	2,676	2,934	NA	23,170	2,318
Missouri	5,222	8,515	9,713	12,474	61,869	7,156
Montana	1,168	1,346	1,550	2,115	R12,275	1,819
Nebraska	2,309	3,484	4,246	5,798	28,465	3,910
Nevada	1,977	2,372	2,486	2,903	23,049	2,528
New Hampshire	658	1,026	1,070	1,312	NA	810
New Jersey	NA	NA	NA	NA	NA	NA
New Mexico	3,148	3,836	4,322	5,827	30,824	4,613
New York	NA	NA	NA	NA	NA	NA
North Carolina	3,576	9,796	6,309	6,380	37,774	4,006
North Dakota	909	1,253	1,558	2,083	10,290	1,390
Ohio	15,152	24,032	26,480	28,299	NA	21,958
Oklahoma	3,917	4,745	5,832	8,077	44,821	5,604
Oregon	2,699	3,462	3,880	4,554	NA	3,630
Pennsylvania	12,458	19,237	20,975	21,058	NA	15,512
Rhode Island	1,085	1,731	1,686	1,892	R11,260	1,308
South Carolina	1,945	3,183	2,232	2,952	19,887	1,940
South Dakota	914	1,149	1,343	1,873	9,274	1,306
Tennessee	NA	6,399	6,648	9,606	NA	6,190
Texas	16,114	18,021	18,878	27,433	215,939	26,376
Utah	2,920	3,068	4,198	4,580	30,853	4,903
Vermont	227	334	321	462	2,979	401
Virginia	5,237	7,611	8,062	8,962	R59,190	7,141
Washington	NA	NA	NA	NA	NA	NA
West Virginia	R2,184	3,390	3,286	3,882	25,155	2,880
Wisconsin	7,263	11,763	11,927	16,941	81,410	11,696
Wyoming	935	1,077	1,124	1,356	NA	1,708
Total	**R264,279**	**R377,385**	**396,144**	**481,214**	**R3,024,672**	**R365,322**

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Commercial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					
	November	October	September	August	July	June
Alabama	1,676	1,228	1,053	981	1,030	1,118
Alaska	2,676	2,324	1,624	1,418	1,419	1,516
Arizona	2,343	1,902	1,730	1,721	1,890	2,073
Arkansas	1,993	1,356	1,140	1,202	1,273	1,210
California	30,954	26,720	26,660	30,322	27,131	18,132
Colorado	5,059	3,413	2,714	2,329	NA	3,415
Connecticut	3,256	2,686	2,039	2,178	2,456	2,151
Delaware	446	243	179	176	190	226
District of Columbia	1,209	883	837	847	871	913
Florida	2,852	2,656	2,501	2,575	2,630	2,748
Georgia	4,110	3,073	2,612	2,649	2,757	2,725
Hawaii	143	132	140	155	134	148
Idaho	1,047	581	388	381	407	537
Illinois	17,234	10,112	6,559	6,672	5,252	6,702
Indiana	7,162	4,358	NA	R2,009	NA	NA
Iowa	4,257	2,406	1,194	1,199	1,353	1,237
Kansas	3,672	1,929	1,626	2,077	2,201	1,980
Kentucky	3,368	1,705	1,143	1,134	1,061	1,195
Louisiana	1,747	R1,373	1,317	1,398	1,321	1,496
Maine	NA	165	78	74	75	90
Maryland	4,921	3,296	2,827	3,079	2,927	3,155
Massachusetts	NA	5,288	R2,278	3,407	4,054	5,209
Michigan	15,353	8,819	5,790	5,841	5,301	6,297
Minnesota	8,931	5,382	2,747	2,311	2,026	3,003
Mississippi	1,624	1,242	1,445	1,304	1,371	1,298
Missouri	4,410	2,395	2,195	3,039	2,210	2,352
Montana	1,262	789	407	405	400	447
Nebraska	2,186	1,018	935	848	1,070	856
Nevada	1,822	1,288	1,090	1,052	1,304	1,587
New Hampshire	R611	371	222	NA	228	NA
New Jersey	NA	NA	NA	6,079	6,385	6,873
New Mexico	2,533	1,410	1,242	1,214	1,174	1,096
New York	NA	NA	NA	15,604	12,007	13,919
North Carolina	2,870	1,867	1,678	1,650	1,502	1,658
North Dakota	1,042	558	329	354	285	312
Ohio	14,908	6,698	4,919	4,070	NA	5,165
Oklahoma	2,911	1,813	1,756	1,812	1,614	1,826
Oregon	2,689	1,296	1,028	905	1,047	1,428
Pennsylvania	11,849	6,876	4,436	NA	4,607	4,906
Rhode Island	996	613	472	195	484	495
South Carolina	1,531	1,148	1,055	1,019	1,013	1,063
South Dakota	914	363	269	263	283	285
Tennessee	4,239	2,688	2,527	2,366	2,507	2,646
Texas	18,725	14,888	16,529	16,063	18,195	11,161
Utah	3,182	2,078	1,026	840	845	1,154
Vermont	276	165	125	100	102	110
Virginia	5,371	3,304	2,561	1,971	2,739	2,682
Washington	NA	NA	NA	NA	NA	NA
West Virginia	2,339	1,603	1,260	1,215	1,132	1,175
Wisconsin	8,101	4,339	3,346	3,410	3,063	3,471
Wyoming	NA	461	324	232	NA	428
Total	**R263,005**	**R176,570**	**R143,924**	**R149,693**	**147,564**	**141,779**

See footnotes at end of table.

Table 16. Natural Gas Deliveries to Commercial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					1997
	May	April	March	February	January	Total
Alabama	1,393	2,269	3,522	4,010	4,529	32,362
Alaska	1,981	2,229	2,612	2,681	3,295	26,908
Arizona	2,495	3,013	3,548	3,534	4,129	30,284
Arkansas	1,432	2,536	3,843	4,075	4,781	29,443
California	22,410	23,269	19,321	28,787	30,457	256,044
Colorado	4,768	6,738	9,008	9,159	10,507	69,088
Connecticut	2,124	4,294	4,999	5,540	5,757	42,680
Delaware	320	556	829	899	935	6,610
District of Columbia	1,085	1,830	2,032	2,382	2,542	18,018
Florida	3,112	3,701	3,961	3,984	4,152	36,765
Georgia	3,248	4,882	7,391	8,120	8,471	57,227
Hawaii	140	145	140	150	168	1,751
Idaho	689	1,077	1,423	1,570	1,977	11,469
Illinois	6,961	15,326	22,556	22,455	30,533	202,871
Indiana	3,258	R6,399	11,063	10,460	12,876	81,813
Iowa	1,566	3,605	R6,306	5,962	7,938	50,194
Kansas	2,493	3,888	9,214	7,252	8,630	41,238
Kentucky	1,505	2,490	4,636	5,053	5,668	38,632
Louisiana	1,629	2,048	3,079	3,315	3,527	25,629
Maine	122	195	332	342	422	2,713
Maryland	3,514	4,885	7,125	7,365	7,862	49,859
Massachusetts	5,789	8,771	11,570	12,943	13,716	105,818
Michigan	8,530	15,784	22,837	23,664	25,919	192,300
Minnesota	3,208	5,685	11,726	11,133	15,257	92,263
Mississippi	1,339	1,789	2,866	3,310	3,264	22,073
Missouri	2,978	5,545	8,978	9,467	11,144	69,869
Montana	R552	1,029	1,527	1,459	2,178	13,926
Nebraska	1,690	2,786	4,027	4,237	4,903	33,853
Nevada	1,876	2,207	2,642	2,575	3,078	22,024
New Hampshire	375	623	869	1,051	1,167	7,489
New Jersey	10,233	11,748	19,826	18,713	20,200	168,761
New Mexico	1,832	2,727	3,814	3,839	5,330	31,501
New York	NA	20,716	NA	NA	NA	321,447
North Carolina	2,053	3,326	4,879	5,791	6,495	38,021
North Dakota	507	953	1,372	1,434	1,753	10,875
Ohio	7,134	13,211	21,443	23,991	27,046	184,103
Oklahoma	2,291	4,018	6,347	6,859	7,969	45,195
Oregon	1,618	NA	NA	3,308	3,889	25,500
Pennsylvania	6,114	NA	17,790	19,674	21,571	144,134
Rhode Island	680	R1,119	1,492	1,620	1,786	12,306
South Carolina	1,209	1,732	2,440	2,781	2,955	19,561
South Dakota	539	806	1,335	1,292	1,621	10,426
Tennessee	2,993	4,714	7,027	6,063	NA	55,130
Texas	13,951	14,839	20,104	20,826	24,280	216,347
Utah	1,510	2,749	3,787	4,235	4,544	31,257
Vermont	116	281	381	436	487	3,051
Virginia	3,672	R4,799	7,878	8,398	8,673	61,932
Washington	NA	NA	NA	NA	NA	46,802
West Virginia	1,297	2,235	3,146	3,310	3,564	25,918
Wisconsin	3,801	6,632	11,019	9,845	12,688	88,783
Wyoming	545	861	1,128	1,288	NA	10,767
Total	**R174,350**	**R255,448**	**R368,080**	**390,421**	**448,516**	**3,223,030**

R Revised Data.
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 but not in the monthly components. See Appendix A,Explanatory Note 5 for discussion of computations and revision policy. In 1996, consumption of natural gas for agricultural use is classified as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

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

Table 17. Natural Gas Deliveries to Industrial Consumers, by State, 1997-1999

(Million Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999		
				July	June	May
Alabama	124,775	136,675	116,722	17,500	16,985	16,888
Alaska	43,511	44,586	44,317	6,932	5,923	6,318
Arizona	15,766	16,107	15,561	1,987	1,956	2,390
Arkansas	NA	88,452	86,177	11,128	NA	11,490
California	457,803	413,365	414,226	80,894	67,180	68,716
Colorado	NA	41,570	43,852	NA	5,628	6,227
Connecticut	17,773	19,557	20,721	2,160	2,055	2,322
Delaware	12,490	9,385	8,560	1,757	1,459	1,789
District of Columbia	0	0	0	0	0	0
Florida	82,604	78,136	77,092	12,463	11,725	11,822
Georgia	NA	91,863	108,570	7,528	6,687	NA
Hawaii	0	0	0	0	0	0
Idaho [a]	20,128	20,888	20,379	2,450	2,528	2,885
Illinois	183,303	181,346	191,585	21,509	21,065	21,571
Indiana	NA	172,224	167,898	NA	NA	NA
Iowa	63,831	63,672	61,078	7,195	6,980	8,402
Kansas	NA	84,860	67,916	9,660	8,073	NA
Kentucky	54,350	54,364	55,526	6,392	6,525	7,076
Louisiana	568,253	542,491	580,089	80,735	80,832	84,967
Maine	1,255	1,251	1,359	153	184	171
Maryland	NA	21,460	34,184	2,491	2,383	NA
Massachusetts	NA	NA	67,163	NA	NA	9,108
Michigan	172,332	190,192	203,397	19,902	20,408	22,841
Minnesota	63,090	60,321	62,236	7,616	7,893	7,475
Mississippi	NA	NA	48,966	6,669	6,807	7,007
Missouri	NA	39,784	44,037	4,795	4,846	4,658
Montana	14,445	10,071	10,480	1,293	R1,694	R1,968
Nebraska	18,247	23,560	26,679	4,397	2,186	2,076
Nevada	19,029	15,449	16,718	2,504	2,573	2,811
New Hampshire	3,479	3,300	3,507	442	457	486
New Jersey	NA	116,292	119,689	NA	NA	NA
New Mexico	NA	22,076	24,439	5,368	5,221	5,743
New York	NA	NA	183,413	26,081	22,323	NA
North Carolina	63,052	68,410	65,210	9,256	8,940	8,827
North Dakota	11,566	12,970	12,412	1,155	1,266	1,351
Ohio	199,968	NA	201,272	23,648	23,818	25,487
Oklahoma	86,465	111,338	124,080	9,521	11,596	11,075
Oregon	66,212	NA	47,383	8,008	7,861	8,216
Pennsylvania	143,070	137,631	142,498	17,527	17,717	18,247
Rhode Island	21,135	24,833	15,705	2,969	2,948	3,343
South Carolina	60,148	60,843	59,764	7,396	7,764	8,161
South Dakota	2,941	3,238	4,310	419	282	347
Tennessee	NA	84,214	80,143	12,903	11,323	11,887
Texas	NA	1,122,511	1,214,102	116,200	139,676	NA
Utah	23,552	28,338	25,490	3,200	2,351	3,422
Vermont	1,598	1,254	1,318	174	157	192
Virginia	NA	52,128	47,906	12,584	11,360	NA
Washington	NA	NA	58,110	NA	NA	NA
West Virginia	NA	31,418	33,584	4,222	NA	R3,407
Wisconsin	89,242	82,791	93,824	9,443	9,824	10,286
Wyoming	NA	29,560	27,568	NA	3,056	2,979
Total	**4,921,382**	**5,006,870**	**5,181,215**	**669,626**	**R675,381**	**R688,220**

See footnotes at end of table.

Table 17. Natural Gas Deliveries to Industrial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1999				1998	
	April	March	February	January	Total	December
Alabama	18,047	20,820	17,325	17,209	225,062	15,857
Alaska	6,244	6,270	5,521	6,304	NA	NA
Arizona	2,545	2,237	2,291	2,360	28,209	2,609
Arkansas	11,728	12,581	11,668	13,070	152,073	13,073
California	60,937	52,152	65,298	62,625	729,514	64,279
Colorado	7,703	6,418	7,170	4,603	R67,916	6,739
Connecticut	2,504	2,790	2,957	2,985	32,455	2,815
Delaware	1,767	1,952	1,878	1,887	16,137	1,522
District of Columbia	0	0	0	0	0	0
Florida	12,497	12,588	10,403	11,107	R133,880	11,116
Georgia	9,427	12,217	11,713	12,054	151,146	12,615
Hawaii	0	0	0	0	0	0
Idaho [a]	3,167	3,214	3,081	2,802	34,263	2,632
Illinois	25,818	29,733	29,448	34,159	306,290	29,103
Indiana	NA	NA	26,890	NA	297,187	28,078
Iowa	10,191	9,569	9,611	11,884	107,602	9,466
Kansas	8,493	8,912	7,969	NA	NA	NA
Kentucky	7,600	9,276	8,168	9,312	91,562	8,151
Louisiana	80,246	82,473	74,099	84,900	NA	87,957
Maine	161	189	104	293	2,264	201
Maryland	2,824	R4,039	3,238	2,727	37,610	3,483
Massachusetts	NA	NA	8,668	8,789	NA	NA
Michigan	24,992	28,348	26,741	29,100	301,398	26,840
Minnesota	8,307	9,720	11,213	10,867	R103,573	9,222
Mississippi	NA	7,546	6,900	NA	NA	6,841
Missouri	5,446	5,175	NA	6,624	64,857	5,897
Montana	R2,120	R2,174	R2,554	R2,642	17,137	1,771
Nebraska	953	2,508	2,695	3,432	37,472	2,255
Nevada	2,635	2,816	2,674	3,016	28,532	2,986
New Hampshire	578	505	484	526	NA	484
New Jersey	NA	NA	NA	NA	NA	NA
New Mexico	NA	5,497	4,870	NA	40,139	3,636
New York	NA	NA	NA	NA	NA	NA
North Carolina	8,837	9,200	8,025	9,967	115,082	9,524
North Dakota	1,479	2,037	2,844	1,434	20,912	1,840
Ohio	29,080	32,561	31,901	33,472	NA	31,615
Oklahoma	13,018	12,381	14,203	14,670	191,012	12,040
Oregon	8,923	15,206	8,595	9,403	NA	9,024
Pennsylvania	20,822	23,081	23,816	21,860	231,500	21,066
Rhode Island	2,996	2,528	2,930	3,421	40,858	2,179
South Carolina	9,982	9,684	8,284	8,877	104,878	9,241
South Dakota	446	439	463	545	5,510	573
Tennessee	NA	13,948	12,593	13,193	R145,448	12,892
Texas	131,317	136,528	157,475	169,095	NA	210,615
Utah	3,809	3,718	3,350	3,703	45,366	3,830
Vermont	243	301	312	220	2,105	202
Virginia	10,718	8,714	7,364	5,632	93,999	7,488
Washington	NA	NA	NA	NA	NA	NA
West Virginia	NA	NA	3,705	4,141	51,457	4,262
Wisconsin	12,033	15,029	14,720	17,907	140,446	14,588
Wyoming	3,616	3,832	NA	4,359	R50,850	4,597
Total	**R682,732**	**R716,956**	**R721,230**	**R767,237**	**R8,598,887**	**785,777**

See footnotes at end of table.

Table 17. Natural Gas Deliveries to Industrial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					
	November	October	September	August	July	June
Alabama	17,492	18,337	17,335	19,366	18,324	19,075
Alaska	NA	NA	5,699	NA	6,542	6,251
Arizona	2,384	2,522	2,078	2,508	2,307	2,034
Arkansas	12,033	12,433	13,055	13,027	12,613	12,419
California	60,200	61,870	65,490	64,310	59,188	53,880
Colorado	5,399	4,683	4,230	5,294	R4,959	R5,026
Connecticut	2,641	2,571	2,417	2,455	2,271	2,225
Delaware	1,415	1,412	1,182	1,221	1,097	1,160
District of Columbia	0	0	0	0	0	0
Florida	11,473	10,774	11,553	10,827	11,384	11,469
Georgia	13,015	11,895	8,274	13,484	12,768	13,149
Hawaii	0	0	0	0	0	0
Idaho [a]	2,799	2,712	2,701	2,530	2,620	2,672
Illinois	28,080	25,507	21,840	20,413	20,256	20,738
Indiana	25,419	24,946	24,129	22,391	22,168	22,044
Iowa	9,960	9,295	7,469	7,741	7,647	7,613
Kansas	R13,253	12,280	9,502	13,725	15,481	12,763
Kentucky	7,945	7,705	6,695	6,702	6,738	6,787
Louisiana	66,600	NA	84,209	85,378	80,693	73,666
Maine	219	224	190	179	153	184
Maryland	2,959	3,650	3,040	3,017	2,988	2,935
Massachusetts	8,942	8,006	NA	8,134	7,812	NA
Michigan	25,540	22,636	18,483	17,707	18,191	22,705
Minnesota	9,226	8,990	7,579	8,236	7,803	7,855
Mississippi	6,278	6,419	6,052	NA	5,993	NA
Missouri	4,744	5,194	4,581	4,658	4,512	4,773
Montana	1,563	1,400	1,206	1,126	1,215	1,276
Nebraska	2,620	2,673	2,315	4,050	5,853	3,076
Nevada	2,730	2,836	1,793	2,739	2,458	2,337
New Hampshire	NA	555	476	NA	438	431
New Jersey	NA	NA	NA	15,840	15,601	14,727
New Mexico	3,439	3,627	3,805	3,556	3,536	3,179
New York	NA	NA	NA	NA	NA	21,404
North Carolina	9,456	9,423	8,986	9,283	8,561	9,042
North Dakota	1,712	1,110	1,655	1,625	1,522	1,794
Ohio	28,292	27,630	24,368	23,492	NA	24,008
Oklahoma	12,518	17,337	19,543	18,236	16,672	16,280
Oregon	8,625	8,988	8,452	8,883	8,185	6,767
Pennsylvania	18,945	18,082	17,892	17,882	17,111	17,926
Rhode Island	3,431	3,562	3,132	3,722	3,654	3,412
South Carolina	9,092	8,837	8,475	8,389	7,613	8,464
South Dakota	554	294	411	440	416	307
Tennessee	12,705	13,618	10,436	11,583	10,097	10,242
Texas	187,889	NA	151,722	164,970	181,812	150,210
Utah	3,533	3,432	3,192	3,040	3,424	3,678
Vermont	181	179	154	135	153	152
Virginia	7,847	8,947	8,135	9,453	9,435	8,103
Washington	NA	NA	NA	NA	NA	NA
West Virginia	4,018	4,037	3,817	3,904	3,965	4,043
Wisconsin	12,952	11,284	9,610	9,221	7,967	9,204
Wyoming	4,480	4,320	3,888	4,005	3,983	4,162
Total	**R724,268**	**711,148**	**673,503**	**697,321**	**R699,756**	**R654,749**

See footnotes at end of table.

Table 17. Natural Gas Deliveries to Industrial Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					1997
	May	April	March	February	January	Total
Alabama	19,854	19,308	20,569	18,609	20,935	201,240
Alaska	5,854	6,455	6,878	6,152	6,454	73,599
Arizona	2,313	2,281	2,413	2,226	2,533	27,864
Arkansas	11,839	12,765	13,363	12,114	13,339	147,969
California	66,080	55,492	47,185	67,501	64,039	737,354
Colorado	5,649	6,278	6,323	6,388	6,949	73,781
Connecticut	2,546	2,782	3,183	3,149	3,402	34,554
Delaware	1,256	1,348	1,477	1,443	1,604	14,805
District of Columbia	0	0	0	0	0	0
Florida	11,765	11,608	R11,464	R9,386	R11,060	130,816
Georgia	12,501	12,866	13,434	13,335	13,808	174,747
Hawaii	0	0	0	0	0	342
Idaho [a]	2,593	3,047	3,130	3,482	3,344	34,999
Illinois	22,462	26,752	29,211	28,719	33,208	317,755
Indiana	23,136	22,400	27,772	25,847	28,857	290,723
Iowa	7,616	9,066	10,893	9,516	11,321	107,463
Kansas	11,091	10,661	11,559	10,398	12,908	112,089
Kentucky	7,022	7,543	8,884	7,550	9,839	95,724
Louisiana	75,577	77,970	77,158	74,500	82,928	1,004,383
Maine	168	180	182	182	202	2,525
Maryland	3,002	3,094	3,607	2,764	3,069	65,954
Massachusetts	7,635	8,209	8,759	8,443	9,923	108,295
Michigan	25,012	26,873	32,052	31,380	33,980	338,456
Minnesota	6,901	8,548	9,039	10,044	R10,130	107,338
Mississippi	NA	NA	NA	6,814	NA	83,967
Missouri	4,830	5,473	6,788	6,360	7,047	71,164
Montana	1,244	1,521	1,481	1,449	1,884	18,766
Nebraska	2,662	2,543	3,043	2,902	3,481	44,418
Nevada	2,455	2,453	2,174	1,979	1,593	28,925
New Hampshire	473	457	523	498	481	5,830
New Jersey	15,723	16,455	17,152	17,655	18,980	202,418
New Mexico	3,131	3,190	2,891	2,895	3,254	40,854
New York	NA	22,542	26,423	NA	NA	305,521
North Carolina	9,439	9,366	10,846	10,404	10,752	111,513
North Dakota	1,961	1,853	1,924	1,844	2,072	20,580
Ohio	25,977	29,362	32,257	31,779	35,912	335,993
Oklahoma	13,793	14,388	16,578	17,131	16,497	206,677
Oregon	7,015	NA	NA	8,744	9,760	90,403
Pennsylvania	18,161	19,808	21,699	20,811	22,115	238,220
Rhode Island	3,510	3,420	3,632	3,462	3,742	24,472
South Carolina	8,713	8,159	9,121	9,129	9,645	102,929
South Dakota	697	279	474	500	565	6,928
Tennessee	11,710	12,020	14,188	12,628	R13,329	138,877
Texas	154,540	153,724	159,503	R153,269	169,452	2,058,755
Utah	3,668	4,480	4,273	4,080	4,735	44,162
Vermont	164	164	194	205	223	2,334
Virginia	6,263	7,746	6,391	7,444	6,747	85,264
Washington	NA	NA	NA	NA	NA	111,159
West Virginia	4,022	4,584	5,091	4,659	5,054	57,380
Wisconsin	9,508	11,658	14,819	13,298	16,337	155,677
Wyoming	4,281	3,305	4,068	R4,605	5,156	46,936
Total	**676,415**	**701,156**	**R742,834**	**R735,289**	**R796,670**	**8,842,896**

[a] Small volumes of natural gas representing onsystem sales to industrial consumers in Idaho are included in the annual total but not in monthly components.

R Revised Data.

NA Not Available.

Notes: Geographic coverage is the 50 States and the District of Columbia. See Appendix A, Explanatory Note 5 for discussion of computations and revision policy. In 1996, consumption of natural gas for agricultural use is classified as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

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

Table 18. Natural Gas Deliveries to Electric Utility[a] Consumers, by State, 1997-1999

(Million Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999		
				July	June	May
Alabama	11,226	13,874	5,149	4,717	1,937	1,289
Alaska	17,061	16,528	20,428	2,551	2,189	2,290
Arizona	26,407	13,058	10,780	6,138	5,287	4,279
Arkansas	23,241	23,395	13,198	7,104	5,602	3,982
California	117,326	141,538	189,311	14,988	12,409	11,714
Colorado	9,803	5,182	2,677	2,315	1,817	1,987
Connecticut	6,349	6,100	8,506	3,003	1,798	1,311
Delaware	12,791	5,095	12,097	3,804	2,531	2,052
District of Columbia	0	0	0	0	0	0
Florida	168,756	160,530	178,900	33,921	29,566	29,547
Georgia	10,748	12,656	3,504	4,351	1,722	1,374
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	30,381	38,224	25,706	10,896	4,828	2,672
Indiana	5,465	5,646	3,312	2,646	1,174	245
Iowa	3,414	3,331	2,598	1,616	646	278
Kansas	23,287	18,347	13,110	8,527	3,543	2,800
Kentucky	3,469	3,229	1,154	1,889	500	214
Louisiana	187,864	173,565	158,768	38,149	34,541	29,398
Maine	0	0	0	0	0	0
Maryland	10,434	5,672	8,011	5,877	1,826	478
Massachusetts	6,413	12,915	32,294	1,672	1,820	1,572
Michigan	32,658	26,839	18,107	7,611	5,206	5,210
Minnesota	4,617	3,847	4,508	1,913	728	657
Mississippi	58,232	44,413	38,974	14,102	9,827	9,505
Missouri	9,704	7,707	4,297	4,940	1,710	496
Montana	222	251	256	112	32	6
Nebraska	3,387	2,633	1,564	1,895	745	201
Nevada	35,663	29,917	27,923	6,824	5,834	5,642
New Hampshire	156	98	366	67	24	16
New Jersey	19,762	19,362	19,970	11,544	3,439	2,070
New Mexico	19,410	22,572	18,759	3,916	2,706	2,011
New York	115,169	118,784	126,758	26,219	22,476	23,122
North Carolina	5,523	6,970	2,797	3,807	1,102	131
North Dakota	0	0	1	0	0	0
Ohio	8,366	4,112	2,151	3,367	1,488	737
Oklahoma	101,128	90,134	64,597	24,982	18,440	13,921
Oregon	8,239	10,189	976	1,575	876	2,032
Pennsylvania	6,740	5,199	5,153	3,241	2,071	465
Rhode Island	0	13,339	14,779	0	0	0
South Carolina	2,948	3,525	1,710	2,291	389	76
South Dakota	1,830	1,452	1,196	646	213	215
Tennessee	2,001	3,041	1,099	1,208	594	58
Texas	685,111	709,490	555,769	152,748	127,509	104,215
Utah	2,818	2,111	1,609	654	598	166
Vermont	18	154	20	0	2	1
Virginia	15,669	10,601	7,727	4,066	1,885	2,229
Washington	1,228	1,438	125	52	39	560
West Virginia	220	230	164	25	32	48
Wisconsin	9,690	10,162	12,573	4,044	1,895	1,432
Wyoming	122	238	52	8	68	6
Total	**1,825,067**	**1,807,694**	**1,623,484**	**436,024**	**323,665**	**272,705**

See footnotes at end of table.

Table 18. Natural Gas Deliveries to Electric Utility[a] Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1999				1998	
	April	March	February	January	Total	December
Alabama	1,247	925	550	561	25,546	789
Alaska	2,282	2,499	2,519	2,733	28,784	2,957
Arizona	4,483	2,013	1,783	2,424	38,674	3,738
Arkansas	2,579	2,034	1,376	564	40,576	367
California	18,722	19,915	19,517	20,060	271,154	17,740
Colorado	1,125	1,141	981	438	10,627	918
Connecticut	84	123	1	29	10,719	123
Delaware	673	1,687	912	1,131	11,135	911
District of Columbia	0	0	0	0	0	0
Florida	28,221	18,961	13,119	15,422	281,346	17,667
Georgia	3,046	220	20	16	22,371	259
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	5,295	2,863	1,357	2,470	56,337	1,469
Indiana	403	332	147	517	9,096	237
Iowa	348	189	193	145	5,947	144
Kansas	3,740	2,451	1,042	1,184	36,896	1,679
Kentucky	196	142	90	438	5,760	136
Louisiana	25,149	21,653	17,481	21,493	318,395	18,345
Maine	0	0	0	0	0	0
Maryland	1,382	289	138	444	12,303	499
Massachusetts	763	412	51	122	18,427	725
Michigan	4,041	3,881	3,061	3,649	48,321	3,449
Minnesota	438	437	151	294	7,738	120
Mississippi	10,077	4,296	4,678	5,748	76,362	4,126
Missouri	1,436	279	310	533	16,035	515
Montana	9	4	5	53	522	36
Nebraska	344	118	44	40	5,044	106
Nevada	4,813	4,274	3,699	4,578	60,937	5,362
New Hampshire	0	16	0	32	149	0
New Jersey	658	686	343	1,022	30,996	792
New Mexico	3,104	2,789	2,322	2,563	39,034	2,876
New York	14,099	12,815	8,397	8,041	208,348	10,911
North Carolina	421	25	3	34	12,418	36
North Dakota	0	0	0	0	0	0
Ohio	1,158	971	333	312	7,663	351
Oklahoma	13,186	12,492	7,519	10,588	174,577	13,066
Oregon	1,069	219	936	1,532	28,883	3,009
Pennsylvania	284	315	105	261	6,890	357
Rhode Island	0	0	0	0	15,589	0
South Carolina	109	48	21	14	5,893	42
South Dakota	279	232	120	125	2,865	189
Tennessee	141	0	0	0	6,213	0
Texas	97,047	81,573	55,651	66,368	1,242,574	71,865
Utah	341	392	337	331	5,945	493
Vermont	2	6	2	5	188	4
Virginia	1,812	2,093	1,918	1,666	20,386	757
Washington	503	6	40	28	13,352	635
West Virginia	29	35	24	27	417	25
Wisconsin	553	568	648	550	16,348	730
Wyoming	4	13	14	9	271	5
Total	**255,694**	**206,430**	**151,958**	**178,592**	**3,258,054**	**188,557**

See footnotes at end of table.

Table 18. Natural Gas Deliveries to Electric Utility[a] Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					
	November	October	September	August	July	June
Alabama	568	973	4,213	5,129	5,071	4,763
Alaska	2,669	2,190	2,402	2,038	2,163	2,102
Arizona	2,716	4,777	6,200	8,185	6,791	1,986
Arkansas	122	1,753	6,764	8,176	7,022	6,618
California	20,126	25,310	31,816	34,624	26,020	15,338
Colorado	1,046	684	1,378	1,419	1,763	914
Connecticut	9	209	1,605	2,672	1,582	1,708
Delaware	1,152	985	1,319	1,672	1,648	1,196
District of Columbia	0	0	0	0	0	0
Florida	18,413	28,024	27,465	29,246	31,965	33,183
Georgia	337	741	3,350	5,027	5,457	4,959
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	1,465	1,426	6,084	7,669	7,640	7,325
Indiana	172	389	957	1,695	1,911	1,732
Iowa	147	177	1,099	1,049	933	749
Kansas	2,097	1,602	6,109	7,062	7,713	5,133
Kentucky	151	206	978	1,060	649	950
Louisiana	20,877	24,381	36,591	44,636	43,677	38,806
Maine	0	0	0	0	0	0
Maryland	188	232	2,565	3,146	2,186	1,396
Massachusetts	777	918	1,127	1,965	1,404	2,164
Michigan	3,163	3,934	5,415	5,520	4,553	5,074
Minnesota	268	504	1,538	1,461	1,389	979
Mississippi	3,553	4,004	9,141	11,125	10,887	10,629
Missouri	521	228	3,067	3,997	3,750	2,425
Montana	33	48	69	83	80	26
Nebraska	35	154	955	1,161	1,022	702
Nevada	4,649	5,732	6,460	8,818	8,189	4,036
New Hampshire	25	0	0	26	37	35
New Jersey	804	376	3,446	6,216	7,105	4,303
New Mexico	2,246	2,708	3,782	4,850	5,283	4,019
New York	8,116	15,872	20,464	34,201	29,277	24,080
North Carolina	29	136	2,132	3,116	2,041	3,788
North Dakota	0	0	0	0	0	0
Ohio	170	272	1,333	1,426	1,307	1,103
Oklahoma	11,482	11,983	21,106	26,807	26,740	20,703
Oregon	4,188	3,701	4,014	3,781	3,008	835
Pennsylvania	98	220	561	455	1,411	2,017
Rhode Island	0	0	0	2,251	2,238	1,453
South Carolina	97	72	919	1,237	1,239	1,413
South Dakota	190	61	366	608	627	315
Tennessee	0	190	1,860	1,123	1,407	1,202
Texas	61,712	95,036	143,064	161,408	174,322	153,383
Utah	165	648	1,206	1,323	1,126	160
Vermont	3	7	11	8	15	7
Virginia	625	1,435	3,323	3,645	2,969	2,253
Washington	1,742	3,318	2,749	3,470	621	33
West Virginia	56	52	20	34	53	46
Wisconsin	589	486	2,044	2,338	3,059	2,554
Wyoming	6	13	9	1	5	10
Total	**177,596**	**246,171**	**381,075**	**456,960**	**449,354**	**378,607**

See footnotes at end of table.

Table 18. Natural Gas Deliveries to Electric Utility[a] Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					1997
	May	April	March	February	January	Total
Alabama	2,843	296	382	157	362	9,997
Alaska	2,420	2,274	2,391	2,316	2,862	33,510
Arizona	674	1,127	718	803	961	23,385
Arkansas	5,431	2,262	1,507	269	286	24,805
California	13,746	18,053	23,365	18,272	26,743	377,946
Colorado	690	581	412	446	377	5,536
Connecticut	1,385	157	23	109	1,135	16,761
Delaware	900	548	475	74	255	16,092
District of Columbia	0	0	0	0	0	0
Florida	26,818	15,852	18,011	15,630	19,071	296,903
Georgia	1,891	41	149	57	102	7,342
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	7,006	4,790	3,985	3,502	3,977	44,607
Indiana	1,102	231	427	129	115	4,661
Iowa	674	288	237	195	255	4,124
Kansas	3,088	575	891	426	521	25,822
Kentucky	1,017	107	282	138	86	2,194
Louisiana	31,804	18,072	16,190	9,854	15,161	277,438
Maine	0	0	0	0	0	0
Maryland	932	373	371	222	191	11,007
Massachusetts	2,661	1,575	1,561	1,316	2,235	51,490
Michigan	4,196	3,582	3,735	2,480	3,218	33,287
Minnesota	792	264	202	104	118	6,098
Mississippi	8,715	4,398	3,920	2,774	3,090	73,083
Missouri	947	208	160	80	137	7,465
Montana	89	15	39	0	1	420
Nebraska	621	173	58	21	36	2,656
Nevada	3,932	3,926	2,925	3,377	3,532	51,777
New Hampshire	0	0	0	26	0	564
New Jersey	3,925	1,248	1,835	419	528	29,534
New Mexico	3,015	3,446	3,091	1,801	1,917	33,375
New York	18,922	9,089	10,407	10,285	16,724	217,504
North Carolina	1,026	12	91	1	11	4,512
North Dakota	0	0	0	0	0	1
Ohio	1,005	179	307	96	114	3,486
Oklahoma	13,832	7,905	9,348	5,179	6,427	128,818
Oregon	176	2,265	1,334	1,101	1,470	10,680
Pennsylvania	622	260	406	257	225	7,370
Rhode Island	1,943	1,606	1,888	1,599	2,612	27,160
South Carolina	687	37	105	11	33	2,731
South Dakota	366	33	42	6	63	1,731
Tennessee	432	0	0	0	0	1,636
Texas	115,390	82,922	80,353	48,953	54,167	1,056,550
Utah	157	153	177	164	174	4,078
Vermont	12	6	3	47	65	36
Virginia	2,157	698	1,196	476	852	11,572
Washington	14	152	121	5	492	2,618
West Virginia	30	22	29	29	21	219
Wisconsin	2,279	394	1,106	352	418	15,776
Wyoming	6	8	3	200	7	95
Total	**290,368**	**190,201**	**194,258**	**133,757**	**171,149**	**2,968,453**

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

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

See Appendix A, Explanatory Note 5 for discussion of computations and revision policy.

Source: Form EIA-759, "Monthly Power Plant Report."

Table 19. Natural Gas Deliveries to All Consumers, by State, 1997-1999

(Million Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999		
				July	June	May
Alabama	183,571	204,345	174,091	25,072	21,880	21,550
Alaska	85,952	85,608	88,912	11,184	10,001	11,310
Arizona	85,379	76,099	66,705	11,018	10,728	11,235
Arkansas	153,081	159,091	147,346	20,530	R20,067	R18,730
California	1,165,472	1,095,473	1,056,418	144,066	134,100	147,078
Colorado	NA	167,706	171,041	NA	15,518	23,423
Connecticut	81,178	77,617	83,712	8,635	7,572	8,721
Delaware	36,185	24,194	31,663	5,945	4,459	4,684
District of Columbia	NA	21,097	22,333	NA	1,339	1,936
Florida	282,690	273,890	286,380	49,048	44,457	45,007
Georgia	155,489	214,337	211,473	15,745	11,630	12,729
Hawaii	1,349	1,365	1,418	189	186	187
Idaho	40,672	39,339	38,010	3,303	3,694	4,982
Illinois	618,984	584,446	665,641	48,591	42,995	48,427
Indiana	NA	319,164	336,372	NA	R40,326	NA
Iowa	145,663	141,111	149,308	12,157	10,630	13,526
Kansas	NA	199,207	153,304	21,777	15,706	NA
Kentucky	119,123	115,078	121,543	10,455	9,565	10,764
Louisiana	803,216	766,555	790,408	122,081	118,847	118,399
Maine	3,496	3,394	3,701	251	305	R338
Maryland	NA	109,805	124,373	NA	9,567	NA
Massachusetts	NA	NA	243,961	NA	R29,416	R24,814
Michigan	562,774	541,043	605,343	39,886	42,209	53,199
Minnesota	201,133	185,426	211,041	14,413	14,578	17,148
Mississippi	NA	NA	119,859	22,609	18,524	18,935
Missouri	NA	170,486	183,241	15,407	12,102	13,712
Montana	35,105	29,869	33,283	2,345	R2,858	R4,107
Nebraska	70,274	75,286	83,863	8,369	5,233	6,732
Nevada	88,866	80,795	75,412	12,209	11,047	12,008
New Hampshire	13,227	NA	13,515	874	943	1,256
New Jersey	NA	356,002	393,150	NA	NA	NA
New Mexico	NA	86,386	84,396	11,822	10,605	11,186
New York	NA	NA	767,257	85,075	NA	NA
North Carolina	138,717	138,629	127,420	15,765	13,055	13,782
North Dakota	25,868	26,491	27,698	1,666	1,818	2,600
Ohio	534,001	NA	560,811	38,305	38,778	46,614
Oklahoma	261,252	281,089	267,993	37,906	33,062	30,544
Oregon	119,630	NA	87,143	11,549	11,834	15,055
Pennsylvania	395,675	NA	413,191	30,423	31,355	36,087
Rhode Island	41,394	57,434	51,280	4,001	4,031	4,942
South Carolina	95,131	96,706	89,660	11,304	9,831	10,774
South Dakota	19,382	18,665	21,562	1,652	1,257	1,683
Tennessee	NA	163,857	158,683	17,468	16,707	NA
Texas	NA	2,095,470	2,051,942	287,098	285,705	NA
Utah	78,275	82,661	79,793	7,198	5,585	8,108
Vermont	5,094	5,001	5,174	295	327	492
Virginia	NA	144,647	142,786	20,778	17,424	NA
Washington	NA	NA	119,424	NA	NA	NA
West Virginia	NA	67,287	72,529	5,975	NA	R6,751
Wisconsin	236,575	217,470	248,569	19,288	18,210	20,427
Wyoming	NA	NA	43,473	NA	4,070	4,927
Total	**11,922,937**	**11,784,083**	**12,107,599**	**1,381,686**	**R1,305,168**	**R1,380,920**

See footnotes at end of table.

Table 19. Natural Gas Deliveries to All Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1999				1998	
	April	March	February	January	Total	December
Alabama	25,408	31,445	27,246	30,970	322,428	23,534
Alaska	11,807	13,666	13,158	14,826	147,720	14,986
Arizona	13,298	11,069	13,011	15,019	134,452	14,346
Arkansas	20,542	23,155	21,807	28,252	259,454	21,517
California	168,965	169,377	194,473	207,412	1,870,106	186,227
Colorado	25,857	28,762	32,456	38,285	R253,002	29,840
Connecticut	9,935	14,524	15,078	16,712	121,350	12,418
Delaware	4,066	6,212	5,203	5,616	40,707	3,961
District of Columbia	3,245	4,658	4,857	5,400	30,104	3,024
Florida	45,367	37,194	28,874	32,743	R468,465	R33,297
Georgia	20,327	28,558	30,600	35,900	335,333	33,189
Hawaii	193	186	205	202	2,291	195
Idaho	6,275	7,004	7,448	7,967	61,955	6,707
Illinois	76,416	118,510	118,464	165,581	943,171	119,331
Indiana	NA	NA	60,327	80,594	NA	NA
Iowa	19,867	25,822	26,622	37,039	R225,482	26,120
Kansas	22,816	28,740	28,075	NA	NA	NA
Kentucky	14,449	23,759	21,978	28,154	187,099	22,577
Louisiana	111,290	112,180	100,272	120,148	R1,335,394	113,502
Maine	435	676	578	913	5,655	670
Maryland	16,010	R22,372	22,274	26,960	NA	19,949
Massachusetts	R34,319	R44,601	34,771	28,117	NA	R30,320
Michigan	75,564	112,050	107,362	132,504	831,885	93,042
Minnesota	24,400	36,599	41,064	52,930	R305,993	40,705
Mississippi	NA	18,227	R17,659	R21,460	NA	15,794
Missouri	21,771	30,549	NA	45,831	253,135	27,398
Montana	R5,214	R5,662	R6,628	R8,290	R49,153	6,569
Nebraska	7,337	11,831	12,934	17,838	111,685	10,494
Nevada	12,142	12,810	13,191	15,458	142,541	15,210
New Hampshire	1,909	2,539	2,590	3,115	NA	2,033
New Jersey	NA	NA	NA	NA	NA	NA
New Mexico	NA	18,599	16,409	NA	145,612	18,414
New York	NA	NA	NA	NA	NA	NA
North Carolina	18,182	28,489	21,832	27,610	215,593	19,245
North Dakota	3,371	4,608	5,967	5,837	41,491	4,685
Ohio	72,247	108,903	107,908	121,245	NA	96,741
Oklahoma	36,362	38,033	37,020	48,324	475,813	38,388
Oregon	16,579	23,934	18,855	21,825	NA	21,167
Pennsylvania	54,080	77,564	79,300	86,866	NA	64,611
Rhode Island	5,782	6,963	7,279	8,396	R84,105	5,371
South Carolina	14,264	17,294	14,128	17,536	155,973	14,080
South Dakota	2,779	3,307	3,646	5,058	29,298	3,736
Tennessee	NA	27,924	28,158	37,984	R262,933	27,441
Texas	259,945	256,140	255,885	306,033	NA	337,337
Utah	12,336	12,602	15,610	16,835	138,895	19,052
Vermont	756	1,017	1,023	1,184	7,726	895
Virginia	22,879	29,725	28,564	29,151	NA	24,374
Washington	NA	NA	NA	NA	NA	NA
West Virginia	NA	NA	11,950	14,254	105,765	11,062
Wisconsin	28,958	43,610	44,128	61,954	354,578	45,711
Wyoming	5,772	6,239	NA	7,653	NA	7,888
Total	**R1,617,467**	**R1,957,327**	**R1,944,530**	**R2,335,838**	**R19,362,973**	**R1,952,857**

See footnotes at end of table.

Table 19. Natural Gas Deliveries to All Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					
	November	October	September	August	July	June
Alabama	22,229	21,862	23,797	26,659	25,628	26,343
Alaska	13,057	12,401	10,543	11,125	10,602	10,497
Arizona	9,433	10,323	10,941	13,309	12,050	7,467
Arkansas	17,104	16,649	21,819	23,275	21,870	21,251
California	151,474	140,054	146,001	150,877	137,487	120,557
Colorado	19,959	12,965	11,011	11,521	R13,218	R10,946
Connecticut	9,164	6,999	6,999	8,154	7,337	7,280
Delaware	3,589	2,871	2,857	3,234	3,131	2,833
District of Columbia	2,293	1,340	1,176	1,174	1,242	1,348
Florida	33,673	42,172	42,145	43,287	46,686	48,216
Georgia	26,768	19,977	17,087	23,974	23,938	24,020
Hawaii	183	172	181	195	179	195
Idaho	5,353	3,948	3,405	3,203	3,429	3,876
Illinois	90,632	58,574	44,996	45,191	42,646	46,294
Indiana	45,997	36,048	R30,974	R28,836	R29,251	R30,308
Iowa	20,707	14,907	11,196	11,442	11,556	11,035
Kansas	R25,989	18,590	19,008	24,716	27,485	22,388
Kentucky	17,607	11,855	9,983	10,000	9,770	10,292
Louisiana	91,902	R106,630	123,820	132,986	127,464	115,782
Maine	566	452	295	278	251	305
Maryland	14,622	NA	NA	11,097	9,929	9,573
Massachusetts	24,816	18,469	R13,495	15,853	16,112	NA
Michigan	73,532	51,240	37,220	35,808	35,320	43,847
Minnesota	30,638	20,204	14,547	14,473	13,755	14,572
Mississippi	13,000	12,479	17,349	NA	18,965	NA
Missouri	17,749	11,162	12,462	13,878	13,142	12,678
Montana	4,937	3,509	2,167	2,102	2,176	2,423
Nebraska	8,245	5,476	5,090	7,095	8,959	5,832
Nevada	11,727	11,223	10,166	13,421	12,929	9,447
New Hampshire	R1,771	1,219	857	NA	871	NA
New Jersey	NA	NA	NA	32,663	33,936	31,639
New Mexico	11,763	8,914	9,670	10,465	10,814	8,579
New York	NA	NA	NA	NA	NA	NA
North Carolina	16,376	12,630	13,759	14,953	13,148	15,680
North Dakota	3,789	2,153	2,186	2,187	2,043	2,397
Ohio	73,111	50,727	36,525	36,235	NA	NA
Oklahoma	31,239	32,913	43,899	48,285	46,660	40,664
Oregon	18,653	15,418	14,253	14,248	13,185	10,671
Pennsylvania	50,045	35,333	NA	NA	28,412	31,355
Rhode Island	5,835	4,819	4,039	6,605	6,839	5,982
South Carolina	12,475	10,663	10,940	11,109	10,338	11,503
South Dakota	2,814	1,250	1,294	1,538	1,600	1,209
Tennessee	21,469	17,987	15,995	16,183	15,198	15,500
Texas	281,351	NA	317,245	348,252	380,407	320,879
Utah	12,689	10,621	7,336	6,535	6,659	6,949
Vermont	673	453	403	301	325	347
Virginia	NA	16,165	15,462	16,133	16,568	14,775
Washington	NA	NA	NA	NA	NA	NA
West Virginia	9,032	6,994	5,717	5,675	5,660	5,929
Wisconsin	33,445	22,491	17,723	17,737	16,504	18,699
Wyoming	6,622	5,539	4,519	4,536	4,661	5,103
Total	**R1,554,509**	**R1,333,899**	**R1,318,338**	**R1,419,288**	**R1,429,075**	**R1,327,643**

See footnotes at end of table.

Table 19. Natural Gas Deliveries to All Consumers, by State, 1997-1999

(Million Cubic Feet) — Continued

State	1998					1997
	May	April	March	February	January	Total
Alabama	26,426	26,483	31,953	31,998	35,514	292,094
Alaska	11,188	12,197	13,409	12,865	14,850	149,164
Arizona	7,574	10,115	12,000	12,168	14,725	112,590
Arkansas	20,424	21,483	24,783	23,126	26,153	244,644
California	140,354	150,887	151,877	190,770	203,541	1,850,248
Colorado	18,653	24,714	31,312	32,169	36,693	263,988
Connecticut	7,933	10,871	13,255	14,383	16,557	134,557
Delaware	2,924	3,298	4,029	3,776	4,203	46,480
District of Columbia	1,720	3,025	4,064	4,747	4,951	33,824
Florida	42,712	32,793	R35,481	R31,251	R36,753	477,601
Georgia	21,199	25,805	37,286	39,542	42,548	353,700
Hawaii	181	194	189	203	224	2,611
Idaho	4,186	5,684	6,585	7,284	8,295	61,707
Illinois	51,218	79,882	110,448	107,822	146,135	1,062,463
Indiana	32,766	R40,836	R60,183	57,103	68,716	546,337
Iowa	12,663	18,779	R28,070	25,934	33,073	243,476
Kansas	21,123	23,512	35,146	31,669	37,884	248,563
Kentucky	11,505	14,076	21,967	21,257	26,211	202,583
Louisiana	111,320	101,827	103,612	95,623	110,927	1,360,160
Maine	335	447	633	647	777	6,247
Maryland	10,440	14,048	20,680	21,403	23,731	204,319
Massachusetts	NA	29,252	36,404	38,346	42,821	377,911
Michigan	51,625	77,976	106,021	106,501	119,753	943,881
Minnesota	14,737	21,645	37,304	36,305	R47,109	334,572
Mississippi	NA	NA	NA	17,461	NA	206,749
Missouri	13,736	21,662	33,689	34,873	40,706	276,124
Montana	R2,760	4,240	5,477	5,313	7,480	54,114
Nebraska	6,933	9,827	13,611	13,802	16,321	128,031
Nevada	10,147	11,412	11,550	12,082	13,229	127,969
New Hampshire	1,226	1,776	R2,245	2,585	2,788	20,822
New Jersey	41,615	46,964	65,242	66,099	70,507	617,638
New Mexico	9,248	11,952	14,536	12,873	18,385	142,353
New York	NA	82,450	NA	NA	NA	1,220,113
North Carolina	14,761	17,721	23,352	25,906	28,061	206,940
North Dakota	2,958	3,759	4,760	4,840	5,735	42,826
Ohio	45,666	67,612	98,219	99,777	113,599	878,124
Oklahoma	33,009	32,165	43,105	40,820	44,667	452,453
Oregon	10,944	NA	NA	17,735	21,237	159,105
Pennsylvania	34,777	NA	72,422	75,456	75,438	652,219
Rhode Island	7,135	R7,744	9,414	9,401	10,920	82,100
South Carolina	11,680	12,349	15,673	17,097	18,065	150,962
South Dakota	2,114	2,244	3,588	3,464	4,445	32,289
Tennessee	17,809	21,904	31,153	28,238	R34,056	259,773
Texas	293,029	266,948	287,964	R257,144	289,099	3,566,640
Utah	7,578	12,236	14,719	16,672	17,848	137,605
Vermont	409	716	918	1,085	1,202	8,052
Virginia	14,601	R18,416	25,084	27,386	27,818	232,674
Washington	NA	NA	NA	NA	NA	222,391
West Virginia	6,672	9,625	12,819	12,904	13,678	119,512
Wisconsin	19,667	27,883	44,074	39,113	51,530	396,055
Wyoming	5,536	5,357	6,765	R7,653	NA	70,797
Total	**R1,361,796**	**R1,552,976**	**R1,943,426**	**R1,944,593**	**R2,224,574**	**20,018,151**

R Revised Data.
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, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers" and Form EIA-759, "Monthly Power Plant Report."

Table 20. Average City Gate Price, by State, 1997-1999

(Dollars per Thousand Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999				
				July	June	May	April	March
Alabama	2.81	3.21	3.84	3.33	3.53	2.86	2.70	2.65
Alaska	1.31	1.72	1.82	1.26	1.27	1.23	1.32	1.33
Arizona	2.45	2.56	3.16	3.26	3.16	3.03	2.39	2.18
Arkansas	NA	2.98	3.18	3.04	NA	NA	2.71	2.58
California	2.34	2.35	3.01	2.51	2.57	2.71	2.17	2.07
Colorado	NA	NA	2.97	NA	2.44	2.36	1.14	1.84
Connecticut	4.68	5.18	5.29	5.34	4.33	5.17	4.87	4.57
Delaware	3.61	2.70	3.79	4.43	5.10	3.91	3.12	3.33
District of Columbia	0.00	0.00	0.00	0.00	—	—	—	—
Florida	3.20	3.38	3.95	3.22	3.27	3.28	2.99	3.11
Georgia	NA	3.45	4.01	3.42	4.08	NA	3.11	3.33
Hawaii	4.93	5.49	6.58	5.61	5.45	4.72	4.68	4.53
Idaho	1.85	1.95	2.21	2.72	1.50	1.69	1.94	1.82
Illinois	2.72	2.86	3.15	3.23	3.17	3.62	2.63	2.51
Indiana	NA	NA	2.98	NA	NA	NA	NA	NA
Iowa	2.95	3.54	3.64	3.54	4.26	3.63	3.03	2.77
Kansas	NA	2.99	3.33	2.52	3.08	2.94	2.54	NA
Kentucky	3.16	3.30	3.70	3.06	2.89	3.63	3.73	2.79
Louisiana	2.22	2.43	2.98	2.24	2.27	2.41	2.14	2.16
Maine	NA	3.33	4.25	5.39	3.67	NA	5.48	3.05
Maryland	NA	3.91	3.90	NA	5.86	NA	NA	NA
Massachusetts	NA	4.08	3.80	NA	NA	5.21	NA	NA
Michigan	2.81	2.81	2.95	2.83	2.63	2.83	2.75	2.79
Minnesota	2.76	2.98	3.41	3.30	3.23	2.87	2.49	2.70
Mississippi	NA	NA	3.33	2.84	2.49	2.66	NA	R2.61
Missouri	3.09	3.33	3.69	5.14	4.90	4.56	3.43	2.75
Montana	2.48	2.43	3.26	2.08	2.20	1.37	2.39	2.98
Nebraska	3.03	3.39	3.62	3.25	3.24	3.45	2.94	2.90
Nevada	2.15	3.15	3.44	0.83	3.60	3.07	2.13	2.31
New Hampshire	3.61	NA	4.19	4.77	4.06	3.32	3.59	3.24
New Jersey	NA	3.59	4.11	NA	NA	NA	NA	1.20
New Mexico	2.04	2.10	2.53	2.06	2.13	2.06	1.81	1.98
New York	NA	NA	3.22	2.84	NA	NA	NA	NA
North Carolina	3.10	3.65	3.99	3.21	3.34	3.52	3.25	2.73
North Dakota	2.78	2.80	3.29	2.90	2.83	2.97	2.57	2.58
Ohio	4.88	4.73	5.47	5.07	5.81	6.71	7.73	4.43
Oklahoma	2.77	2.56	3.13	2.19	2.47	2.28	2.35	2.36
Oregon	2.73	NA	2.52	3.74	3.28	2.84	2.66	2.59
Pennsylvania	3.54	NA	4.02	5.13	4.35	4.61	3.62	3.26
Rhode Island	3.53	NA	4.41	5.41	4.73	4.46	4.09	3.06
South Carolina	3.27	3.49	3.70	3.63	3.80	3.85	3.43	2.86
South Dakota	3.40	3.39	3.68	4.03	3.72	4.21	3.37	3.25
Tennessee	NA	NA	3.21	3.25	2.75	2.81	NA	2.80
Texas	2.69	2.84	3.63	2.77	2.78	2.86	2.45	2.38
Utah	2.78	3.18	2.55	4.04	2.62	2.07	2.31	2.76
Vermont	2.96	2.71	2.18	2.63	3.12	3.34	3.07	2.92
Virginia	NA	3.75	4.15	7.13	5.27	NA	3.70	3.35
Washington	NA	NA	2.66	NA	NA	NA	NA	NA
West Virginia	NA	3.05	3.09	3.16	NA	4.15	NA	NA
Wisconsin	2.91	3.36	3.60	3.84	R4.12	R3.62	3.11	2.64
Wyoming	3.15	NA	3.05	3.51	2.53	3.01	3.40	2.91
Total	**2.92**	**3.12**	**3.54**	**3.12**	**R3.19**	**R3.23**	**2.89**	**R2.67**

See footnotes at end of table.

Table 20. Average City Gate Price, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1999		1998					
	February	January	Total	December	November	October	September	August
Alabama	2.79	2.62	3.26	3.16	3.26	3.64	3.43	3.82
Alaska	1.34	1.32	NA	1.73	NA	1.73	1.71	1.71
Arizona	2.19	2.17	2.55	2.31	2.67	2.61	2.76	2.84
Arkansas	3.40	2.69	2.94	3.13	3.03	2.93	1.88	2.38
California	2.25	2.23	2.38	2.76	2.49	2.22	1.95	2.46
Colorado	2.07	2.21	NA	2.74	2.18	2.24	NA	2.26
Connecticut	4.74	4.44	5.06	5.51	4.54	4.28	4.69	4.87
Delaware	3.68	3.63	3.01	4.10	3.83	3.75	3.76	2.70
District of Columbia	—	—	0.00	—	—	—	—	—
Florida	3.24	3.30	3.36	3.36	3.66	3.48	2.99	3.10
Georgia	3.47	4.61	3.51	4.34	3.24	3.08	3.37	3.45
Hawaii	4.47	5.07	5.33	5.17	5.14	4.95	5.12	5.06
Idaho	1.92	1.76	1.96	1.86	1.99	1.95	2.38	2.14
Illinois	2.59	2.49	2.75	2.74	2.65	2.43	2.24	2.49
Indiana	2.26	2.11	NA	R2.43	NA	NA	NA	2.53
Iowa	3.02	2.62	3.48	2.79	3.05	4.98	4.00	4.29
Kansas	NA	NA	R2.97	2.79	3.20	2.97	2.83	3.03
Kentucky	3.10	3.35	3.22	3.08	3.19	2.94	3.58	2.85
Louisiana	2.19	2.20	NA	2.48	2.20	NA	2.01	2.05
Maine	2.84	3.27	NA	R3.82	NA	3.37	2.69	3.21
Maryland	NA	2.82	NA	3.19	3.42	NA	NA	5.86
Massachusetts	NA	NA	NA	NA	3.49	4.46	5.82	5.75
Michigan	3.02	2.79	2.80	3.05	2.86	2.61	2.69	2.79
Minnesota	2.84	2.60	2.97	3.04	3.04	2.74	2.78	3.06
Mississippi	2.92	NA	NA	3.14	3.16	2.91	2.65	2.67
Missouri	2.89	2.49	3.32	2.77	3.12	4.06	4.50	4.61
Montana	2.70	2.75	2.39	2.40	2.57	2.29	2.20	1.87
Nebraska	3.11	2.90	3.23	3.10	2.84	3.03	2.90	3.01
Nevada	2.54	2.42	3.02	2.65	2.60	2.48	3.79	4.43
New Hampshire	3.56	3.73	NA	3.63	3.41	NA	3.34	3.80
New Jersey	NA	NA	NA	NA	NA	4.08	5.83	3.75
New Mexico	2.08	2.13	2.07	2.18	2.16	1.75	1.64	1.86
New York	NA	NA	NA	NA	NA	NA	R2.56	NA
North Carolina	3.00	3.11	3.49	3.09	3.16	3.46	3.20	3.43
North Dakota	2.84	2.85	2.81	3.01	3.10	3.05	2.11	2.49
Ohio	4.62	4.22	4.70	4.32	4.23	6.02	5.54	4.70
Oklahoma	5.21	2.41	2.55	2.54	2.52	2.16	2.73	2.61
Oregon	2.68	2.43	NA	2.50	2.61	2.72	2.93	3.60
Pennsylvania	3.41	3.15	NA	3.45	3.48	3.74	5.18	NA
Rhode Island	3.20	3.32	NA	1.25	4.04	4.02	4.23	4.66
South Carolina	3.09	3.14	R3.45	R3.24	3.34	3.49	3.48	3.57
South Dakota	3.37	3.18	3.23	2.69	3.07	2.76	3.91	4.68
Tennessee	2.72	2.85	NA	R3.28	3.57	3.06	2.42	2.77
Texas	2.61	2.95	2.74	3.03	2.85	2.37	2.09	2.35
Utah	3.11	2.86	3.22	3.58	3.07	2.94	3.37	3.48
Vermont	3.01	2.85	2.58	2.52	2.67	1.99	2.26	2.34
Virginia	2.97	3.32	3.69	3.25	3.31	3.80	4.52	5.14
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	4.00	6.98	3.14	3.79	3.55	3.48	2.58	2.43
Wisconsin	2.77	2.52	R3.32	2.84	3.35	3.24	R3.76	4.38
Wyoming	3.49	3.07	NA	4.14	3.22	2.88	2.46	2.93
Total	**2.94**	**2.86**	**R3.07**	**R3.07**	**3.00**	**3.00**	**R2.73**	**3.05**

See footnotes at end of table.

Table 20. Average City Gate Price, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1998							1997
	July	June	May	April	March	February	January	Total
Alabama	3.97	3.86	3.56	3.20	3.03	2.93	3.18	3.65
Alaska	1.64	1.67	1.68	1.71	1.73	1.72	1.75	1.81
Arizona	2.85	2.60	2.93	2.75	2.55	2.28	2.46	3.15
Arkansas	3.23	2.31	3.00	2.96	3.13	2.85	3.09	3.23
California	2.39	2.34	2.49	2.33	2.38	2.12	2.35	2.98
Colorado	2.09	2.43	2.46	NA	NA	NA	NA	2.92
Connecticut	5.14	4.74	5.08	5.89	4.87	5.24	5.23	5.11
Delaware	2.86	4.35	1.79	2.63	2.73	3.02	2.71	3.53
District of Columbia	—	—	—	—	—	—	—	—
Florida	3.14	2.96	3.15	3.92	3.25	3.20	3.81	3.97
Georgia	3.57	3.01	3.55	3.63	3.85	3.18	3.43	3.98
Hawaii	4.77	4.86	5.21	5.21	6.25	5.75	6.40	6.42
Idaho	2.81	2.18	1.94	1.96	1.81	1.94	1.89	2.12
Illinois	3.16	2.15	3.64	2.90	2.81	2.85	2.78	3.28
Indiana	NA	1.51	2.80	2.43	2.32	2.48	2.49	3.03
Iowa	4.11	1.98	4.17	3.33	3.42	3.33	3.80	4.06
Kansas	3.87	3.66	3.17	2.79	2.86	2.73	R2.94	3.47
Kentucky	3.57	3.12	3.33	3.99	3.23	3.09	3.22	3.83
Louisiana	2.45	2.19	2.36	2.29	2.53	2.25	2.81	3.04
Maine	5.39	R3.67	R2.53	3.25	3.25	3.25	3.25	3.84
Maryland	7.62	5.94	5.58	4.37	3.44	3.43	2.96	4.02
Massachusetts	7.56	6.87	5.44	3.98	3.64	2.89	3.40	3.85
Michigan	2.92	2.50	2.69	2.78	2.97	2.89	2.94	2.99
Minnesota	3.31	2.88	3.24	2.95	3.00	2.90	2.90	3.67
Mississippi	3.09	2.86	NA	NA	NA	2.99	NA	3.39
Missouri	5.12	4.87	4.47	3.72	2.97	2.99	2.96	3.75
Montana	2.51	2.08	2.22	2.29	2.50	2.41	2.71	3.16
Nebraska	3.65	2.98	3.73	3.29	2.98	2.70	4.71	4.24
Nevada	3.75	3.37	3.25	3.00	3.29	3.00	3.03	3.39
New Hampshire	4.63	NA	3.36	3.37	3.93	3.74	3.77	4.10
New Jersey	3.86	3.57	3.00	3.54	3.53	3.38	4.37	4.19
New Mexico	1.94	1.76	2.04	2.19	2.20	2.02	2.24	2.53
New York	R2.85	2.88	NA	3.01	R2.01	NA	R2.06	3.51
North Carolina	3.95	3.83	3.66	3.91	3.49	3.47	3.65	3.97
North Dakota	2.57	2.34	2.74	2.86	2.91	2.85	2.93	3.38
Ohio	5.16	4.75	5.04	4.89	4.87	4.27	4.82	5.18
Oklahoma	2.38	2.51	2.46	2.36	2.38	2.61	2.86	3.12
Oregon	4.13	3.22	2.78	NA	NA	2.31	2.53	2.58
Pennsylvania	R6.23	4.79	3.94	NA	5.26	3.64	3.68	4.09
Rhode Island	4.82	4.69	4.68	NA	R4.05	R4.03	3.93	4.49
South Carolina	4.09	3.81	3.90	3.66	3.34	3.05	3.37	3.81
South Dakota	4.27	2.91	4.42	4.37	2.60	3.66	3.22	3.65
Tennessee	3.12	3.39	3.40	6.62	2.42	3.84	NA	3.36
Texas	2.62	2.36	2.65	2.94	2.84	2.87	3.26	3.66
Utah	2.64	2.73	2.62	2.89	3.23	3.68	3.25	2.79
Vermont	2.60	2.69	2.82	2.74	2.92	2.66	2.59	2.33
Virginia	4.51	4.32	4.37	3.64	3.25	3.63	3.97	4.14
Washington	NA	NA	NA	NA	NA	NA	NA	2.62
West Virginia	2.76	2.91	3.43	3.61	2.58	3.15	3.34	3.17
Wisconsin	4.36	3.82	3.63	3.54	3.33	2.99	3.21	3.67
Wyoming	NA	2.53	NA	1.28	3.29	3.31	NA	3.11
Total	**R3.31**	**2.98**	**3.10**	**3.22**	**R3.08**	**3.08**	**R3.11**	**3.61**

R Revised Data.
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, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

Table 21

Table 21. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999				
				July	June	May	April	March
Alabama	7.96	7.65	8.28	11.38	10.98	9.83	7.83	7.03
Alaska	3.65	3.74	3.78	4.31	4.10	3.81	3.65	3.59
Arizona	8.75	8.01	7.38	12.26	11.03	9.55	8.75	8.57
Arkansas	6.60	6.69	6.52	9.65	R9.45	R8.25	6.70	6.16
California	6.48	6.93	6.47	7.04	6.82	6.22	5.98	6.22
Colorado	NA	NA	4.56	NA	6.13	5.12	5.00	4.86
Connecticut	10.25	10.41	10.30	11.67	11.86	11.31	10.29	10.08
Delaware	8.40	8.51	8.09	10.58	10.97	9.32	8.39	8.05
District of Columbia	NA	NA	9.14	NA	8.24	8.95	7.96	7.76
Florida	11.38	11.25	11.29	13.77	13.34	12.59	11.46	10.58
Georgia	NA	7.28	7.79	11.45	10.16	NA	4.12	2.44
Hawaii	18.46	19.46	22.20	18.71	18.56	18.60	18.04	18.15
Idaho	5.24	5.27	5.01	6.21	5.83	5.46	5.31	5.10
Illinois	5.08	5.46	5.99	8.85	8.12	7.66	5.27	4.63
Indiana	NA	NA	6.47	6.92	R6.76	NA	NA	NA
Iowa	5.66	5.77	5.80	9.40	11.36	7.77	6.00	5.26
Kansas	NA	5.99	6.34	8.77	7.71	6.58	5.64	NA
Kentucky	5.37	5.82	6.23	8.18	7.75	6.75	5.46	4.82
Louisiana	6.21	6.30	6.97	8.55	7.75	7.34	6.19	5.98
Maine	7.54	8.14	8.52	9.11	8.33	8.66	7.85	7.38
Maryland	NA	8.02	8.21	NA	11.87	NA	7.98	NA
Massachusetts	NA	NA	9.30	NA	NA	NA	NA	NA
Michigan	5.00	5.07	5.10	7.68	6.46	5.72	5.10	4.78
Minnesota	5.30	5.41	5.64	8.04	7.19	6.26	5.21	5.08
Mississippi	NA	NA	6.19	7.22	7.12	6.92	NA	5.20
Missouri	5.92	6.30	6.36	9.85	6.09	7.08	6.06	5.41
Montana	4.98	NA	4.74	6.58	5.99	4.66	4.95	4.94
Nebraska	4.70	5.19	5.43	7.13	6.76	5.39	4.70	4.47
Nevada	7.06	6.95	5.99	8.86	8.15	7.39	7.00	6.94
New Hampshire	7.36	8.17	8.46	8.68	7.88	6.36	5.67	8.23
New Jersey	NA	7.52	7.84	NA	NA	NA	NA	NA
New Mexico	4.07	5.47	6.39	9.96	10.62	9.45	4.97	3.09
New York	NA	NA	9.48	11.31	NA	NA	NA	NA
North Carolina	7.83	8.33	9.03	11.74	12.98	8.76	7.92	6.20
North Dakota	4.91	4.99	4.57	7.54	7.23	5.19	4.71	4.76
Ohio	5.97	NA	6.79	8.41	7.89	6.83	5.83	5.63
Oklahoma	5.26	5.87	6.14	8.80	3.63	6.83	5.59	5.33
Oregon	7.05	NA	6.13	10.50	7.75	7.26	7.04	6.91
Pennsylvania	8.13	NA	8.28	11.40	10.69	9.00	7.64	7.82
Rhode Island	9.23	NA	9.47	11.52	11.36	9.79	9.48	8.88
South Carolina	8.43	8.24	8.50	10.20	9.89	8.48	8.17	7.81
South Dakota	5.42	5.53	5.42	8.69	8.46	6.48	5.43	5.00
Tennessee	NA	NA	6.86	8.86	9.32	NA	NA	6.37
Texas	5.62	6.13	6.18	7.40	7.86	6.91	6.00	5.18
Utah	5.23	5.60	4.99	5.54	5.78	4.83	4.19	5.59
Vermont	6.82	6.52	6.27	9.33	8.42	7.41	6.83	6.68
Virginia	NA	8.44	8.37	13.85	13.36	NA	8.72	7.34
Washington	NA	NA	5.56	NA	NA	NA	NA	NA
West Virginia	NA	NA	7.00	10.66	NA	NA	NA	NA
Wisconsin	6.15	6.13	6.36	7.14	6.50	5.81	6.10	6.05
Wyoming	5.16	NA	4.02	6.74	5.94	5.08	5.02	5.18
Total	**6.38**	**6.72**	**6.85**	**8.44**	**R7.89**	**R7.08**	**6.31**	**6.02**

See footnotes at end of table.

Table 21. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1999		1998					
	February	January	Total	December	November	October	September	August
Alabama	8.29	7.13	8.15	8.99	9.94	10.92	10.71	10.78
Alaska	3.53	3.53	3.67	3.51	3.70	3.74	3.01	3.75
Arizona	8.17	8.03	8.56	8.39	9.91	12.07	13.01	13.19
Arkansas	6.94	5.66	6.86	6.83	6.79	8.13	8.81	8.99
California	6.54	6.82	6.93	6.89	6.80	6.88	7.01	7.21
Colorado	4.75	4.68	NA	4.86	5.18	5.75	8.36	7.44
Connecticut	10.18	9.71	10.59	10.96	10.51	11.13	11.73	11.80
Delaware	8.10	8.05	8.86	8.56	9.38	11.62	12.78	12.61
District of Columbia	8.25	8.61	NA	8.96	9.29	10.65	11.22	8.59
Florida	11.10	10.29	R11.72	R11.97	12.19	14.12	13.56	13.59
Georgia	2.38	2.12	6.74	2.41	3.43	7.99	15.53	15.94
Hawaii	18.34	18.79	19.31	18.88	19.41	19.27	19.41	18.31
Idaho	5.13	5.03	5.34	5.16	5.43	5.80	6.55	6.71
Illinois	4.62	4.46	5.46	4.77	5.01	5.97	8.06	8.16
Indiana	NA	5.36	NA	NA	5.77	6.67	R8.64	R9.43
Iowa	5.07	4.79	5.91	4.91	5.69	7.32	10.97	10.78
Kansas	NA	NA	6.08	5.60	5.98	7.54	8.07	7.98
Kentucky	5.27	5.08	5.94	5.24	5.67	7.83	9.19	9.75
Louisiana	5.86	5.56	NA	7.00	7.93	NA	8.91	8.84
Maine	7.34	7.00	8.00	7.59	7.40	7.61	8.88	9.13
Maryland	NA	7.37	NA	8.13	7.86	NA	NA	11.52
Massachusetts	9.19	9.39	NA	NA	NA	9.55	NA	11.36
Michigan	4.76	4.68	5.12	4.82	4.80	5.38	6.96	7.35
Minnesota	5.06	4.96	5.47	5.21	5.30	6.01	7.04	7.32
Mississippi	R5.94	R4.84	NA	6.22	4.33	7.48	7.55	7.59
Missouri	5.70	5.71	6.56	6.19	6.62	8.84	9.86	10.94
Montana	4.93	4.75	NA	5.05	5.27	5.90	7.04	6.89
Nebraska	4.38	4.37	5.19	4.63	4.77	5.74	6.91	7.12
Nevada	6.75	6.70	7.11	6.74	7.14	8.00	9.25	9.27
New Hampshire	7.60	7.44	NA	8.09	8.27	7.39	9.03	NA
New Jersey	NA	NA	NA	NA	NA	9.33	NA	9.93
New Mexico	4.25	2.63	5.20	3.21	4.22	7.96	10.19	10.57
New York	NA	NA	NA	NA	NA	NA	NA	13.55
North Carolina	8.40	7.56	8.71	9.48	8.33	11.73	12.56	13.29
North Dakota	4.67	4.62	5.19	5.04	5.08	5.69	7.69	9.87
Ohio	5.69	5.87	NA	6.08	6.15	7.82	9.30	9.89
Oklahoma	5.48	4.45	6.10	5.66	6.31	8.64	9.50	9.33
Oregon	6.79	6.68	NA	6.72	6.88	7.62	8.78	9.04
Pennsylvania	7.86	7.88	NA	7.89	8.18	9.23	NA	NA
Rhode Island	8.90	8.71	NA	9.39	9.79	10.78	12.15	12.14
South Carolina	9.14	8.25	8.50	9.16	8.96	9.57	10.10	10.32
South Dakota	5.09	4.89	5.59	4.99	5.35	6.34	8.38	8.63
Tennessee	6.05	5.97	NA	6.30	6.62	8.09	8.51	9.03
Texas	5.20	4.97	6.31	5.52	6.58	8.16	8.79	8.97
Utah	5.33	5.51	5.61	5.66	5.77	4.78	6.13	7.01
Vermont	6.29	6.64	6.54	6.38	6.64	7.46	5.12	8.77
Virginia	7.98	8.01	8.66	8.18	8.52	10.97	12.22	12.28
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	6.96	6.89	NA	7.13	NA	7.64	9.66	10.37
Wisconsin	6.28	6.07	6.08	5.97	6.06	5.42	6.49	6.66
Wyoming	5.03	4.98	NA	5.10	NA	5.26	6.85	7.30
Total	**6.25**	**R6.02**	**6.82**	**6.36**	**6.60**	**7.55**	**R8.91**	**R9.17**

See footnotes at end of table.

Table 21

Table 21. Average Price of Natural Gas Delivered to Residential Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1998							1997
	July	June	May	April	March	February	January	Total
Alabama	11.13	10.91	8.99	7.73	7.00	7.10	7.41	8.35
Alaska	4.71	4.02	3.83	3.66	3.71	3.65	3.56	3.77
Arizona	12.24	11.02	9.58	8.14	7.39	7.40	7.23	7.83
Arkansas	9.03	8.72	7.59	6.42	6.41	6.50	6.46	6.67
California	7.07	7.32	7.01	6.80	6.78	6.49	7.28	6.81
Colorado	NA	R15.98	5.24	4.74	4.49	4.57	4.50	4.81
Connecticut	11.62	11.11	11.57	9.78	10.18	10.33	10.36	10.33
Delaware	11.67	10.99	9.44	8.51	8.15	8.08	8.07	8.36
District of Columbia	NA	8.50	9.70	8.86	8.62	8.44	9.01	9.39
Florida	13.79	13.30	13.08	11.34	10.51	10.47	10.33	11.90
Georgia	16.76	11.73	13.50	7.09	5.78	6.15	6.40	7.41
Hawaii	18.60	18.75	19.02	19.21	19.87	20.46	19.99	21.74
Idaho	6.26	5.86	5.59	5.38	5.18	5.14	5.01	5.12
Illinois	8.69	8.09	7.94	5.79	4.90	4.91	4.88	5.95
Indiana	NA	R8.72	8.81	R7.11	R6.09	6.22	6.12	6.37
Iowa	11.56	8.41	7.80	6.36	4.79	4.97	5.49	6.17
Kansas	7.88	7.49	6.41	5.92	5.76	5.77	5.81	6.42
Kentucky	7.87	8.15	7.15	6.56	5.25	5.47	5.48	6.37
Louisiana	8.85	8.36	8.95	6.46	5.28	5.60	6.10	7.16
Maine	9.11	8.33	8.66	8.75	7.90	7.90	7.90	8.47
Maryland	12.03	10.82	9.82	8.36	7.53	7.36	7.38	8.36
Massachusetts	10.45	NA	NA	9.64	9.37	9.26	9.19	9.43
Michigan	7.12	6.23	5.85	5.11	4.69	4.92	4.85	5.20
Minnesota	7.57	7.15	6.45	5.60	5.18	5.11	5.07	5.76
Mississippi	7.60	7.32	6.44	5.88	NA	5.39	NA	6.35
Missouri	9.76	8.84	7.40	6.14	5.58	5.86	6.30	6.61
Montana	6.70	6.13	NA	5.15	4.97	5.03	4.87	5.05
Nebraska	6.87	6.42	5.99	5.09	4.74	4.93	5.28	5.69
Nevada	8.69	7.74	7.30	6.90	6.80	6.79	6.53	6.27
New Hampshire	9.15	8.20	7.07	6.50	R9.41	8.38	8.30	8.48
New Jersey	9.63	9.32	6.80	7.71	7.39	7.23	7.41	7.93
New Mexico	10.89	31.23	9.69	6.26	4.55	5.23	3.72	5.87
New York	7.01	NA	NA	9.26	8.54	8.62	8.75	9.73
North Carolina	12.05	11.81	9.29	7.91	7.77	7.93	8.33	8.98
North Dakota	7.09	7.03	5.96	5.12	4.79	4.68	4.52	4.99
Ohio	NA	7.35	6.56	6.22	5.97	5.75	6.25	6.75
Oklahoma	8.91	8.37	6.84	5.56	5.43	5.73	5.56	6.23
Oregon	8.33	7.48	7.19	NA	NA	6.44	6.09	6.21
Pennsylvania	11.22	10.51	9.02	NA	8.05	8.03	9.60	8.33
Rhode Island	11.94	10.94	9.67	NA	9.03	8.86	8.83	9.61
South Carolina	10.18	9.76	8.44	7.88	8.02	8.27	8.17	8.37
South Dakota	8.90	6.54	6.88	5.88	5.31	5.07	5.01	5.75
Tennessee	8.68	8.15	6.95	6.42	5.96	6.31	NA	6.91
Texas	8.86	7.94	7.31	6.29	5.14	6.58	5.42	6.32
Utah	6.70	5.39	5.72	4.85	5.51	5.73	5.83	5.13
Vermont	8.91	8.08	7.28	6.45	6.30	6.23	6.19	6.41
Virginia	12.22	11.73	10.14	8.28	7.75	8.05	8.11	8.60
Washington	NA	NA	NA	NA	NA	NA	NA	5.64
West Virginia	10.50	9.65	NA	7.55	6.85	6.78	6.81	6.81
Wisconsin	7.16	6.50	6.29	6.02	6.28	5.98	5.96	6.43
Wyoming	NA	5.99	5.79	5.25	5.13	5.14	NA	4.58
Total	**R8.49**	**R8.39**	**7.60**	**R6.79**	**6.27**	**6.40**	**6.45**	**6.94**

R Revised Data.
NA Not Available.

Notes: Data for 1997 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, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

Table 22. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999				
				July	June	May	April	March
Alabama	6.55	6.60	7.01	7.22	7.08	6.86	6.26	6.10
Alaska	2.22	2.34	2.43	1.83	1.76	1.95	2.28	2.34
Arizona	6.12	5.80	5.13	6.13	6.05	6.05	6.11	6.12
Arkansas	NA	5.16	5.16	5.69	NA	NA	5.24	4.85
California	5.63	6.43	6.43	5.68	5.43	5.24	5.57	5.17
Colorado	NA	NA	3.88	NA	4.38	4.18	NA	4.14
Connecticut	6.58	7.03	7.37	5.12	5.39	6.65	6.68	6.93
Delaware	6.87	6.92	6.55	8.29	7.89	7.36	6.82	6.69
District of Columbia	NA	7.33	7.98	NA	6.84	6.64	6.70	6.92
Florida	6.31	6.73	6.74	6.47	6.26	6.29	6.19	6.22
Georgia	NA	6.32	6.74	6.55	5.99	NA	3.43	2.17
Hawaii	13.60	14.39	15.05	14.46	14.00	13.28	13.08	13.19
Idaho	4.63	4.55	4.45	4.89	4.92	4.85	4.83	4.49
Illinois	4.84	4.93	5.42	7.98	7.15	6.61	4.83	4.46
Indiana	NA	NA	5.58	NA	NA	NA	NA	NA
Iowa	4.51	4.54	4.95	6.26	6.44	5.51	4.67	4.11
Kansas	NA	5.07	5.41	5.48	5.85	5.49	4.94	NA
Kentucky	4.89	5.51	5.74	5.76	5.59	4.36	5.03	4.39
Louisiana	5.36	5.48	6.16	5.79	5.53	5.51	5.24	5.29
Maine	6.76	7.38	7.81	6.81	6.70	R7.20	7.01	6.81
Maryland	NA	6.51	6.53	NA	8.29	NA	7.03	NA
Massachusetts	NA	7.35	7.49	NA	R6.12	R6.24	R7.79	R7.72
Michigan	4.80	4.83	4.93	5.86	5.67	5.14	4.94	4.69
Minnesota	4.27	4.48	4.79	4.50	4.61	4.38	4.01	4.20
Mississippi	NA	4.65	5.21	4.45	4.44	NA	NA	4.53
Missouri	5.27	5.65	5.80	5.68	3.63	5.22	5.19	5.06
Montana	4.93	5.05	4.74	5.99	5.63	4.60	4.87	4.90
Nebraska	3.99	4.79	4.85	3.84	3.94	3.88	3.77	3.98
Nevada	6.02	5.76	4.97	6.49	6.40	6.09	6.10	5.89
New Hampshire	NA	NA	7.81	6.16	5.98	NA	5.40	6.97
New Jersey	NA	4.17	6.33	NA	NA	NA	NA	NA
New Mexico	3.42	4.22	4.21	4.41	5.59	5.25	4.08	3.53
New York	NA	NA	6.75	3.67	NA	NA	NA	NA
North Carolina	6.07	6.58	7.18	6.13	6.12	5.85	5.62	5.87
North Dakota	4.15	4.20	4.04	5.07	4.98	3.94	3.94	4.09
Ohio	5.53	NA	6.33	6.60	6.55	5.82	5.37	5.26
Oklahoma	4.88	5.30	5.43	5.43	5.62	4.98	4.70	5.09
Oregon	5.61	NA	4.58	5.83	5.75	5.65	5.65	5.63
Pennsylvania	8.97	NA	7.49	7.83	8.96	7.05	19.98	7.03
Rhode Island	7.94	8.00	8.21	8.91	8.70	8.45	8.03	7.73
South Carolina	6.47	6.55	7.13	5.90	6.00	6.04	6.45	6.40
South Dakota	4.22	4.41	4.44	5.29	5.37	4.91	4.23	3.90
Tennessee	NA	NA	6.03	5.79	5.48	5.39	NA	5.68
Texas	4.24	4.73	4.89	4.02	4.37	4.12	4.36	3.96
Utah	3.94	4.26	3.66	4.19	3.85	3.31	3.24	4.25
Vermont	5.36	5.22	5.24	5.72	5.64	5.57	5.50	5.49
Virginia	NA	6.06	6.45	6.22	5.79	NA	5.82	5.67
Washington	NA	NA	4.64	NA	NA	NA	NA	NA
West Virginia	NA	6.50	6.27	6.76	NA	R6.86	R6.06	6.19
Wisconsin	4.82	4.97	5.29	4.68	4.53	4.22	4.43	4.78
Wyoming	4.50	NA	3.43	4.47	4.53	4.51	4.44	4.51
Total	**5.20**	**5.55**	**5.84**	**5.24**	**R5.23**	**R5.15**	**R5.69**	**5.03**

See footnotes at end of table.

Table 22. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1999		1998					
	February	January	Total	December	November	October	September	August
Alabama	6.93	6.33	6.75	7.18	7.53	7.06	6.92	6.96
Alaska	2.38	2.44	2.41	2.45	2.47	2.32	3.22	2.15
Arizona	6.18	6.15	5.95	6.25	6.38	6.45	5.78	6.30
Arkansas	5.27	4.70	5.15	5.27	5.16	4.90	5.02	4.99
California	6.28	5.82	6.26	6.28	5.98	5.64	5.83	5.88
Colorado	4.12	4.16	NA	4.08	3.83	4.01	4.44	4.16
Connecticut	7.03	6.63	6.85	7.54	6.74	5.49	5.44	5.53
Delaware	6.59	6.68	7.07	6.93	6.93	8.05	8.72	8.40
District of Columbia	7.06	7.53	7.39	7.71	7.69	7.49	7.35	7.14
Florida	6.38	6.41	6.59	6.39	6.47	6.38	6.27	6.22
Georgia	2.35	3.78	5.93	2.75	3.34	4.90	9.08	8.96
Hawaii	13.41	13.79	14.15	13.81	14.00	14.04	16.65	10.88
Idaho	4.59	4.46	4.62	4.58	4.83	4.91	4.94	4.88
Illinois	4.48	4.47	4.97	4.68	4.84	5.20	6.08	5.99
Indiana	4.52	4.39	NA	NA	4.85	5.28	NA	R6.51
Iowa	4.30	4.12	4.56	3.95	4.41	5.02	6.38	6.27
Kansas	NA	NA	5.14	5.24	5.84	5.45	5.64	4.42
Kentucky	4.92	5.09	5.41	5.06	5.05	5.58	5.69	5.69
Louisiana	5.22	5.29	R5.65	6.06	6.19	R6.10	5.82	5.68
Maine	6.79	6.48	NA	6.96	NA	6.55	6.89	6.89
Maryland	NA	6.94	6.63	7.03	6.07	7.74	7.27	7.40
Massachusetts	NA	8.08	R7.23	R7.68	7.10	6.06	R6.19	6.45
Michigan	4.68	4.65	4.84	4.72	4.64	5.05	5.35	5.70
Minnesota	4.25	4.33	4.40	4.38	4.27	4.23	3.93	4.44
Mississippi	4.23	NA	4.47	4.69	3.52	4.52	3.64	4.11
Missouri	5.43	5.55	5.66	5.60	5.50	6.17	5.71	6.04
Montana	4.91	4.80	R5.17	5.05	5.24	5.73	6.23	5.86
Nebraska	4.00	4.14	4.53	4.01	3.97	3.72	3.52	3.73
Nevada	5.92	5.85	5.94	5.88	6.33	6.61	6.92	6.90
New Hampshire	7.15	6.89	NA	7.38	R7.30	5.94	6.40	NA
New Jersey	NA	NA	NA	NA	NA	NA	NA	2.87
New Mexico	3.40	2.45	3.95	3.05	3.34	4.11	4.49	4.71
New York	NA	NA	NA	NA	NA	NA	NA	4.68
North Carolina	6.44	6.25	6.62	7.15	6.89	6.23	6.26	6.28
North Dakota	4.04	4.19	4.33	4.29	4.31	4.39	4.73	7.28
Ohio	5.33	5.67	NA	5.73	5.74	6.97	7.19	7.81
Oklahoma	5.23	4.49	5.23	4.23	6.24	5.34	5.39	5.34
Oregon	5.56	5.51	NA	6.01	4.43	5.53	5.55	5.89
Pennsylvania	7.25	7.30	NA	6.75	6.63	7.33	7.92	NA
Rhode Island	7.75	7.74	R8.12	8.02	8.11	8.65	9.14	9.35
South Carolina	6.94	6.75	6.45	6.73	6.58	5.73	5.89	5.91
South Dakota	4.16	3.92	4.42	3.97	4.24	4.84	5.65	5.60
Tennessee	5.72	5.77	NA	5.94	5.97	6.65	5.79	6.24
Texas	4.28	4.44	4.58	4.43	4.40	4.33	4.33	4.19
Utah	4.14	4.20	4.35	4.54	4.69	4.00	4.43	4.81
Vermont	5.23	5.12	5.08	4.72	4.95	4.81	4.63	5.17
Virginia	6.04	5.90	R6.10	6.14	6.19	6.44	6.06	6.21
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	6.23	6.30	6.45	6.18	6.40	6.46	6.39	6.82
Wisconsin	4.90	5.09	4.89	4.94	4.97	4.08	4.64	4.37
Wyoming	4.47	4.55	NA	2.76	NA	4.70	4.69	5.84
Total	**5.18**	**5.13**	**5.47**	**5.22**	**R5.25**	**5.33**	**5.56**	**R5.48**

See footnotes at end of table.

Table 22. Average Price of Natural Gas Sold to Commercial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1998							1997
	July	June	May	April	March	February	January	Total
Alabama	7.25	7.24	6.80	6.52	6.27	6.47	6.65	6.98
Alaska	2.08	2.05	2.24	2.31	2.39	2.45	2.49	2.44
Arizona	6.25	6.19	6.14	5.79	5.50	5.59	5.65	5.31
Arkansas	5.29	5.16	5.31	5.19	5.04	5.19	5.14	5.23
California	5.50	5.91	5.68	6.65	7.06	6.75	6.69	6.41
Colorado	NA	4.44	4.21	4.05	4.04	4.07	4.18	4.06
Connecticut	4.66	5.88	7.03	6.86	7.42	7.28	7.73	7.23
Delaware	8.14	7.81	7.33	6.85	6.75	6.72	6.70	6.70
District of Columbia	6.98	6.97	6.99	7.09	7.46	7.34	7.65	7.37
Florida	6.55	6.70	6.83	6.71	6.69	6.72	6.83	6.85
Georgia	9.40	7.59	7.99	5.53	5.51	5.86	6.16	6.43
Hawaii	13.40	13.53	14.07	14.19	14.48	15.61	15.21	15.77
Idaho	4.90	4.83	4.77	4.76	4.46	4.40	4.41	4.49
Illinois	8.15	5.72	6.81	5.21	4.70	4.25	4.76	5.43
Indiana	NA	NA	6.35	R6.09	5.44	5.97	5.52	5.44
Iowa	7.53	4.17	5.48	5.19	3.72	4.08	4.71	5.18
Kansas	5.45	5.65	5.63	6.08	3.85	5.39	5.41	5.38
Kentucky	6.14	5.57	5.33	5.67	5.44	5.63	5.32	5.79
Louisiana	5.85	5.58	6.10	5.49	4.94	5.19	5.73	6.22
Maine	6.81	6.70	7.20	7.89	7.41	7.41	7.41	7.70
Maryland	7.88	7.02	7.35	7.06	6.16	6.08	6.43	6.52
Massachusetts	6.22	6.55	6.86	7.65	7.46	7.73	7.39	7.34
Michigan	5.88	5.38	5.21	4.92	4.58	4.76	4.77	5.00
Minnesota	4.66	4.46	4.63	4.53	4.41	4.42	4.50	4.80
Mississippi	4.25	4.23	4.67	4.90	4.69	4.35	5.11	5.26
Missouri	5.93	5.65	5.52	5.37	5.27	5.63	6.08	5.88
Montana	6.06	5.84	R5.55	5.05	4.91	4.97	4.85	4.83
Nebraska	3.91	3.91	4.25	4.42	6.13	4.44	4.66	4.88
Nevada	6.08	5.91	5.75	5.76	5.69	5.76	5.63	5.08
New Hampshire	6.59	NA	5.98	6.18	7.64	7.57	7.60	7.63
New Jersey	3.96	3.74	3.84	4.17	3.83	4.13	4.85	5.88
New Mexico	4.88	6.66	5.15	4.42	3.91	4.35	3.66	4.01
New York	5.67	5.01	NA	6.20	NA	NA	NA	6.49
North Carolina	6.45	6.16	6.18	6.09	6.45	6.72	7.05	7.00
North Dakota	4.72	4.86	4.54	4.16	4.17	4.13	4.03	4.35
Ohio	NA	6.30	5.76	5.79	5.62	5.43	5.96	6.23
Oklahoma	5.39	5.24	4.97	4.57	5.27	5.56	5.53	5.34
Oregon	5.75	5.52	5.51	NA	NA	5.17	4.92	4.63
Pennsylvania	8.03	8.25	8.23	NA	7.33	7.36	7.14	7.35
Rhode Island	8.98	8.88	8.37	R8.10	7.88	7.78	7.75	8.21
South Carolina	5.94	6.00	5.98	6.40	6.55	6.91	6.92	6.74
South Dakota	6.23	4.33	5.07	4.69	4.37	4.10	4.12	4.71
Tennessee	5.98	5.95	5.83	5.68	5.55	6.37	NA	6.11
Texas	4.30	4.12	5.38	4.75	4.32	5.37	4.66	4.91
Utah	4.37	3.93	3.93	3.76	4.36	4.35	4.54	3.92
Vermont	4.91	5.30	5.98	5.14	5.10	5.23	5.21	5.18
Virginia	5.76	6.14	5.44	R5.84	5.82	6.33	6.41	6.45
Washington	NA	NA	NA	NA	NA	NA	NA	4.73
West Virginia	7.21	7.14	7.59	6.60	6.32	6.31	6.28	6.34
Wisconsin	4.82	4.44	4.16	4.75	5.24	4.96	5.12	5.35
Wyoming	NA	5.06	4.77	4.62	4.55	4.56	NA	3.93
Total	**5.65**	**5.51**	**5.69**	**R5.59**	**5.38**	**5.56**	**5.59**	**5.79**

R Revised Data.
NA Not Available.

Notes: Data for 1997 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 25 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries. In 1996, consumption of natural gas for agricultural use is classified as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

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

Table 23

Table 23. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999				
				July	June	May	April	March
Alabama	3.19	3.10	3.63	3.06	3.15	3.30	3.24	3.05
Alaska	1.21	1.43	1.53	1.27	1.24	1.21	1.18	1.17
Arizona	3.38	3.48	3.88	3.26	3.62	3.11	3.26	3.71
Arkansas	NA	3.54	3.60	3.64	NA	3.38	3.35	3.42
California	NA	3.80	4.14	3.48	3.34	2.86	3.12	3.09
Colorado	NA	2.44	3.48	NA	2.41	2.46	2.28	2.16
Connecticut	4.06	4.53	4.87	3.55	3.70	3.71	3.98	4.23
Delaware	4.01	4.21	4.31	4.16	4.11	3.48	4.27	4.00
District of Columbia	0.00	0.00	0.00	—	—	—	—	—
Florida	3.88	4.41	4.26	3.99	4.11	3.92	3.82	3.66
Georgia	NA	5.20	4.60	4.12	3.46	NA	3.39	2.76
Hawaii	8.22	0.00	0.00	—	—	—	—	—
Idaho [a]	3.25	3.08	2.78	3.59	3.21	3.22	3.26	3.14
Illinois	3.68	4.09	3.96	4.17	4.03	3.85	3.17	3.50
Indiana	NA	4.55	4.53	NA	NA	NA	NA	NA
Iowa	3.50	2.99	3.92	2.30	6.02	3.52	3.27	3.33
Kansas	NA	3.26	3.23	2.52	2.51	NA	3.16	3.10
Kentucky	3.09	3.91	4.10	2.99	2.90	3.09	2.90	3.10
Louisiana	2.03	2.41	2.82	2.28	2.08	2.00	1.89	1.88
Maine	5.09	5.46	5.66	4.17	4.10	4.61	6.11	5.76
Maryland	NA	5.81	3.25	5.74	6.00	NA	3.80	[R]4.25
Massachusetts	NA	6.17	6.04	NA	NA	5.46	NA	NA
Michigan	3.85	3.94	3.99	5.11	4.46	3.83	3.69	3.76
Minnesota	2.70	2.99	3.19	2.87	2.27	3.07	2.52	2.67
Mississippi	NA	NA	3.46	3.09	3.09	3.22	NA	2.99
Missouri	NA	4.58	4.72	3.69	3.91	4.00	3.97	4.00
Montana	4.44	5.09	4.75	5.67	5.99	4.33	4.79	4.79
Nebraska	3.20	3.31	3.73	3.16	3.41	3.14	3.05	3.21
Nevada	4.55	5.92	7.16	4.71	4.76	4.62	4.51	4.45
New Hampshire	4.24	4.74	4.95	3.49	3.69	1.79	2.06	6.42
New Jersey	NA	3.41	4.04	NA	NA	NA	NA	NA
New Mexico	NA	3.46	3.15	3.39	3.35	3.36	NA	3.60
New York	NA	NA	5.30	4.85	4.83	NA	NA	NA
North Carolina	3.33	4.04	4.74	3.03	3.22	3.07	3.09	3.79
North Dakota	2.56	3.06	2.88	2.73	2.59	2.77	2.37	2.47
Ohio	5.07	NA	5.01	6.61	5.45	3.45	5.17	4.90
Oklahoma	3.45	3.81	4.21	3.48	3.72	3.25	3.28	3.50
Oregon	2.44	NA	3.06	3.93	3.94	3.96	3.89	0.81
Pennsylvania	4.23	4.40	4.78	3.77	3.80	3.93	4.21	4.42
Rhode Island	3.91	4.01	2.04	3.33	3.29	3.74	3.52	4.32
South Carolina	3.03	3.42	3.68	3.10	3.22	3.07	2.79	2.93
South Dakota	3.17	3.34	3.95	3.53	3.54	3.26	3.02	3.03
Tennessee	NA	3.80	4.08	2.69	3.31	3.19	NA	3.35
Texas	NA	2.51	2.70	2.53	2.42	NA	2.10	1.91
Utah	2.99	3.02	2.36	2.85	2.86	2.92	2.99	3.31
Vermont	2.80	2.91	3.09	2.83	2.82	2.80	2.74	2.72
Virginia	NA	4.28	4.75	3.39	3.49	NA	3.13	3.76
Washington	NA	NA	3.30	NA	NA	NA	NA	NA
West Virginia	NA	2.88	2.92	2.84	NA	[R]2.80	NA	NA
Wisconsin	3.73	4.01	4.03	3.30	3.60	3.43	3.87	3.73
Wyoming	NA	3.30	3.47	NA	3.20	3.66	4.05	3.87
Total	**2.80**	**3.32**	**3.56**	**2.68**	**2.67**	**2.65**	**2.80**	**2.77**

See footnotes at end of table.

Table 23. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1999		1998					
	February	January	Total	December	November	October	September	August
Alabama	3.34	3.24	3.08	3.35	3.10	3.06	2.85	2.95
Alaska	1.18	1.20	NA	NA	NA	NA	1.21	NA
Arizona	3.42	3.48	3.39	3.52	3.37	3.11	3.22	3.20
Arkansas	3.48	3.40	3.44	3.76	3.32	3.24	3.04	3.09
California	NA	4.02	3.59	3.45	3.48	2.77	3.46	3.28
Colorado	2.32	2.20	R2.35	2.31	2.41	2.12	1.90	2.27
Connecticut	4.39	4.49	4.32	4.55	4.19	3.85	3.46	3.63
Delaware	3.93	4.33	4.13	3.71	3.85	3.75	4.39	5.12
District of Columbia	—	—	0.00	—	—	—	—	—
Florida	3.93	3.81	4.30	3.97	4.18	4.47	4.05	4.02
Georgia	2.83	2.63	4.75	2.61	3.01	3.86	4.51	5.06
Hawaii	—	—	0.00	—	—	—	—	—
Idaho [a]	3.23	3.19	3.09	3.08	3.16	3.02	2.94	3.32
Illinois	3.71	3.81	3.93	3.78	3.61	3.32	3.71	4.38
Indiana	3.01	NA	4.39	4.21	3.89	3.38	3.91	5.52
Iowa	3.52	3.32	3.19	3.28	3.51	3.40	3.31	3.65
Kansas	3.41	NA	NA	NA	R3.08	2.76	2.35	2.71
Kentucky	3.34	3.17	3.79	3.83	3.30	3.71	3.66	3.71
Louisiana	1.95	2.12	NA	1.49	2.13	NA	1.85	1.98
Maine	6.05	5.20	5.08	6.07	4.92	4.22	3.92	3.80
Maryland	6.65	6.18	5.31	5.31	4.76	4.21	5.86	4.57
Massachusetts	6.88	4.62	NA	NA	5.75	4.34	NA	4.36
Michigan	3.66	3.92	3.99	3.96	3.60	4.29	4.67	5.21
Minnesota	2.81	2.86	2.93	3.01	2.82	2.67	2.68	2.91
Mississippi	3.11	NA	NA	3.30	2.84	3.02	3.03	NA
Missouri	NA	4.74	4.47	4.27	4.46	4.16	4.13	4.27
Montana	4.78	3.40	5.35	4.82	5.31	5.54	11.14	7.57
Nebraska	3.12	3.35	3.20	3.30	3.28	2.86	2.56	2.72
Nevada	4.50	4.50	4.74	4.59	4.53	4.39	4.35	4.46
New Hampshire	6.73	6.51	NA	4.95	NA	2.82	3.67	NA
New Jersey	NA	NA	NA	NA	NA	NA	NA	2.88
New Mexico	3.58	NA	3.15	1.54	2.60	2.95	2.99	3.19
New York	NA	NA	NA	NA	NA	NA	NA	NA
North Carolina	3.60	3.63	3.95	4.12	3.90	3.63	3.55	3.62
North Dakota	2.53	2.66	2.88	3.14	2.64	2.51	2.11	2.53
Ohio	5.13	5.42	NA	5.76	4.69	5.78	5.78	7.46
Oklahoma	3.50	3.45	3.71	3.49	3.39	3.64	3.40	3.44
Oregon	4.37	3.87	NA	4.25	3.50	3.96	3.57	3.74
Pennsylvania	4.45	4.60	4.27	4.26	4.10	3.98	4.04	3.88
Rhode Island	4.77	5.00	3.82	3.85	3.68	3.93	3.08	2.98
South Carolina	3.15	3.00	3.24	3.25	3.17	3.11	2.93	2.47
South Dakota	3.12	3.13	3.27	3.10	3.12	3.27	3.38	3.17
Tennessee	3.54	3.85	R3.70	3.88	3.79	3.30	3.30	3.26
Texas	2.02	2.10	NA	2.30	2.18	NA	1.87	2.15
Utah	3.16	2.85	3.09	3.29	3.24	3.03	3.08	3.36
Vermont	2.75	3.00	2.80	2.61	2.30	2.84	2.74	2.77
Virginia	3.88	5.31	4.24	5.50	4.62	4.00	3.16	3.33
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	2.82	2.68	2.90	2.86	2.82	3.09	2.92	2.95
Wisconsin	3.82	3.92	3.92	4.01	4.17	3.40	3.13	3.56
Wyoming	NA	3.74	3.28	3.29	3.28	3.20	3.23	3.27
Total	**3.00**	**3.09**	**R3.11**	**2.92**	**2.95**	**2.75**	**2.66**	**2.75**

See footnotes at end of table.

Table 23. Average Price of Natural Gas Sold to Industrial Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1998							1997
	July	June	May	April	March	February	January	Total
Alabama	3.01	2.98	2.99	3.26	2.75	3.34	3.35	3.65
Alaska	1.22	1.40	1.43	1.42	1.45	1.52	1.56	1.54
Arizona	3.36	3.51	3.44	3.45	3.33	3.76	3.53	3.60
Arkansas	3.47	3.28	3.28	3.39	3.78	3.62	3.77	3.71
California	3.48	3.38	2.88	3.97	3.31	5.34	4.55	4.18
Colorado	R2.26	R2.27	2.48	2.26	2.62	2.58	2.69	3.66
Connecticut	3.61	3.69	4.13	4.55	4.74	5.13	5.12	4.73
Delaware	4.32	4.35	4.32	4.63	3.79	4.08	4.22	4.40
District of Columbia	—	—	—	—	—	—	—	—
Florida	4.37	4.20	4.46	4.58	4.40	R4.26	4.59	4.41
Georgia	3.85	4.90	5.30	5.15	5.18	5.37	5.63	4.56
Hawaii	—	—	—	—	—	—	—	10.79
Idaho [a]	2.97	3.10	3.09	3.10	3.25	3.02	3.06	2.76
Illinois	3.10	4.49	4.18	4.02	4.08	4.12	4.22	3.97
Indiana	5.05	3.74	4.51	4.91	4.56	4.29	4.68	4.33
Iowa	4.14	2.25	4.17	2.97	2.25	2.42	3.43	4.11
Kansas	2.78	3.05	3.53	3.56	3.61	3.65	3.89	3.32
Kentucky	3.61	3.48	3.21	3.85	3.79	4.51	4.59	4.19
Louisiana	2.30	2.43	2.62	2.19	2.26	2.22	2.90	2.87
Maine	4.17	4.10	4.70	6.13	6.02	6.62	6.02	5.55
Maryland	8.24	5.60	4.54	5.10	5.88	5.59	7.46	3.25
Massachusetts	4.83	4.89	4.66	6.64	6.77	6.70	6.79	5.78
Michigan	4.77	4.32	4.01	3.81	3.61	4.11	3.90	4.02
Minnesota	2.84	2.58	3.03	3.06	3.08	3.00	R3.24	3.28
Mississippi	3.35	NA	NA	NA	NA	3.22	NA	3.55
Missouri	4.19	4.27	4.25	4.30	4.27	4.69	5.30	4.78
Montana	6.88	6.44	5.89	5.22	5.02	4.85	4.82	4.79
Nebraska	3.20	3.34	3.34	3.35	3.34	3.27	3.30	3.85
Nevada	5.86	5.81	5.94	5.84	6.00	6.06	5.90	7.77
New Hampshire	3.58	3.38	3.90	3.77	5.72	5.84	7.08	4.90
New Jersey	3.17	3.39	3.43	3.42	3.24	3.42	3.71	3.78
New Mexico	3.13	3.45	3.77	4.00	4.09	5.69	2.18	2.99
New York	NA	3.92	NA	4.49	15.18	NA	NA	5.05
North Carolina	3.60	3.57	3.68	3.63	4.19	4.41	4.95	4.66
North Dakota	2.85	2.60	3.15	3.10	3.22	3.01	3.22	3.05
Ohio	NA	5.05	4.98	5.21	5.67	5.06	5.62	4.93
Oklahoma	3.41	3.43	3.13	3.32	4.12	4.18	4.10	4.18
Oregon	3.80	3.77	3.75	NA	NA	3.73	3.67	3.03
Pennsylvania	3.94	4.09	4.05	4.40	4.57	4.55	4.80	4.61
Rhode Island	3.59	3.58	3.75	4.04	4.06	4.25	4.59	4.33
South Carolina	3.37	3.21	3.31	3.42	3.53	3.38	3.67	3.72
South Dakota	3.21	3.54	3.44	3.37	3.38	3.25	3.30	4.02
Tennessee	4.21	3.38	3.54	3.64	3.59	3.98	R4.32	4.18
Texas	2.53	2.24	2.44	2.49	2.49	R2.72	2.66	2.82
Utah	3.20	2.78	2.90	2.95	3.05	3.19	3.06	2.55
Vermont	2.78	2.78	2.87	2.86	2.94	3.01	3.06	3.07
Virginia	4.21	3.79	3.45	3.45	4.49	4.99	4.81	4.68
Washington	NA	NA	NA	NA	NA	NA	NA	3.16
West Virginia	3.00	2.90	2.74	2.97	2.90	2.87	2.78	2.91
Wisconsin	3.76	3.44	3.69	4.20	4.17	4.48	3.79	4.13
Wyoming	3.26	3.23	3.40	3.29	3.31	3.33	3.29	3.49
Total	**3.01**	**2.95**	**3.10**	**3.26**	**3.43**	**R3.57**	**R3.69**	**3.59**

R Revised Data.
NA Not Available.
— Not Applicable.

Notes: Data for 1997 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 25 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries. In 1996, consumption of natural gas for agricultural use is classified as industrial use. In 1995 and earlier years, agricultural use was classified as commercial use. See Explanatory Note 5 for further explanation.

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

Table 24. Average Price of Natural Gas Delivered to Electric Utility[a] Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet)

State	YTD 1999	YTD 1998	YTD 1997	1999				
				June	May	April	March	February
Alabama	2.52	2.56	2.71	2.73	2.70	2.52	2.25	2.07
Alaska	1.65	1.85	1.66	1.59	1.61	1.60	1.72	1.70
Arizona	2.43	2.85	3.38	2.62	2.67	2.22	2.13	2.29
Arkansas	2.31	2.36	2.45	2.49	2.52	2.22	1.88	1.94
California	2.62	2.83	3.13	2.57	2.72	2.42	2.75	2.55
Colorado	2.62	2.69	3.52	3.18	2.60	2.25	2.18	2.24
Connecticut	2.49	2.54	2.49	2.52	2.50	2.54	2.12	2.02
Delaware	2.71	2.74	3.09	2.71	2.53	2.46	2.46	2.98
District of Columbia	0.00	0.00	0.00	—	—	—	—	—
Florida	2.32	2.41	2.35	2.36	2.37	2.31	2.01	2.86
Georgia	2.30	3.08	2.98	2.47	2.58	2.13	1.37	2.15
Hawaii	0.00	0.00	0.00	—	—	—	—	—
Idaho	0.00	0.00	0.00	—	—	—	—	—
Illinois	2.21	2.37	2.36	2.44	2.36	2.20	1.86	1.81
Indiana	2.90	3.04	3.20	2.79	3.19	3.14	2.71	2.78
Iowa	3.06	3.09	3.35	2.97	3.01	2.77	3.13	3.45
Kansas	2.15	2.24	2.33	2.35	2.35	2.08	1.80	1.96
Kentucky	3.32	3.74	3.46	3.15	5.12	3.77	3.33	2.99
Louisiana	2.31	2.51	2.70	2.52	2.58	2.25	2.01	2.08
Maine	0.00	0.00	0.00	—	—	—	—	—
Maryland	2.88	3.08	3.11	2.88	3.27	2.55	2.60	3.46
Massachusetts	2.54	3.03	2.94	2.75	2.58	2.26	2.10	2.13
Michigan	1.50	1.03	0.63	1.79	1.74	1.09	0.88	1.33
Minnesota	2.54	2.61	2.32	2.48	2.32	2.31	2.56	3.49
Mississippi	2.25	2.43	2.63	2.43	2.45	2.30	1.91	1.95
Missouri	2.38	2.41	2.73	2.48	2.41	2.31	2.16	2.29
Montana	3.86	6.20	5.60	4.40	10.99	5.69	7.37	5.20
Nebraska	2.50	2.39	2.18	2.63	2.72	2.46	1.37	2.79
Nevada	2.36	2.40	2.06	2.46	2.43	2.55	2.07	2.40
New Hampshire	2.44	0.00	2.72	2.44	—	—	—	—
New Jersey	2.85	2.81	2.94	2.88	2.85	2.94	2.46	2.76
New Mexico	2.03	2.33	2.56	2.31	2.22	2.05	1.79	1.89
New York	2.62	2.77	2.80	2.72	2.71	2.49	2.37	2.55
North Carolina	2.87	2.83	2.85	2.70	2.71	3.31	3.32	3.33
North Dakota	0.00	0.00	3.49	—	—	—	—	—
Ohio	2.77	3.15	3.63	2.99	2.42	2.06	2.99	3.32
Oklahoma	2.50	2.76	3.07	2.59	2.66	2.58	2.28	2.48
Oregon	1.91	1.24	1.71	1.99	1.91	1.79	1.67	1.83
Pennsylvania	2.56	3.16	2.95	2.29	3.18	2.55	3.02	2.98
Rhode Island	0.00	3.37	3.21	—	—	—	—	—
South Carolina	3.45	3.74	3.61	3.70	3.46	2.94	3.02	2.86
South Dakota	0.00	0.00	0.00	—	—	—	—	—
Tennessee	0.00	0.00	0.00	—	—	—	—	—
Texas	2.24	2.41	2.60	2.40	2.44	2.17	1.99	2.09
Utah	2.37	1.94	4.82	2.43	2.36	2.36	2.56	2.19
Vermont	2.56	2.92	3.07	2.94	3.03	2.56	2.44	2.47
Virginia	3.07	3.22	2.84	3.39	2.89	2.79	3.09	3.12
Washington	0.00	2.79	NA	—	—	—	—	—
West Virginia	2.99	3.56	4.08	3.08	2.81	3.12	2.96	2.93
Wisconsin	2.77	2.81	2.93	2.80	2.92	2.63	2.51	2.79
Wyoming	4.16	8.52	11.54	2.60	6.59	13.06	6.02	4.83
Total	**2.33**	**2.50**	**2.66**	**2.47**	**2.48**	**2.25**	**2.11**	**2.27**

See footnotes at end of table.

Table 24. Average Price of Natural Gas Delivered to Electric Utility[a] Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1999	1998						
	January	Total	December	November	October	September	August	July
Alabama	2.22	2.55	2.68	2.47	2.62	2.46	2.50	2.63
Alaska	1.68	1.80	1.72	1.74	1.72	1.73	1.76	1.80
Arizona	2.32	2.43	2.38	2.77	2.11	2.33	2.28	2.41
Arkansas	2.04	2.28	2.35	—	2.25	2.15	2.05	2.49
California	2.70	2.79	2.96	2.86	2.56	2.50	2.83	2.92
Colorado	3.26	2.91	3.33	3.15	2.71	2.82	3.31	2.77
Connecticut	2.11	2.42	1.90	2.45	2.07	2.22	2.34	2.46
Delaware	3.34	2.89	3.34	3.24	2.66	2.41	2.66	3.47
District of Columbia	—	0.00	—	—	—	—	—	—
Florida	2.08	2.27	1.39	2.30	2.30	2.18	2.18	2.27
Georgia	4.83	3.19	2.11	2.67	3.80	4.00	2.82	3.18
Hawaii	—	0.00	—	—	—	—	—	—
Idaho	—	0.00	—	—	—	—	—	—
Illinois	2.27	2.25	2.12	2.31	2.20	2.01	1.95	2.27
Indiana	2.99	2.88	3.36	2.86	3.23	2.74	2.58	2.80
Iowa	3.62	3.00	3.38	3.11	2.93	2.91	2.80	3.01
Kansas	2.24	2.13	2.21	2.25	2.03	1.87	1.99	2.28
Kentucky	2.51	3.11	2.90	3.11	2.85	2.42	2.43	2.86
Louisiana	2.13	2.38	2.16	2.32	2.25	2.12	2.17	2.59
Maine	—	0.00	—	—	—	—	—	—
Maryland	3.52	2.77	2.64	3.85	3.13	2.53	2.49	2.84
Massachusetts	2.43	2.78	2.26	2.44	2.28	2.13	2.35	2.62
Michigan	2.07	1.23	1.25	1.10	1.46	1.67	1.38	1.34
Minnesota	3.02	2.42	3.43	2.69	2.32	2.00	2.41	2.48
Mississippi	2.05	2.32	1.97	2.28	2.21	2.16	2.16	2.47
Missouri	2.34	2.23	2.31	2.32	2.14	2.13	1.95	2.39
Montana	2.04	3.65	1.48	1.37	1.30	1.02	4.99	2.47
Nebraska	2.28	2.38	2.92	2.81	2.10	1.93	2.49	2.62
Nevada	2.20	2.37	2.01	2.61	2.33	2.42	2.42	2.34
New Hampshire	—	0.00	—	—	—	—	—	—
New Jersey	2.95	2.74	2.44	3.11	2.74	2.56	2.46	2.92
New Mexico	2.03	2.22	2.14	2.34	2.02	1.90	2.03	2.32
New York	2.80	2.56	2.43	2.80	2.30	2.21	2.29	2.63
North Carolina	3.34	2.73	3.93	3.59	3.00	2.53	2.55	2.92
North Dakota	—	0.00	—	—	—	—	—	—
Ohio	3.88	3.51	3.88	4.36	3.88	4.09	3.93	2.98
Oklahoma	2.32	2.47	2.28	2.50	2.41	2.16	2.07	2.52
Oregon	2.01	1.55	1.92	1.88	1.63	1.48	1.56	1.46
Pennsylvania	2.94	3.30	4.88	6.91	2.50	3.74	2.63	3.18
Rhode Island	—	3.38	—	—	—	—	3.40	3.38
South Carolina	3.00	3.60	4.05	3.71	3.21	3.37	3.53	3.58
South Dakota	—	1.77	—	—	—	1.77	—	—
Tennessee	—	0.00	—	—	—	—	—	—
Texas	2.10	2.30	2.24	2.25	2.16	2.05	2.11	2.46
Utah	2.24	2.11	2.45	2.42	2.20	1.95	2.04	2.15
Vermont	2.55	2.90	2.87	2.84	2.86	2.54	2.67	3.09
Virginia	3.18	3.04	4.03	3.72	3.09	2.76	2.60	3.02
Washington	—	2.79	—	—	—	—	—	—
West Virginia	3.19	3.53	3.02	3.25	1.20	2.94	3.85	6.31
Wisconsin	2.64	2.68	2.73	2.63	2.42	2.31	2.49	2.80
Wyoming	6.92	8.61	11.18	14.27	5.33	6.64	67.70	8.23
Total	**2.26**	**2.37**	**2.22**	**2.37**	**2.22**	**2.15**	**2.21**	**2.50**

See footnotes at end of table.

Table 24. Average Price of Natural Gas Delivered to Electric Utility[a] Consumers, by State, 1997-1999

(Dollars per Thousand Cubic Feet) — Continued

State	1998						1997	
	June	May	April	March	February	January	Total	December
Alabama	2.49	2.62	2.69	2.55	2.44	2.86	2.86	2.90
Alaska	1.87	1.84	1.84	1.85	1.88	1.85	1.74	1.84
Arizona	2.79	3.20	2.82	3.07	2.56	2.84	2.99	2.86
Arkansas	2.33	2.33	2.56	2.36	2.16	2.25	2.69	2.24
California	2.70	2.94	2.71	2.85	2.79	2.94	3.08	2.96
Colorado	2.83	2.56	2.53	2.61	2.65	3.01	3.16	2.93
Connecticut	2.38	2.56	2.70	2.79	2.63	2.74	2.47	2.74
Delaware	3.27	1.34	1.41	4.15	3.21	5.34	3.15	4.28
District of Columbia	—	—	—	—	—	—	—	—
Florida	2.31	2.31	2.68	2.64	2.49	2.25	2.51	2.52
Georgia	2.91	3.72	1.94	1.72	2.88	2.35	2.72	4.97
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	2.37	2.37	2.55	2.34	2.28	2.25	2.55	2.48
Indiana	2.95	2.98	3.37	3.25	2.64	3.84	3.23	3.67
Iowa	2.86	3.16	3.14	3.35	3.00	3.36	3.41	2.99
Kansas	2.14	2.20	2.40	2.36	1.97	3.35	2.53	3.33
Kentucky	3.68	3.59	5.25	4.04	3.58	3.46	3.45	3.47
Louisiana	2.40	2.52	2.66	2.51	2.47	2.61	2.79	2.86
Maine	—	—	—	—	—	—	—	—
Maryland	2.93	2.96	3.33	3.18	3.32	3.75	2.97	3.61
Massachusetts	2.24	2.86	3.66	3.64	2.95	3.16	3.11	3.57
Michigan	1.29	1.20	1.35	0.75	0.84	0.51	0.79	0.47
Minnesota	2.42	2.74	2.76	2.83	2.62	2.63	2.44	2.99
Mississippi	2.36	2.41	2.56	2.46	2.46	2.48	2.72	2.80
Missouri	2.41	2.31	2.56	2.52	2.82	2.63	2.81	2.77
Montana	2.59	5.34	1.40	12.33	8.49	4.61	NA	4.18
Nebraska	2.37	2.40	1.98	2.72	4.47	2.72	2.86	4.94
Nevada	2.73	2.44	2.31	2.02	2.37	2.41	2.18	2.16
New Hampshire	—	—	—	—	—	—	2.71	—
New Jersey	2.73	2.77	3.05	2.88	2.83	2.98	3.06	3.20
New Mexico	2.20	2.33	2.41	2.39	2.30	2.43	2.64	2.55
New York	2.51	2.64	2.87	2.96	2.95	3.00	2.88	3.38
North Carolina	2.78	2.89	3.37	4.03	—	3.02	3.22	3.60
North Dakota	—	—	—	—	—	—	3.43	—
Ohio	2.79	3.06	4.01	4.14	3.16	3.32	3.72	4.13
Oklahoma	2.41	2.52	2.88	2.62	2.72	4.47	2.97	2.89
Oregon	1.31	1.50	1.36	1.23	1.03	1.14	1.49	1.48
Pennsylvania	2.32	5.37	5.94	2.69	2.64	2.79	3.02	3.16
Rhode Island	3.40	3.43	3.45	3.19	3.24	3.48	3.35	3.78
South Carolina	3.92	3.41	3.44	3.58	3.53	4.05	4.07	4.46
South Dakota	—	—	—	—	—	—	—	—
Tennessee	—	—	—	—	—	—	—	—
Texas	2.34	2.38	2.52	2.43	2.41	2.49	2.69	2.74
Utah	1.94	—	—	—	—	—	2.09	—
Vermont	2.81	3.03	3.08	2.81	2.77	3.02	3.16	3.42
Virginia	2.93	2.99	4.46	3.34	3.78	3.05	2.93	2.54
Washington	—	—	5.59	3.86	4.11	1.64	NA	5.73
West Virginia	2.62	3.58	—	—	—	5.59	3.35	3.31
Wisconsin	2.64	2.95	3.13	2.75	2.91	2.90	3.17	2.92
Wyoming	7.66	11.70	4.77	10.42	8.72	5.39	NA	1.63
Total	**2.40**	**2.47**	**2.59**	**2.53**	**2.51**	**2.64**	**2.74**	**2.77**

[a] Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.
NA Not Available.
— Not Applicable.
Notes: Data for 1997 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, "Monthly Report of Cost and Quality of Fuels for Electric Plants," and Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Table 25

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999

State	YTD 1999		YTD 1998		YTD 1997		1999 July	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	72.3	15.7	77.3	19.2	69.3	23.8	50.9	14.7
Alaska	56.8	99.7	49.9	99.5	56.7	97.4	56.3	98.4
Arizona	83.9	34.9	85.8	32.7	85.5	20.7	83.0	43.0
Arkansas	NA	NA	93.1	9.1	94.9	11.3	83.6	7.9
California	50.7	10.9	52.1	11.2	53.5	9.9	40.1	8.8
Colorado	NA	NA	NA	8.6	94.0	22.8	NA	NA
Connecticut	65.7	58.9	71.6	57.2	86.2	68.3	55.4	54.9
Delaware	100.0	19.2	100.0	23.7	100.0	32.8	100.0	12.3
District of Columbia	NA	—	54.6	—	57.5	—	NA	—
Florida	92.1	3.4	96.4	4.3	97.8	10.9	94.7	2.7
Georgia	NA	NA	85.7	14.3	90.1	26.7	55.3	11.0
Hawaii	100.0	—	100.0	—	100.0	—	100.0	100.0
Idaho	87.6	2.8	87.8	2.4	87.4	2.1	83.7	2.8
Illinois	43.7	8.7	49.1	8.5	56.4	12.6	26.3	5.3
Indiana	NA	NA	NA	8.8	87.9	16.5	NA	NA
Iowa	84.4	7.3	85.3	6.2	89.8	7.8	72.2	7.1
Kansas	NA	NA	71.2	8.0	72.8	9.4	52.3	12.4
Kentucky	87.6	16.3	87.2	14.3	90.4	20.5	79.7	16.1
Louisiana	96.4	7.1	95.7	6.8	96.2	10.7	96.1	7.3
Maine	100.0	86.4	100.0	88.1	100.0	93.6	100.0	84.1
Maryland	NA	NA	39.6	5.4	74.3	11.2	NA	3.9
Massachusetts	NA	NA	59.7	NA	66.3	21.9	NA	NA
Michigan	60.3	9.8	60.5	7.2	66.1	10.5	37.5	4.5
Minnesota	95.7	37.4	94.6	39.7	99.0	40.7	96.7	36.7
Mississippi	NA	NA	93.6	NA	95.6	39.3	94.1	33.4
Missouri	79.1	19.9	81.9	18.9	81.2	21.9	47.4	11.0
Montana	80.2	1.6	82.1	2.7	92.1	3.4	70.1	1.0
Nebraska	63.2	22.2	75.9	17.5	77.3	27.7	68.6	9.0
Nevada	61.7	9.0	74.6	1.8	73.3	2.0	33.0	18.1
New Hampshire	NA	24.4	NA	36.7	93.6	53.6	86.6	26.3
New Jersey	NA	NA	57.2	47.0	60.2	46.0	NA	NA
New Mexico	49.3	NA	61.7	11.5	74.3	25.1	27.3	5.7
New York	NA	NA	NA	NA	66.2	8.4	46.8	22.2
North Carolina	77.1	46.7	90.7	27.2	94.2	42.8	87.4	56.1
North Dakota	87.5	13.5	85.0	13.2	91.5	21.8	79.6	10.9
Ohio	46.4	2.5	NA	NA	67.0	6.5	30.8	0.6
Oklahoma	75.5	4.6	77.3	4.1	84.9	5.2	57.6	3.4
Oregon	98.8	22.3	NA	NA	98.7	18.6	98.8	12.2
Pennsylvania	59.5	11.8	NA	14.0	65.4	14.6	53.6	10.7
Rhode Island	57.0	6.5	63.0	7.4	85.3	18.2	44.1	28.7
South Carolina	90.7	82.3	98.1	86.4	98.8	86.6	94.7	87.0
South Dakota	82.2	41.6	84.1	34.0	85.4	23.8	73.9	20.7
Tennessee	NA	NA	NA	26.2	92.6	40.8	74.1	28.3
Texas	75.3	NA	62.0	14.0	62.5	19.0	72.5	25.4
Utah	83.0	10.0	82.8	8.3	83.9	8.8	76.0	8.7
Vermont	100.0	76.6	100.0	100.0	100.0	100.0	100.0	68.6
Virginia	NA	NA	72.8	12.3	79.5	10.6	62.5	7.9
Washington	NA	NA	NA	NA	90.2	25.8	NA	NA
West Virginia	NA	NA	48.3	5.9	58.9	12.3	33.9	30.2
Wisconsin	73.7	21.6	74.0	20.5	84.7	28.8	47.7	18.8
Wyoming	91.1	NA	NA	1.7	81.5	2.4	84.3	NA
Total	**65.9**	**16.8**	**67.7**	**14.6**	**72.9**	**18.6**	**54.9**	**18.8**

See footnotes at end of table.

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 — Continued

State	1999							
	June		May		April		March	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	53.4	15.3	67.4	15.0	76.0	15.2	76.3	15.5
Alaska	57.4	100.0	58.9	99.9	53.5	99.9	57.5	99.9
Arizona	82.1	37.2	82.4	42.3	82.5	30.5	84.6	26.3
Arkansas	NA	NA	NA	8.6	89.6	8.7	90.1	9.6
California	48.6	10.1	41.9	12.7	51.1	12.7	59.5	13.4
Colorado	95.8	0.6	96.7	0.6	NA	0.8	96.7	0.4
Connecticut	56.8	62.3	53.6	55.2	72.9	64.0	67.4	58.6
Delaware	100.0	16.4	100.0	22.4	100.0	17.6	100.0	22.7
District of Columbia	33.9	—	39.4	—	43.5	—	53.8	—
Florida	96.3	3.2	91.6	4.2	92.0	3.4	90.3	4.2
Georgia	60.0	10.9	NA	NA	82.0	6.0	83.0	13.5
Hawaii	100.0	100.0	100.0	100.0	100.0	100.0	100.0	—
Idaho	83.3	2.8	85.5	2.3	87.0	2.6	87.8	2.8
Illinois	33.7	6.7	34.9	6.6	40.9	10.3	47.7	9.1
Indiana	NA	NA	NA	NA	NA	NA	NA	NA
Iowa	76.4	5.9	93.5	5.9	77.2	6.2	87.3	7.5
Kansas	55.9	6.6	68.4	NA	69.1	4.9	NA	5.0
Kentucky	80.4	12.9	84.4	16.5	83.9	16.3	88.8	16.6
Louisiana	97.1	6.7	96.6	6.4	97.2	7.0	96.2	7.5
Maine	100.0	87.9	R100.0	84.4	100.0	75.1	100.0	80.7
Maryland	19.8	4.9	NA	NA	25.1	1.6	NA	R9.5
Massachusetts	R44.2	NA	R54.1	41.5	R46.8	NA	R67.0	NA
Michigan	39.5	4.9	47.1	7.2	58.0	14.2	63.3	16.2
Minnesota	92.1	47.2	96.6	29.3	91.7	38.0	96.5	39.3
Mississippi	94.4	35.2	NA	38.1	NA	NA	88.4	35.1
Missouri	71.0	13.6	75.8	14.0	81.4	17.2	83.3	24.6
Montana	67.9	R0.4	R92.8	R1.7	77.3	R1.7	78.1	R1.8
Nebraska	63.2	18.1	59.4	22.4	65.0	64.6	67.6	23.8
Nevada	55.6	18.7	60.2	18.7	63.2	25.4	67.7	28.0
New Hampshire	89.1	23.2	NA	26.2	94.2	27.2	94.5	19.6
New Jersey	NA	NA	NA	NA	NA	NA	NA	NA
New Mexico	28.9	5.9	27.2	4.9	40.8	NA	58.1	4.2
New York	NA	22.4	NA	NA	NA	NA	NA	NA
North Carolina	88.0	49.9	89.9	50.0	90.7	42.0	55.1	44.4
North Dakota	77.0	16.4	85.3	6.0	86.8	14.5	89.7	13.7
Ohio	30.1	1.1	34.5	1.8	38.7	2.0	48.5	3.6
Oklahoma	24.2	4.0	68.1	3.8	75.7	4.3	79.2	5.0
Oregon	98.5	14.1	98.7	14.1	98.7	15.1	98.7	47.4
Pennsylvania	50.3	11.0	59.1	11.8	56.1	11.1	61.4	12.5
Rhode Island	46.8	32.0	48.9	31.4	56.2	38.8	60.4	50.1
South Carolina	94.9	81.2	95.4	86.1	85.3	72.8	78.0	83.3
South Dakota	60.2	33.2	78.7	38.8	83.2	41.8	84.3	47.4
Tennessee	58.7	27.0	77.6	26.4	NA	NA	83.9	22.5
Texas	72.4	21.4	74.4	NA	77.2	20.5	78.2	16.3
Utah	72.9	14.8	80.1	8.7	83.0	8.0	82.8	8.3
Vermont	100.0	68.7	100.0	68.8	100.0	76.3	100.0	82.2
Virginia	56.6	5.3	NA	NA	55.7	7.4	65.8	15.2
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	NA	NA	R47.0	R11.8	R51.4	NA	54.2	NA
Wisconsin	51.4	19.9	62.8	18.3	70.9	21.3	76.6	21.9
Wyoming	83.8	3.2	87.5	3.5	88.6	2.4	88.1	2.9
Total	**R57.2**	**18.3**	**R59.9**	**R17.1**	**R63.7**	**15.7**	**R68.4**	**16.6**

See footnotes at end of table.

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 — Continued

State	1999				1998			
	February		January		Total		December	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	77.4	16.1	81.0	18.4	74.5	18.4	68.2	16.7
Alaska	53.8	99.9	59.8	99.9	49.5	NA	48.8	NA
Arizona	84.6	34.0	86.3	32.3	84.7	33.4	83.7	33.5
Arkansas	91.4	10.6	93.3	11.7	90.7	9.0	88.9	8.8
California	52.6	14.4	55.7	11.8	43.1	10.8	43.6	12.0
Colorado	93.2	0.3	97.1	0.1	NA	R8.5	93.0	—
Connecticut	69.7	67.0	69.6	60.4	68.8	56.6	62.8	63.5
Delaware	100.0	24.0	100.0	18.1	100.0	21.8	100.0	24.4
District of Columbia	52.4	—	58.2	—	52.0	—	59.4	—
Florida	90.9	3.4	91.5	3.6	96.1	R4.1	95.0	3.7
Georgia	81.6	9.7	85.4	10.1	81.9	12.5	77.6	10.7
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	88.8	3.1	89.4	3.6	86.1	2.6	85.8	3.6
Illinois	46.1	10.0	46.9	10.9	46.5	8.5	44.0	11.4
Indiana	79.3	9.2	79.9	NA	NA	7.9	NA	8.7
Iowa	84.7	8.0	86.7	9.2	R84.6	7.0	88.3	10.4
Kansas	NA	5.4	NA	NA	67.6	NA	58.9	NA
Kentucky	89.2	18.0	90.3	16.9	86.6	14.5	88.4	19.2
Louisiana	95.9	7.8	96.2	7.5	95.5	NA	94.1	20.9
Maine	100.0	97.3	100.0	93.8	NA	87.3	100.0	84.2
Maryland	NA	6.5	39.3	7.5	36.7	6.3	36.7	9.8
Massachusetts	NA	32.3	78.5	28.3	R60.9	NA	R83.1	NA
Michigan	64.5	17.3	67.3	16.2	58.2	6.5	63.6	9.6
Minnesota	96.5	33.8	96.6	37.9	95.4	R38.2	96.5	38.3
Mississippi	96.9	38.2	NA	NA	94.1	NA	95.8	34.8
Missouri	79.1	33.9	85.5	26.3	77.9	17.5	78.6	21.2
Montana	80.1	R1.7	83.5	R2.4	80.1	2.3	79.9	2.4
Nebraska	63.5	28.7	59.8	23.5	71.9	17.1	50.7	26.9
Nevada	69.2	30.9	72.6	31.4	71.1	5.5	70.9	35.4
New Hampshire	95.3	24.1	95.5	24.2	NA	NA	95.3	24.4
New Jersey	NA	NA	NA	NA	NA	NA	NA	NA
New Mexico	52.8	3.6	66.7	NA	62.5	12.6	75.9	4.1
New York	NA	NA	NA	NA	NA	NA	NA	NA
North Carolina	73.8	43.2	97.0	41.1	88.8	25.4	88.4	25.9
North Dakota	83.6	13.6	92.4	18.4	84.2	14.2	87.5	18.9
Ohio	47.1	3.6	57.0	4.1	NA	NA	49.3	3.1
Oklahoma	78.9	5.1	83.2	5.7	73.5	3.5	72.5	5.0
Oregon	99.0	15.8	99.1	16.9	NA	NA	99.1	14.8
Pennsylvania	56.4	11.1	66.5	14.6	NA	13.4	64.1	13.4
Rhode Island	61.5	30.8	59.4	24.4	R60.4	7.6	53.7	38.3
South Carolina	97.8	83.0	97.6	84.8	97.6	86.8	96.7	86.7
South Dakota	84.1	50.0	86.6	51.8	84.1	34.0	84.6	46.2
Tennessee	84.8	23.3	89.7	25.4	NA	R24.7	85.2	26.0
Texas	81.3	13.0	71.0	13.8	60.2	14.1	61.7	12.8
Utah	85.7	10.8	85.8	12.2	82.5	8.9	85.2	10.0
Vermont	100.0	81.5	100.0	81.4	100.0	100.0	100.0	100.0
Virginia	68.2	13.6	76.4	20.7	R70.7	12.2	74.2	14.8
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	54.8	10.1	49.9	5.5	45.8	6.1	50.9	7.1
Wisconsin	78.8	22.5	80.6	25.4	71.1	19.4	76.7	20.9
Wyoming	97.3	4.2	96.5	4.3	NA	1.7	97.7	2.0
Total	**68.3**	**15.4**	**71.5**	**15.7**	**R64.8**	**14.6**	**R66.2**	**16.4**

See footnotes at end of table.

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 — Continued

State	1998							
	November		October		September		August	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	66.0	19.1	63.6	17.6	69.1	17.0	72.0	15.6
Alaska	51.0	NA	48.6	100.0	47.2	100.0	48.6	NA
Arizona	82.6	35.2	79.5	36.6	83.4	33.3	82.7	32.6
Arkansas	86.0	10.0	81.4	10.1	82.3	9.4	84.8	7.8
California	33.6	10.8	32.4	11.6	28.4	9.3	24.6	8.2
Colorado	94.9	0.1	85.2	0.2	85.8	—	91.3	1.1
Connecticut	76.2	58.2	61.4	54.1	55.3	59.6	58.1	51.5
Delaware	100.0	22.7	100.0	17.8	100.0	17.5	100.0	11.3
District of Columbia	49.8	—	37.5	—	36.5	—	35.4	—
Florida	94.6	3.3	95.1	3.2	96.5	3.9	96.3	6.1
Georgia	75.3	9.5	72.2	9.4	71.1	14.4	68.9	7.0
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	83.7	2.2	74.9	2.6	80.3	2.5	83.1	3.5
Illinois	44.1	9.1	40.5	8.2	36.4	7.0	37.9	6.0
Indiana	75.5	7.4	70.1	6.7	NA	5.6	R71.2	4.5
Iowa	82.9	10.1	76.2	7.2	76.8	6.4	79.7	5.2
Kansas	59.9	R4.2	58.5	5.4	55.4	10.9	59.9	11.2
Kentucky	87.0	16.9	82.3	13.0	81.6	12.0	78.9	11.6
Louisiana	95.5	9.8	R95.6	NA	95.4	8.8	95.5	7.5
Maine	NA	87.1	100.0	86.8	100.0	87.1	100.0	85.7
Maryland	38.4	8.7	25.6	8.3	23.1	3.5	22.7	7.2
Massachusetts	59.7	26.3	47.6	26.5	R81.8	NA	51.3	18.1
Michigan	56.3	8.7	45.9	5.1	41.1	5.0	35.9	3.8
Minnesota	95.6	37.2	97.5	35.5	98.3	35.1	98.1	33.5
Mississippi	94.7	34.8	94.3	33.8	93.8	32.7	96.2	NA
Missouri	73.7	17.7	65.7	12.3	69.2	12.7	43.6	12.2
Montana	78.1	2.3	73.9	1.6	68.2	0.9	73.4	1.2
Nebraska	66.0	18.9	80.1	15.9	75.1	13.9	81.5	10.4
Nevada	64.6	29.5	63.7	27.4	56.6	20.7	56.4	19.1
New Hampshire	R95.6	NA	93.1	21.5	91.9	21.5	NA	NA
New Jersey	NA	NA	NA	NA	NA	NA	50.0	33.4
New Mexico	66.6	11.0	52.4	7.9	45.9	12.9	45.9	15.1
New York	NA	NA	NA	NA	NA	NA	45.7	NA
North Carolina	85.2	27.1	80.3	21.1	82.3	18.0	83.8	21.3
North Dakota	86.5	19.3	81.1	21.5	68.6	13.4	67.7	8.3
Ohio	49.7	2.5	55.4	1.5	41.7	1.2	35.3	0.8
Oklahoma	65.2	3.6	57.4	1.8	57.9	1.8	56.4	1.8
Oregon	99.0	15.6	98.4	12.2	98.7	12.0	98.7	12.2
Pennsylvania	61.0	13.5	54.4	11.4	57.4	12.1	NA	11.6
Rhode Island	53.4	41.9	49.2	34.6	49.3	33.7	100.0	34.2
South Carolina	96.4	86.6	96.4	87.5	96.7	88.3	96.8	88.1
South Dakota	84.4	45.0	95.7	33.9	73.5	20.8	74.8	17.1
Tennessee	81.5	25.0	68.2	14.9	66.7	24.3	63.0	24.4
Texas	64.0	13.5	47.7	15.1	57.7	15.8	54.4	14.7
Utah	82.2	10.9	80.2	10.2	77.6	9.2	71.6	8.7
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	69.6	15.7	61.6	8.7	57.6	8.5	50.8	13.2
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	46.2	6.4	35.0	5.7	32.7	6.5	28.5	6.2
Wisconsin	69.9	20.5	67.7	16.5	40.0	15.5	48.0	12.8
Wyoming	NA	1.9	82.5	2.1	83.8	2.2	91.8	2.4
Total	**R62.1**	**15.0**	**R55.6**	**14.1**	**R53.6**	**14.2**	**R50.1**	**13.4**

See footnotes at end of table.

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 — Continued

State	1998							
	July		June		May		April	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	71.8	17.6	74.7	17.9	75.7	17.5	77.4	18.6
Alaska	47.1	96.5	45.3	100.0	47.7	100.0	49.5	100.0
Arizona	84.1	32.8	86.2	33.8	83.3	35.8	84.9	32.7
Arkansas	86.0	7.0	86.7	8.1	88.7	9.0	92.9	9.1
California	31.4	9.5	52.9	11.2	48.3	11.7	52.7	10.9
Colorado	NA	R2.0	91.8	R2.1	95.0	1.0	95.8	0.8
Connecticut	62.4	57.1	61.2	52.9	76.3	55.7	62.3	61.9
Delaware	100.0	17.8	100.0	19.3	100.0	19.5	100.0	23.3
District of Columbia	40.4	—	41.9	—	47.7	—	52.5	—
Florida	96.0	4.2	96.6	4.3	96.7	3.5	96.8	4.5
Georgia	68.9	5.1	79.0	15.1	82.0	15.7	85.5	13.4
Hawaii	100.0	—	100.0	—	100.0	—	100.0	—
Idaho	83.9	2.7	85.3	1.8	85.4	2.2	86.4	2.2
Illinois	27.0	4.9	45.8	5.2	34.8	6.8	44.3	9.1
Indiana	NA	5.6	NA	5.1	76.7	6.2	R79.7	9.0
Iowa	69.6	5.3	70.3	4.9	87.3	4.7	82.8	5.8
Kansas	58.8	13.5	54.2	10.8	67.5	7.7	69.5	5.6
Kentucky	76.4	15.2	82.6	13.8	84.2	14.7	85.7	14.7
Louisiana	95.3	6.9	96.2	7.0	96.5	7.3	98.1	7.2
Maine	100.0	84.1	100.0	87.9	100.0	84.1	100.0	83.8
Maryland	22.2	2.7	25.2	3.8	27.8	6.7	32.2	2.3
Massachusetts	48.4	16.8	46.3	NA	52.8	28.8	60.0	27.5
Michigan	38.1	4.4	40.8	4.8	42.2	5.9	58.3	9.6
Minnesota	97.2	34.8	98.2	41.1	98.5	35.1	96.1	38.9
Mississippi	94.3	33.9	94.9	NA	93.6	NA	93.3	NA
Missouri	65.6	14.1	69.4	12.6	75.7	14.0	82.0	17.4
Montana	69.1	0.7	70.5	0.7	R75.5	1.2	79.4	2.2
Nebraska	65.6	5.7	66.3	13.5	74.0	14.8	71.5	21.3
Nevada	66.3	4.0	70.9	4.6	71.9	4.8	73.2	5.8
New Hampshire	89.1	34.9	NA	32.7	94.3	38.9	95.5	47.0
New Jersey	47.4	25.6	51.5	27.7	46.0	26.4	55.2	29.2
New Mexico	46.7	17.9	39.7	13.9	48.8	10.0	57.3	6.5
New York	49.6	NA	47.4	6.9	NA	NA	58.1	10.1
North Carolina	83.3	26.4	82.5	24.3	86.7	26.9	90.6	31.2
North Dakota	80.8	11.0	82.1	10.4	79.2	6.1	80.0	12.3
Ohio	NA	NA	44.7	1.3	41.4	1.5	53.9	2.7
Oklahoma	63.5	2.1	63.6	2.2	70.4	2.9	75.0	4.9
Oregon	98.9	12.8	98.9	14.9	98.8	15.0	NA	NA
Pennsylvania	51.4	12.3	54.9	12.7	59.4	13.2	NA	13.3
Rhode Island	48.5	31.2	53.3	33.4	58.6	34.2	R59.3	37.9
South Carolina	97.4	87.5	97.4	88.2	98.2	87.7	98.4	86.0
South Dakota	75.4	22.5	72.8	24.9	65.9	15.8	93.7	56.2
Tennessee	63.7	24.5	66.6	27.2	77.4	23.9	75.8	29.3
Texas	48.8	12.1	63.8	15.2	55.8	14.1	59.8	14.5
Utah	70.7	7.5	75.6	9.1	73.7	8.9	82.5	7.9
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	69.4	8.0	66.8	8.7	70.0	11.5	R69.7	11.2
Washington	NA	NA	NA	NA	NA	NA	NA	NA
West Virginia	27.3	5.5	29.1	5.5	32.9	5.7	50.3	5.8
Wisconsin	45.1	12.6	52.4	15.5	53.8	15.1	72.9	19.3
Wyoming	NA	2.2	85.6	2.2	89.8	1.4	92.1	2.2
Total	**52.7**	**R12.6**	**60.2**	**14.0**	**60.6**	**13.9**	**R66.2**	**14.7**

See footnotes at end of table.

Table 25. Percentage of Total Deliveries Represented by Onsystem Sales, by State, 1997-1999 — Continued

State	1998						1997	
	March		February		January		Total	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	77.8	21.4	80.1	20.7	76.7	20.7	64.7	24.6
Alaska	49.9	100.0	52.6	100.0	52.6	100.0	54.5	97.8
Arizona	86.7	34.0	87.2	27.7	86.9	32.3	84.6	25.1
Arkansas	93.9	10.2	95.3	10.9	95.5	10.5	94.2	10.5
California	71.1	16.5	54.3	8.7	58.1	11.0	50.7	8.9
Colorado	96.0	1.2	95.2	1.2	95.4	2.5	92.8	23.6
Connecticut	71.2	59.4	78.2	57.8	78.4	61.0	81.9	66.4
Delaware	100.0	27.9	100.0	28.6	100.0	26.4	100.0	31.0
District of Columbia	60.1	—	59.0	—	60.2	—	54.9	100.0
Florida	96.2	R5.0	96.3	R4.7	96.3	R5.2	97.5	10.0
Georgia	87.5	17.2	90.3	16.7	88.7	16.5	89.1	26.7
Hawaii	100.0	—	100.0	—	100.0	—	100.0	100.0
Idaho	88.1	2.0	88.7	3.0	90.0	2.5	86.1	2.0
Illinois	55.3	10.6	50.4	9.8	53.7	10.7	54.3	11.5
Indiana	88.6	12.3	84.6	11.1	85.7	11.2	89.8	16.0
Iowa	R86.8	7.1	88.7	7.1	87.4	7.4	88.2	8.6
Kansas	76.9	5.5	73.6	5.3	71.9	5.1	70.7	9.5
Kentucky	90.0	13.1	86.5	17.2	90.0	12.3	90.0	19.2
Louisiana	96.0	8.1	93.8	6.0	95.2	5.4	95.9	10.1
Maine	100.0	85.5	100.0	91.4	100.0	97.9	100.0	91.4
Maryland	45.7	8.3	49.5	10.6	47.1	3.4	67.1	7.4
Massachusetts	65.5	29.0	61.4	32.5	64.3	30.3	62.6	20.2
Michigan	64.3	12.1	65.2	12.6	69.5	13.5	63.7	9.0
Minnesota	96.2	48.8	93.3	37.4	91.9	R40.5	98.8	40.4
Mississippi	89.6	NA	94.8	38.5	95.3	NA	94.8	39.6
Missouri	83.3	21.5	85.4	24.0	85.2	23.7	79.9	21.8
Montana	83.1	3.5	83.1	4.3	88.3	4.7	91.4	3.1
Nebraska	77.3	24.0	78.0	23.2	79.9	30.1	74.2	27.0
Nevada	75.9	7.1	79.8	15.3	77.3	7.2	71.4	1.8
New Hampshire	96.1	36.1	96.2	37.2	96.4	30.4	92.4	48.8
New Jersey	62.4	29.5	62.1	34.6	59.4	31.7	56.2	47.0
New Mexico	66.7	1.5	63.8	1.8	71.1	8.2	74.6	5.7
New York	NA	10.1	NA	NA	NA	NA	64.7	8.5
North Carolina	91.1	26.6	93.1	27.3	93.4	27.6	94.4	45.5
North Dakota	87.0	17.0	84.9	17.1	89.1	17.6	88.9	18.5
Ohio	60.1	3.2	60.2	4.7	60.5	4.5	65.6	5.7
Oklahoma	77.7	5.2	83.2	5.2	81.1	6.3	81.8	4.7
Oregon	NA	NA	99.2	15.3	99.3	19.7	98.5	16.3
Pennsylvania	57.7	14.2	57.2	15.2	58.7	16.3	63.6	14.2
Rhode Island	64.7	49.9	71.6	38.5	64.5	39.7	80.5	17.5
South Carolina	98.2	84.9	98.4	85.4	98.1	85.8	98.8	86.9
South Dakota	85.6	37.9	85.7	45.9	86.5	45.2	83.3	24.1
Tennessee	93.1	28.1	87.8	25.5	NA	R24.4	92.2	38.3
Texas	61.3	15.2	71.6	R15.3	68.3	12.3	61.4	17.3
Utah	81.2	8.6	89.1	8.5	85.7	7.8	83.3	8.9
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	73.4	17.8	76.7	14.6	74.4	18.7	77.9	13.0
Washington	NA	NA	NA	NA	NA	NA	84.1	23.5
West Virginia	51.9	6.1	55.5	6.1	56.0	6.4	54.6	12.2
Wisconsin	77.6	23.4	80.3	23.8	85.4	26.0	82.1	27.1
Wyoming	87.4	1.8	80.3	R1.6	NA	1.5	84.2	2.5
Total	**R72.0**	**16.3**	**71.1**	**15.4**	**72.1**	**R15.0**	**70.8**	**17.7**

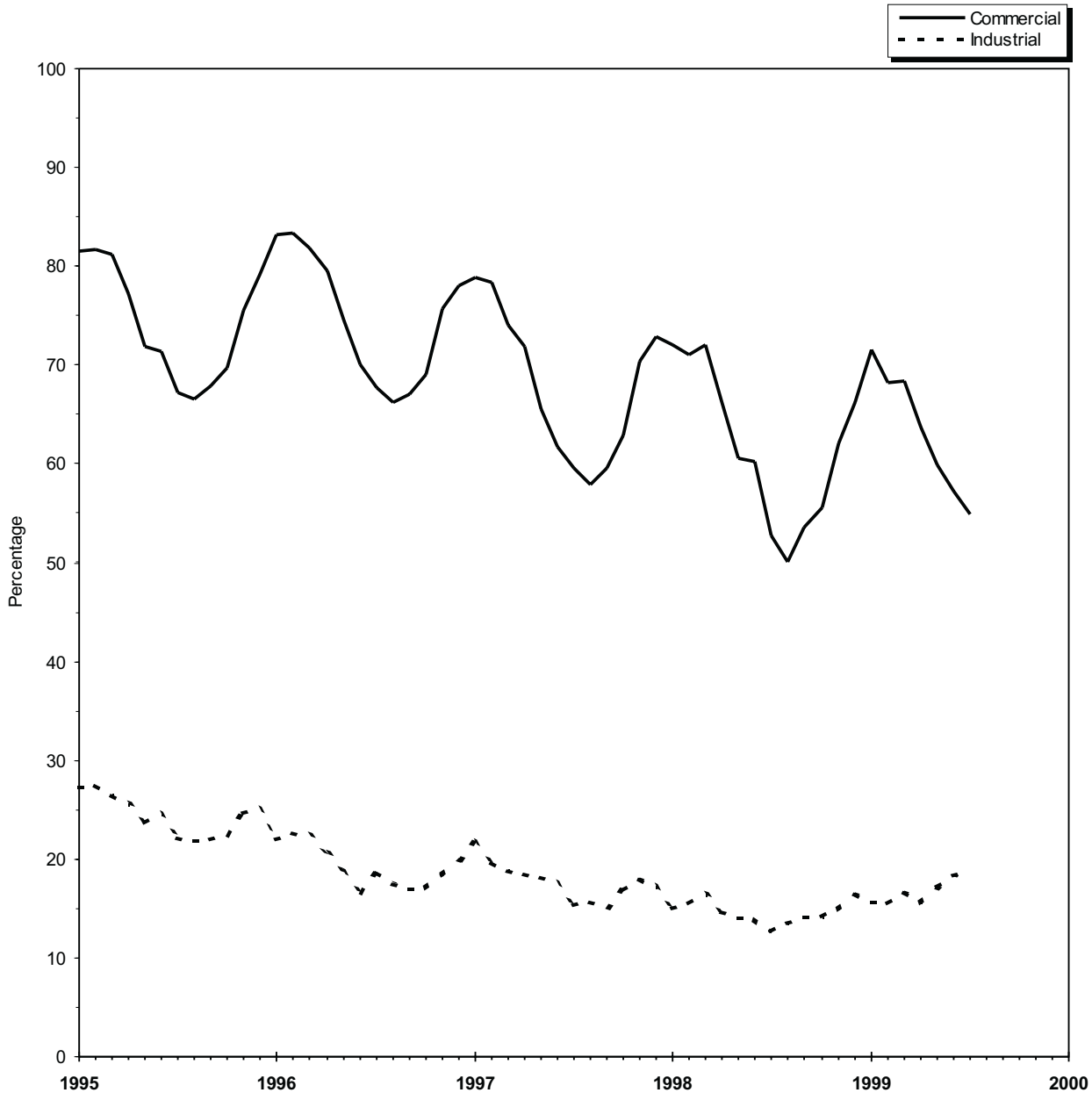
R Revised Data.
NA Not Available.
— Not Applicable.

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

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

Figure 6

Figure 6. Percentage of Total Deliveries Represented by Onsystem Sales, 1995-1999



Sources: Energy Information Administration, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers" and Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

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* (NGM). The information in this Appendix is provided to assist users in evaluating the monthly data. There is a brief description of what data are estimated and what data are taken from submitted reports, followed by ten technical notes that provide important information for individual data series.

The monthly data are preliminary when initially published. Data shown in this report for the most current months are taken from the EIA Short-Term Integrated Forecasting System (STIFS) model computations. Each month, EIA staff review the STIFS model estimates and adjust them, if necessary, based on their knowledge of new developments in the natural gas industry. Data for prior months are estimated or taken from submitted reports.

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 form Reports to the Sample Survey Form EIA-857
Electric Utilities	Reported of Form EIA-759

For data that are not taken from STIFS computations, Table A1 below lists the methodologies for deriving the monthly data to be published.

The STIFS model contains a series of calculations that produce forecasts for all of the energy industry. It is driven primarily by three sets of inputs or assumptions: estimates of key macroeconomic variables, world oil price assumptions, and assumptions about the severity of weather. The natural gas estimates also reflect other key inputs or assumptions including gas wellhead prices, electric power generation by other energy sources, and U.S. gas import capacity. The macroeconomic variable estimates are produced by DRI/McGraw-Hill but are adjusted by EIA to reflect EIA assumptions about the world price of oil, energy product prices, and other assumptions which may affect the macroeconomic outlook. The EIA publishes forecasts for the energy industry each quarter in the *Short-Term Energy Outlook*.

For production, total supply and disposition, and storage data (Tables l, 2, and 9), the most current two months shown are estimates produced from STIFS computations, and data that are two months or more prior to the date of publication are estimated or taken from submitted reports. For example, in the March issue of the NGM, February and March data are taken from the STIFS model computations while January and prior months data are estimated from available data sources or reported directly on EIA forms. For consumption data by sector (Table 3), the most current three months shown are estimates produced from STIFS computations while data that are three months prior to date of publication are taken from EIA forms.

Note 1. Nonhydrocarbon Gases Removed

Annual Data

Data on nonhydrocarbon gases removed from marketed productioncarbon dioxide, helium, hydrogen sulfide, and nitrogenare reported by State agencies on the voluntary Form EIA-895. 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. Seven States report monthly data on nonhydrocarbon gases removed: Alabama, Arizona, Mississippi, New Mexico, North Dakota, Oregon and Texas. Monthly data for California, Colorado, Florida, and Wyoming are estimated based on annual data reported on Form EIA-895. 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. In 1997 the Form EIA-627 was discontinued. States were requested to file an annual schedule on the monthly Form EIA-895, "Monthly Quantity and Value of Natural Gas Report."

For States not supplying monthly data on the annual schedule of the EIA-895, final monthly data are calculated by proportionally allocating the differences between total annual data reported on the Form EIA-895 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-895 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-895 for the previous year.

Estimates for total U.S. marketed production are based on final monthly data reported on the Form EIA-895 for the previous year. State estimates for nonhydrocarbon gas removed, gas used for repressuring, and gas vented and flared are based on the ratio of the item to gross withdrawals as reported on the EIA-895. These ratios are applied to the month's estimates for gross withdrawals to calculate figures for nonhydrocarbon gases removed, gas used for repressuring, and gas vented and flared. Estimates for gross withdrawal data are calculated from final monthly data filed on Form EIA-895 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. De-

partment 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 off 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.

Agricultural Use

Beginning with the reporting of 1996 annual data, the EIA changed the customer category used for reporting deliveries to consumers in the agricultural industry from commercial to industrial. In 1995 and earlier years, consumption of natural gas for agricultural use was classified as commercial use. Separate reports of the volumes affected are not available so the direct impact of this change is not known. Most natural gas consumed in agriculture is used to drive irrigation systems and to dry crops.

For the reporting of monthly data, the customer category will not be changed until 1998. In 1996, the monthly data reported under the old classification were adjusted to the annual data reported under the new classification. Monthly 1997 data will be adjusted in the same way as the 1996 data.

In comparing sectoral use over time, note that:

- There is an inherent shift in natural gas volumes from the commercial to industrial sectors due simply to changes in the reporting requirements. This break in series may indicate a spurious increase in industrial consumption with a corresponding decrease in the commercial sector.

- The sum of natural gas volumes consumed by the commercial and industrial sectors will not be changed by this modification of the instructions.

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 1991 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.

Types of Underground Storage Facilities

There are three principal types of underground storage facilities in operation in the United States today: salt caverns (caverns hollowed out in salt "bed" or

"dome" formations), depleted fields (depleted reservoirs in oil and / or gas fields), and aquifer reservoirs (water-only reservoirs conditioned to hold natural gas). A storage facility's daily deliverability or withdrawal capability is the amount of gas that can be withdrawn from it in a 24-hour period. Salt cavern storage facilities generally have high deliverability because all of the working gas in a given facility can be withdrawn in a relatively short period of time. (A typical salt cavern cycle is 10 days to deplete working gas, and 20 days to refill working gas.) By contrast, depleted field and aquifer reservoirs are designed and operated to withdraw all working gas over the course of an entire heating season (about 150 days). Further, while both traditional and salt cavern facilities can be switched from withdrawal to injection operations during the heating season, this is usually more quickly and easily done in salt cavern facilities, reflecting their greater operational flexibility.

Note 8. Average Wellhead Value

Annual Data

Form EIA-895 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.

Preliminary Monthly Data

Preliminary values for the monthly U.S. Natural gas wellhead price are estimated from the prevailing cash market prices at 5 major trading hubs: Henry Hub, LA; Carthage, TX; Katy, TX; Waha, TX; and Blanco, NM. These prices appear initially in the trade publication, *Natural Gas Week* , and they reflect the spot delivered-to-pipeline, volume-weighted average prices for natural gas bought and sold at the specified trading hubs. Prices include processing, gathering, and transportation fees to the hubs. The estimated wellhead prices are derived with a statistical procedure based on analysis of monthly time series data for the period 1995 through 1997. The preliminary estimates are replaced when annual survey data become available. This procedure was adopted beginning with publication of the February 1999 issue of the *Natural Gas Monthly* and it affects price estimates from January 1998 to the present.

Final Monthly Data

The Form EIA-895 requests State agencies to report monthly values of marketed production. Preliminary monthly gas price data are replaced by these final monthly data.

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 temperature 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

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 follow-up, 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-895, "Monthly Quantity of Natural Gas Report"

Survey Design

In 1996, an annual schedule was added to the Form EIA-895 to replace the Form EIA-627. 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.

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. In 1996, the Form EIA-627 was discontinued. The information is collected on an annual schedule on the Form EIA-895.

Survey Universe and Response Statistics

Form EIA-895 is mailed to energy or conservation agencies in all 33 natural gas producing States. All producing States participate voluntarily in the EIA-895 survey by filing the completed form or by responding to telephone contacts.

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.) The annual schedule of the Form EIA-895 is due with the December data report.

Summary of Data Requirements

The Form EIA-895 monthly schedule consists of nine questions on one page, and requires volumetric information on gross production (gas and oil wells individually), gas used for repressuring, gas vented and flared, nonhydrocarbon gases removed, natural gas used as fuel on leases, marketed production, value based marketed production and the value in dollar amount of the marketed production.

Form EIA-895 annual schedule 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 thousand cubic feet at the State's standard pressure base and at 60 degrees Fahrenheit. All dollar values are reported in thousands.

Routine Form EIA-895 Edit Checks

Each filing of Form EIA-895 is manually checked for reasonableness and mathematical accuracy. Information on the forms is compared to totals of monthly data reported. 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-895

Data from Form EIA-895 are also published in the EIA publication, *Natural Gas Annual.*

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 annual-ly 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

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 1,538 companies. These companies were respondents to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," for reporting year 1995 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 1995. 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 387 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:

$$C_{.j} = \frac{X_{.j}}{2n} \qquad (1)$$

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:

$$m = n\frac{X2}{X_{..}} \qquad (2)$$

where:

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

X2 = the sum within State of the Xi. 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.

A uniform random number R was selected between zero and $\left(I = \frac{X2}{m}\right)$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 X2 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 industrial gas and companies delivering only to residential or commercial customers.

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).

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

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

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 1995 submissions of Form EIA-176:

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

$$E_{vj} = \frac{Y_{.j}}{Y'_{.j}} \qquad (3)$$

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:

$$V_{.j} = {}_{y.j} \times E_{vj} \qquad (4)$$

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 25 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:

$$F_t = F_t - 1 \times \frac{y_{.jt}}{y_{.jt-1}} \qquad (5)$$

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,

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

Final Revisions

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

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

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

The formula for revising the estimated consumption is:

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

where:

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

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

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

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

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

The formula for revising the estimated revenue is:

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

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:

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

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, July 1999

State	Volume Million Cubic Feet				Price Dollars per Thousand Cubic Feet		
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial
Alabama	140	216	5,147	5,153	0.47	1.69	0.69
Alaska	0	0	0	0	—	—	—
Arizona	11	90	0	91	0.19	0.04	—
Arkansas	33	62	48	85	0.06	0.03	0.14
California	252	250	1,896	1,929	0.05	0.08	0.13
Colorado	NA	NA	NA	NA	NA	NA	NA
Connecticut	0	0	0	0	—	—	—
Delaware	0	0	0	0	—	—	—
District of Columbia	NA	NA	0	NA	NA	NA	—
Florida	34	171	1,279	1,291	0.59	0.38	0.24
Georgia	8	8,635	3,673	9,384	0.42	0.34	6.34
Hawaii	0	0	0	0	—	—	—
Idaho	0	0	0	0	—	—	—
Illinois	410	647	2,127	2,261	0.20	1.27	0.26
Indiana	NA	NA	NA	NA	NA	NA	NA
Iowa	12	18	60	64	0.07	0.06	0.09
Kansas	1,252	258	931	1,582	2.81	1.33	0.43
Kentucky	194	107	318	387	0.84	0.07	1.22
Louisiana	5	55	4,148	4,148	0.03	0.07	0.03
Maine	0	0	0	0	—	—	—
Maryland	NA	NA	9	NA	NA	NA	0.02
Massachusetts	NA	NA	NA	NA	NA	NA	NA
Michigan	98	174	2,934	2,941	0.09	0.07	0.30
Minnesota	83	253	559	619	0.45	0.25	0.18
Mississippi	70	61	2,235	2,237	0.70	0.13	1.13
Missouri	173	921	306	986	0.14	0.22	3.11
Montana	1	1	0	1	0.02	0.05	—
Nebraska	21	18	186	188	0.15	0.07	0.01
Nevada	0	0	0	0	—	—	—
New Hampshire	0	0	0	0	—	—	—
New Jersey	NA	NA	NA	NA	NA	NA	NA
New Mexico	174	28	9,502	9,504	0.69	0.17	2.11
New York	397	2,024	2,919	3,574	0.06	0.22	0.26
North Carolina	235	4	623	666	2.48	0.02	0.13
North Dakota	0	0	0	0	—	—	—
Ohio	27	223	1,803	1,817	0.60	0.09	0.54
Oklahoma	171	204	933	970	0.62	0.10	0.65
Oregon	0	0	0	0	—	—	—
Pennsylvania	45	7	1,241	1,242	0.03	0.02	0.12
Rhode Island	0	0	0	0	—	—	—
South Carolina	12	76	693	697	0.67	0.20	0.08
South Dakota	0	0	0	0	—	—	—
Tennessee	78	120	2,172	2,177	0.60	0.06	0.51
Texas	9	1,353	0	1,353	—	0.24	—
Utah	0	0	0	0	—	—	—
Vermont	0	0	0	0	—	—	—
Virginia	130	193	116	260	0.24	0.11	0.41
Washington	NA	NA	NA	NA	NA	NA	NA
West Virginia	30	594	5,039	5,074	0.38	0.80	1.68
Wisconsin	349	841	118	918	0.09	0.40	0.13
Wyoming	10	62	NA	NA	0.25	0.66	NA
Total	**1,712**	**9,141**	**14,983**	**17,635**	**0.09**	**0.09**	**0.16**

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

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.
- *Natural Gas 1996 Issues and Trends*, DOE 0560(96), December 1996.

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.

Feature Articles

May 1997

Restructuring Energy Industries: Lessons from Natural Gas

(Compares and contrasts the natural gas and electric power industries.)

July 1997

Intricate Puzzle of Oil and Gas "Reserves Growth"

(Discusses the factors that affect ultimate recovery estimates of a field or reservoir.)

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

August 1997

Natural gas Residential Pricing Developments During the 1996-97 Winter

(Discusses key factors that affect pricing patterns, highlights the effects of weather, utilization patterns of natural gas storage, and pricing mechanisms used in natural gas markets.)

December 1997

Recent Trends in Natural Gas Spot Prices

(Focuses primarily on conditions and developments in the East Consuming Region and their connection to prices at the Henry Hub in the Producing Region.)

March 1998

EIA Corrects Errors in EIA's Drilling Activity Estimates Series

(Discusses and corrects errors in EIA's monthly and annual estimates of oil and gas drilling activity.)

July 1998

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

April 1999

Natural Gas 1998: Issues and Trends - Executive Summary

(Examines the current natural marketplace from a series of vantage points.)

Special Focuses

January 1997

Natural Gas Productive Capacity

(Analyzes monthly natural gas wellhead productive capacity in the lower 48 States from 1985 and 1996 and project this capacity for 1996 and 1997.)

Outlook for Natural Gas Through 2015

(Presents an outlook for natural gas through 2015.)

August 1997

Worldwide Natural Gas Supply and Demand And the Outlook For Global LNG Trade

(Focuses on natural gas into the next century with emphasis on world natural gas supply and demand to 2015.)

September 1997

Advance Summary: U.S. Crude Oil, Natural Gas, and Natural gas Liquids Reserves, 1996 Annual Report - Advance Summary

(Focuses on proved reserves of domestic crude oil, natural gas, and natural gas liquids.)

May 1998

Deliverability on the Interstate Natural Gas Pipeline System

(Examines the capability of the interstate pipeline network to move gas to various U.S. markets and discusses changes occurring since 1990.)

Special Reports

March 1997

Natural Gas Analysis and Geographic Information Systems

(Explores how geographic information system techniques and methodologies are being used by the Energy Information Administration.)

April 1997

Natural Gas Pipeline and System Expansions

(Examines recent expansions to the North American natural gas)

Natural Gas 1996: Highlights

(Reviews data for 1996 based on Energy Information Administration surveys.)pipeline network.)

July 1997

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

August 1997

U.S. Natural Gas Imports and Exports - 1996

(Contains final 1996 data on all U.S. imports and exports of natural gas.)

September 1997

U.S. Underground Storage of Natural Gas in 1997: Existing and Proposed

(Examines recent and proposed expansions of underground natural gas storage capacity and deliverability in the United States as of September 1, 1997.)

October 1997

Comparison of Natural Gas Storage Estimates from the EIA and AGA

(Compares EIA and AGA estimates from January 1994 through July 1997.)

April 1998

Natural Gas 1997: A Preliminary Summary

(Reviews data for 1997 based on Energy Information Administration surveys.)

July l998

Revisions to Monthly Natural Gas Data

(Discusses the revision errors for natural gas data.)

August 1998

U.S. Natural Gas Imports and Exports - 1997

(Contains final 1997 data on all U.S. imports and exports of natural gas.)

April 1999

Natural Gas 1998: A Preliminary Summary

(Reviews data for 1998 based on Energy Information Administration surveys.)

July 1999

Retail Unbundling

(This report provides a brief summary of the status of retail unbundling programs.)

August 1999

U.S. Natural Gas Imports and Exports - 1998

(Contains final 1998 data on all U.S. imports and exports of natural gas.)

Appendix E

Technical Contacts

Section	Tables		Principal Data Sources	Technical Contact
Summary Statistics: Natural Gas Production	1,2,3	Monthly: Annual:	EIA-895, "Monthly Quantity of Natural Gas Report"	Sharon Belcher (202)586-6119
		Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202)586-4790
Extraction Loss	1	Monthly: Annual:	EIA computations Form EIA-816, "Monthly Natural Gas Liquids Report" and Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"	Margo Natof (202)586-6303
Supplemental Gaseous Fuels	2	Monthly: Annual:	EIA computations Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"	Margo Natof (202)586-6303
Imports and Exports	2	Monthly: Annual:	EIA computations Office of Fossil Energy, U.S. Department of Energy, "Natural Gas Import and Exports"	Ann Ducca (202)586-6137
Price: City Gate, Residential, Commercial, and Industrial	4	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202)586-4790
Wellhead	4	Monthly: Annual:	EIA computations Form EIA-895, "Monthly Quantity and Value of Natural Gas Report"	Sylvia Norris (202)586-6106
Electric Utility	4	Monthly:	Form FPC-423, "Cost and Quality of Fuels for Electric Power Plants"	Roy Kass (202)586-4790
Summary of Natural Gas Imports and Exports	5,6	Monthly:	Quarterly Natural Gas Import and Export Sales and Price Report	Ann Ducca (202)586-6137
Producer Related Activities: Natural Gas Production	7,8	Monthly:	EIA-895, "Monthly Quantity of Natural Gas Report"	Sharon Belcher (202)586-6119
Underground Storage:	9,10,11, 12,13,14	Monthly:	Forms FERC-8 and EIA-191, "Underground Gas Storage Report"	Carol Jones (202) 586-6168
Distribution and Consumption: Deliveries to: Residential, Commercial, Industrial, Electric Utility, All Consumers	 15 16 17 18 19	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers" Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	Roy Kass (202)586-4790
Average Price to: City Gate, Residential, Commercial, Industrial, Electric Utility	20 21 22 23 24	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers" Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	Roy Kass (202)586-4790
Onsystem Sales	25	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202)586-4790
Heating Degree Days	26	Seasonal:	National Oceanic and Atmospheric Administration	Patricia Wells (202)586-6077
Highlights				Mary Carlson (202)586-4749

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 termperature 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 oi1 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.

Salt Cavern Storage Field: A storage facility that is a cavern hollowed out in either a salt "bed" or "dome" formation.

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.