

# **Natural Gas Annual 2003**

## **December 2004**

**Energy Information Administration**

Office of Oil and Gas  
U.S. Department of Energy  
Washington, DC 20585

# Contacts

The *Natural Gas Annual 2003* is prepared by the Energy Information Administration, Office of Oil and Gas, Natural Gas Division, under the direction of Elizabeth Campbell.

General questions and comments concerning the contents of the *Natural Gas Annual* may be directed to the National Energy Information Center, (202) 586-8800 or to the subject matter experts listed on the EIA website: [EIA Contacts](#)

# Preface

The *Natural Gas Annual 2003 (NGA)* provides information on the supply and disposition of natural gas to a wide audience including Congress, Federal and State agencies, industry analysts, consumers, and education institutions. The 2003 data are presented in a sequence that follows natural gas (including supplemental supplies) from its production to its end use. Tables summarizing natural gas supply and disposition from 1999 to 2003 for each State follow these tables. Annual historical data are shown at the national level.

**Data Sources:** The data in the *Natural Gas Annual 2003* are primarily taken from surveys conducted by the Energy Information Administrations (EIA), U.S. Department of Energy (DOE). Two EIA surveys - the mandatory Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and the voluntary Form EIA-895, "Monthly Quantity and Value of Natural Gas Report"- provide most of the information presented in this report. Form EIA-176 was submitted by respondents out of an identified universe of operators of fields, wells, or natural gas processing plants who distribute gas to end users or transport gas across a State border; distribute natural gas; transport natural gas by pipeline; or operate underground natural gas storage facilities. Data collected on Form EIA-176 are not proprietary. Form EIA-895 was sent by the appropriate agencies of the 32 gas producing States.

Other EIA surveys that provided information for this report are:

- EIA-816, "Monthly Natural Gas Liquids Report," and EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," for gas processed, plant fuel, and extraction loss data;
- Form EIA-191, "Monthly and Annual Underground Gas Storage Report," for underground storage injections, withdrawals, and capacities;
- Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," for city gate prices;
- EIA-860B, "Annual Electric Generator Report - Nonutility," Form EIA-906, "Power Plant Report," and FERC-423, "Monthly Cost and Quality of Fuels for Electric Plants Report," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" for the quantity of gas consumed by the electric power sector and the price of natural gas consumed by electric utilities;

- EIA-910, "Monthly Natural Gas Marketer Survey," for natural gas prices paid by residential and commercial end-use customers in the States of Georgia, Maryland, New York, Ohio and Pennsylvania; and
- Office of Fossil Energy report, Natural Gas Imports and Exports, for the quantity and price of natural gas imports and exports.

More discussion of data sources and methodology is provided in Appendix A.

Changes to data sources for this *Natural Gas Annual* include:

- The data source and coverage for prices for natural gas used for generation of electricity are changed in the 2003 *Natural Gas Annual*. Previous years (through 2001), the price was derived from a survey of regulated electric utilities (Form FERC-423), and referred solely to the gas used by those utilities. In this publication, those data for 2002 and 2003 are supplemented by a corresponding survey of nonregulated utilities (Form EIA-423). Information from nonregulated power producers whose main line of business is the generation of power is combined with that from the regulated utilities to arrive at a price paid by the electric power sector.
- EIA collects monthly data on injections and withdrawals from underground natural gas storage fields from the field operators on Form EIA-191 "Monthly Underground Gas Storage Report." Beginning with 2003, EIA is using this data source instead of the annual data on injections and withdrawals reported on Form EIA-176. In the past EIA has compared the two data sources and used the EIA-176 when any small differences could not be resolved. Beginning with this issue of the *Natural Gas Annual*, EIA again compared the two data sources but used data from Form EIA-191 as the preferred source. Because respondents to the EIA-176 include lines of business that contract with storage operators as well as storage operators, the possibility of doublecounting of storage field net withdrawals is reduced with this change.
- EIA also conducted a review of storage field operations for the *Natural Gas Annual 2003* which has resulted in adding a few new fields and removing a number of fields from Table 14. Fields which were identified as plugged, abandoned, or producing the remaining base

or native gas were removed from the storage field list. It should be noted that some fields remaining in the list are not currently receiving or withdrawing gas.

EIA's ongoing data quality efforts have resulted in a number of revisions to the 2002 data series. Production

volumes have been revised for the Federal offshore and several States. Several data series based on the Form EIA-176, including deliveries to end-users in several States, were also revised. Additionally, revisions have been made to include updates to the electric power and vehicle fuel end-use sectors.

## 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.

<b>Product</b>	<b>Format</b>	<b>Contents</b>
<b><u>Publications</u></b>		
<i>Weekly Natural Gas Storage Report</i>	HTML	Weekly estimates of natural gas in underground storage for the U.S. and three regions of the U.S.
<i>Natural Gas Weekly Update</i>	PDF	Analysis of current price, supply and storage data
<i>Natural Gas Monthly</i>	PDF, HTML, XLS	Monthly supply, disposition, and price data
<i>Natural Gas Annual</i>	PDF, XLS	Annual supply, disposition, and price data
<i>U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves</i>	PDF, HTML	Proved reserves in the United States
<i>Oil and Gas Field Code Master List</i>	PDF	Listing of U.S. oil and gas field names
<b><u>Databases</u></b>		
Monthly Data	TXT	Tables 1-6, and 9 from the <i>Natural Gas Monthly</i>
Historical Monthly Data	EXE	Consumption and price data, 1984-present
Annual Data	XLS, TXT	Data from the <i>Natural Gas Annual</i>
Historical Annual Data	XLS, TXT	Data from the <i>Historical Natural Gas Annual</i>
Field Codes	EXE	Oil & Gas Field Code Master List
<b><u>Applications</u></b>		
EIA-176 Query System	EXE	Company filings to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"

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

XLS (Excel) files are in spreadsheet format and are viewable and downloadable to the user's PC.

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.

# Contents

Overview .....	1
Supplies .....	5
Imports & Exports .....	13
Movements and Storage.....	20
Consumption.....	31
Consumer Prices .....	43
State Summaries .....	50
Appendices	
A. Summary of Data Collection Operations and Report Methodology .....	155
B. Metric and Thermal Conversion Tables.....	164
Glossary.....	169

# Tables

1. Summary Statistics for Natural Gas in the United States, 1999-2003 .....	1
2. Natural Gas Production, Transmission, and Consumption by State, 2003 .....	3
3. Gross Withdrawals and Marketed Production of Natural Gas by State and the Gulf of Mexico, 1999-2003 .....	6
4. Offshore Gross Withdrawals of Natural Gas by State and the Gulf of Mexico, 1999-2003 .....	8
5. Number of Wells Producing Gas and Gas Condensate by State and the Gulf of Mexico as of December 31, 1999-2003 ....	9
6. Wellhead Value and Marketed Production of Natural Gas by State, 1999-2003 .....	10
7. Natural Gas Processed, Liquids Extracted, and Estimated Extraction Loss by State, 2003 .....	11
8. Supplemental Gas Supplies by State, 2003 .....	12
9. Summary of U.S. Natural Gas Imports and Exports, 1999-2003 .....	16
10. Summary of U.S. Natural Gas Imports by Point of Entry, 1999-2003 .....	17
11. Summary of U.S. Natural Gas Exports by Point of Exit, 1999-2003 .....	19
12. Interstate Movements and Movements Across U.S. Borders of Natural Gas by State, 2003 .....	22
13. Additions to and Withdrawals from Gas Storage by State, 2003 .....	29
14. Underground Natural Gas Storage Capacity by State, as of December 31, 2003 .....	30
15. Consumption of Natural Gas by State, 1999-2003 .....	33
16. Natural Gas Delivered to Consumers by State and Sector, 1999-2003 .....	34
17. Natural Gas Delivered to Commercial Consumers for the Account of Others by State, 1999-2003 .....	37
18. Natural Gas Delivered to Industrial Consumers for the Account of Others by State, 1999-2003 .....	39
19. Number of Natural Gas Residential Consumers by Type of Service and State, 2002-2003 .....	40
20. Number of Natural Gas Commercial Consumers by Type of Service and State, 2002-2003 .....	41
21. Number of Natural Gas Industrial Consumers by Type of Service and State, 2002-2003 .....	42
22. Average City Gate Price of Natural Gas in the United States, 1999-2003 .....	46
23. Average Price of Natural Gas Delivered to Consumers by State, 2003 .....	47
24. Percent Distribution of Natural Gas Supply and Disposition by State, 2003 .....	51
25. Percent Distribution of Natural Gas Delivered to Consumers by State, 2003 .....	52
26. Summary Statistics for Natural Gas - Alabama, 1999-2003 .....	53
27. Summary Statistics for Natural Gas - Alaska, 1999-2003 .....	55
28. Summary Statistics for Natural Gas - Arizona, 1999-2003 .....	57
29. Summary Statistics for Natural Gas - Arkansas, 1999-2003 .....	59
30. Summary Statistics for Natural Gas - California, 1999-2003 .....	61
31. Summary Statistics for Natural Gas - Colorado, 1999-2003 .....	63
32. Summary Statistics for Natural Gas - Connecticut, 1999-2003 .....	65
33. Summary Statistics for Natural Gas - Delaware, 1999-2003 .....	67
34. Summary Statistics for Natural Gas - District of Columbia, 1999-2003 .....	69
35. Summary Statistics for Natural Gas - Florida, 1999-2003 .....	71
36. Summary Statistics for Natural Gas - Georgia, 1999-2003 .....	73
37. Summary Statistics for Natural Gas - Hawaii, 1999-2003 .....	75
38. Summary Statistics for Natural Gas - Idaho, 1999-2003 .....	77
39. Summary Statistics for Natural Gas - Illinois, 1999-2003 .....	79
40. Summary Statistics for Natural Gas - Indiana, 1999-2003 .....	81
41. Summary Statistics for Natural Gas - Iowa, 1999-2003 .....	83
42. Summary Statistics for Natural Gas - Kansas, 1999-2003 .....	85
43. Summary Statistics for Natural Gas - Kentucky, 1999-2003 .....	87
44. Summary Statistics for Natural Gas - Louisiana, 1999-2003 .....	89
45. Summary Statistics for Natural Gas - Maine, 1999-2003 .....	91
46. Summary Statistics for Natural Gas - Maryland, 1999-2003 .....	93
47. Summary Statistics for Natural Gas - Massachusetts, 1999-2003 .....	95
48. Summary Statistics for Natural Gas - Michigan, 1999-2003 .....	97
49. Summary Statistics for Natural Gas - Minnesota, 1999-2003 .....	99
50. Summary Statistics for Natural Gas - Mississippi, 1999-2003 .....	101
51. Summary Statistics for Natural Gas - Missouri, 1999-2003 .....	103
52. Summary Statistics for Natural Gas - Montana, 1999-2003 .....	105
53. Summary Statistics for Natural Gas - Nebraska, 1999-2003 .....	107

54. Summary Statistics for Natural Gas - Nevada, 1999-2003 ..... 109

55. Summary Statistics for Natural Gas - New Hampshire, 1999-2003 ..... 111

56. Summary Statistics for Natural Gas - New Jersey, 1999-2003 ..... 113

57. Summary Statistics for Natural Gas - New Mexico, 1999-2003 ..... 115

58. Summary Statistics for Natural Gas - New York, 1999-2003 ..... 117

59. Summary Statistics for Natural Gas - North Carolina, 1999-2003 ..... 119

60. Summary Statistics for Natural Gas - North Dakota, 1999-2003 ..... 121

61. Summary Statistics for Natural Gas - Ohio, 1999-2003 ..... 123

62. Summary Statistics for Natural Gas - Oklahoma, 1999-2003 ..... 125

63. Summary Statistics for Natural Gas - Oregon, 1999-2003 ..... 127

64. Summary Statistics for Natural Gas - Pennsylvania, 1999-2003 ..... 129

65. Summary Statistics for Natural Gas - Rhode Island, 1999-2003 ..... 131

66. Summary Statistics for Natural Gas - South Carolina, 1999-2003 ..... 133

67. Summary Statistics for Natural Gas - South Dakota, 1999-2003 ..... 135

68. Summary Statistics for Natural Gas - Tennessee, 1999-2003 ..... 137

69. Summary Statistics for Natural Gas - Texas, 1999-2003 ..... 139

70. Summary Statistics for Natural Gas - Utah, 1999-2003 ..... 141

71. Summary Statistics for Natural Gas - Vermont, 1999-2003 ..... 143

72. Summary Statistics for Natural Gas - Virginia, 1999-2003 ..... 145

73. Summary Statistics for Natural Gas - Washington, 1999-2003 ..... 147

74. Summary Statistics for Natural Gas - West Virginia, 1999-2003 ..... 149

75. Summary Statistics for Natural Gas - Wisconsin, 1999-2003 ..... 151

76. Summary Statistics for Natural Gas - Wyoming, 1999-2003 ..... 153

A1. Natural Gas Unaccounted for by State, 1999-2003 ..... 163

B1. Summary Statistics for Natural Gas in the United States, Metric Equivalents, 1999-2003 ..... 166

B2. Thermal Conversion Factors and Data, 1999-2003 ..... 168

## Illustrations

1. Selected Average Prices of Natural Gas in the United States, 1999-2003.....	2
2. Natural Gas Supply and Disposition in the United States, 2003.....	4
3. Marketed Production of Natural Gas in the United States and the Gulf of Mexico, 2003.....	7
4. Marketed Production of Natural Gas in Selected States and the Gulf of Mexico, 2002-2003.....	7
5. Net Imports as a Percentage of Total Consumption of Natural Gas, 1999-2003.....	14
6. Flow of Natural Gas Imports and Exports, 2003.....	15
7. Principal Interstate Natural Gas Flow Summary, 2003.....	21
8. Interstate Movements of Natural Gas in the United States, 2003.....	28
9. Locations of Existing Natural Gas Underground Storage Fields in the United States.....	30
10. Natural Gas Delivered to Consumers in the United States, 1999-2003.....	32
11. Natural Gas Delivered to Consumers in the United States, 2003.....	36
12. Percent of Natural Gas Deliveries in the United States Representing Deliveries for the Account of Others, by Consumer Sector, 1999-2003.....	38
13. Average Price of Natural Gas Delivered to Consumers in the United States, 1999-2003.....	44
14. Average Price of Natural Gas Delivered to Residential Consumers, 1980-2003.....	45
15. Average City Gate Price of Natural Gas in the United States, 2003.....	45
16. Average Price of Natural Gas Delivered to U.S. Residential Consumers, 2003.....	48
17. Average Price of Natural Gas Delivered to U.S. Commercial Consumers, 2003.....	48
18. Average Price of Natural Gas Delivered to U.S. Onsystem Industrial Consumers, 2003.....	49
19. Average Price of Natural Gas Delivered to U.S. Electric Power Consumers, 2003.....	49